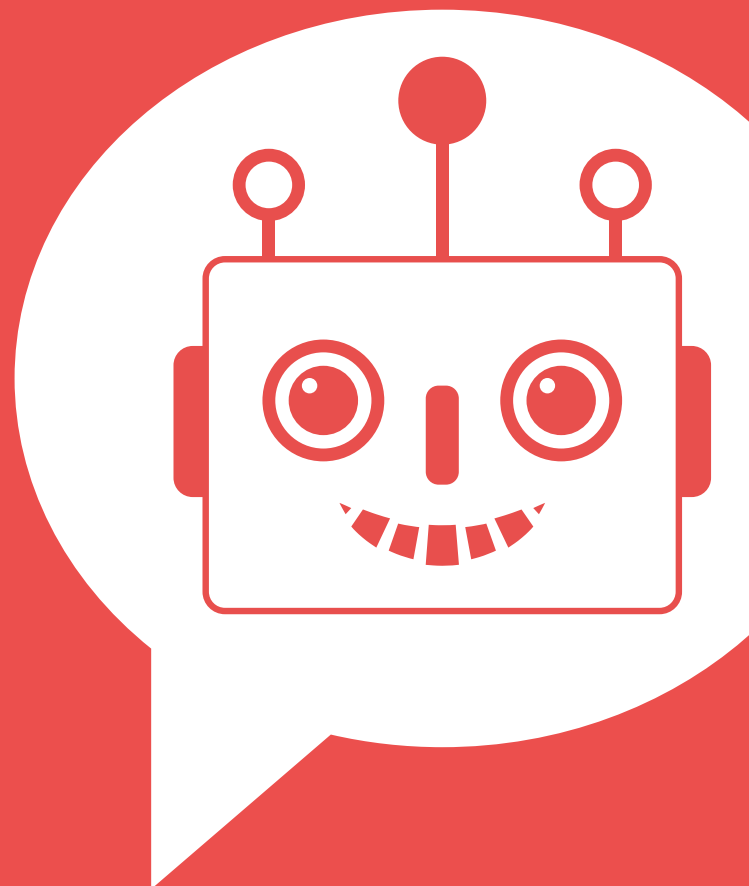# Deploying chatbots to leverage consumer behaviour

A white paper that discusses the importance of understanding and reacting to consumer demands through conversational user interfaces and strategies for delivering effective chatbots.

EDEN AGENCY

Deploying chatbots to leverage consumer behavior

A white paper that discusses the importance of understanding and reacting to consumer demands through conversational user interfaces and mechanisms for delivering effective chatbots.

A Word From Our Commercial Director

Craig Gilchrist
Commercial Director

It's an incredibly exciting time in digital. Advancements in artificial intelligence are enabling us as creators to build new and powerful consumer products, whilst at the same time readily available VR headsets are increasing appetite for more intimate engagement. The proliferation of messaging apps has made it as normal to communicate with our favourite brands as it has to speak to our friends. The advent of smart homes and imminent arrival of driverless cars has made it more and more common to speak to previously inanimate objects as if they were as sentient as you or me.

While the worlds largest technology providers (Google, Facebook, Microsoft and Amazon) are arming us with the platforms to allow creators to leverage incredibly powerful artificial intelligence, some of the biggest brands are already implementing chatbots and virtual assistants into their services and marketing efforts. This paradigm shift in thinking from app to well-executed bot is already moving consumer perceptions of bots away from 'annoying automated telephone help desk' toward 'slick task-based effectiveness'.

People are relying more and more on their own personal assistants to perform tasks by uttering words like "OK Google", "Hey Siri" and "Alexa…". The companies who are providing these assistants are realising the potential of the worlds development community to expand the capabilities of their AI with brand integrations and interactions. Any lag in the enabling of these integrations can have a very real affect on the sale of consumer electronic devices. An Uber customer might consider the ability to hail an Uber taxi by voice when purchasing their next mobile device.

This bot revolution is still a very young one but it's one which will grow in demand and acceptance by consumers and businesses alike. While tech giants clamber to attract developers to their platforms, more and more electronic consumer devices are integrating with these artificial intelligences. The opportunity for brands to become integral parts to consumer lives is more real than ever before.

This new phase in consumer digital products and interactions reminds me of the start of the app revolution in 2007-2008. We were fortunate enough to be an early producer of mobile apps which allowed our team to grow while enabling our customers to grow through the new digital opportunities that smartphones afforded. We're now ready to enable brands again through the exhilarating opportunities that this next phase affords.

I hope you enjoy this white paper, we've put it together to arm you with information that you need to engage your customers and satisfy their demands by means of chatbots and virtual assistants while giving you advice on effective marketing and implementation strategy.

Contents

hello chatbot
goodbye app

The Next Wave Of User Interface Is Conversational

You won't be touching the instruments in your driverless cars, you'll be speaking to them. Why should your favourite brands and devices be any different?

THE ECHO DOT WAS THE HIGHEST SELLING DEVICE ON AMAZON.COM THROUGHOUT NOVEMBER AND DECEMBER OF 2016.

Amazon Echo was first pitched to Amazon executive Dave Limp in 2011 and since then it has become the standard bearer in virtual assistants for the home.

Amazon's attempts to launch an iPhone or Android rival into the mobile market left the Echo on the back burners of Amazon's labs for years. Admittedly it's an unusual concept in the age of smartphones that so much effort went into a producing a device which has no screen for the user to interact with, however non can deny it's incredible success.

Initially during it's pre-order phase in the USA the device hit 1-million pre-orders in the first two weeks before it's launch in June 2015. Since then it has had it's debut release in the UK in September 2016 and in Germany in October 2016 and was the fastest selling device on Amazon throughout Christmas.

One of the secrets of it's success is it's 3rd party developer powered feature approach. Essentially it's a conduit for other services. You ask Alexa (Echo's virtual assistant) to in turn ask 3rd party providers to perform tasks for you. It's not uncommon to ask Alexa to ask Uber to call you a ride or to play a track on Spotify or even order a pizza on Just-Eat.

Why are we waxing lyrical about Amazon Echo I hear you ask? Well because it is the flagship in a new paradigm in computing, a paradigm which will be worth billions of dollars in 2017 and one which will change the way we interact with computers in every way shape and form. That new paradigm is **conversational user interfaces**.

We're now a society of instant gratification, constant online access is sacrosanct and the most powerful movement in technology is the chatbot or virtual assistant. Always online, always ready to serve and always improving, the artificially intelligent chatbot is the answer to our needs for instant information.

While virtual assistants move from our smartphones into our homes, chatbots will replace brand website and social interactions on our favourite chat platforms.

Facebook has invested heavily in developing it's Messenger platform and enabling developers to build chatbots on it's framework and with good reason. Messaging app usage has surpassed social network usage.

This major shift in consumer behaviour should be seen as an opportunity for distribution.

Chat bots can allow a consumer experience similar to that of the physical retail store, all within a chat client (Facebook, Messenger, Slack, Kik etc.).

The powerful and personal interaction together with the ability for brands to start conversations mean the opportunities to engage with consumers is greater than ever before.

Deploying chatbots to leverage consumer behaviour

What are the differences between chatbots & virtual assistants?

A chatbot is a service, powered by artificial intelligence, that you interact with via a chat interface. The responses provided by the chat bot can be any services, functional or fun, and it could live in any major chat product (Facebook Messenger, Slack, Telegram, Text Messages, etc.).

A virtual assistant is a multi-purpose chatbot which interacts with 3rd party services and resides in hardware devices such as your smartphone or personal computer (Siri, Google Assistant or Cortana), dedicated hardware devices (Alexa via Amazon Echo family) or as ancillary functionality in a larger device (Samsung smart fridge, in-car assistants).

Do I really need to be thinking about chatbots & virtual assistants?

You might ask yourself if now is the time to be investing in virtual assistant integrations or chatbots or if your existing online activities are already enough. What you'll find in this white paper is that yes, now is absolutely the time to invest in this market and your conversational artificial intelligence can compliment your existing marketing activity.

Our evaluations

We polled 400 consumers* across the UK to gauge their understanding, views and experiences of chat bots and virtual assistants. Our intention was to assess:

- Existing consumer experiences with chatbots and virtual assistants.

- Where consumers expected chatbots to fulfil their requirements in place of websites and apps.

- The functions that consumers expect to perform using their virtual assistants.

- Consumer online and customer service frustrations.

- Consumer fears and potential barriers that will deter consumers from using chatbots and virtual assistants.

Hi, I'm PretzelBot.
Scan my code in
Facebook Messenger
to begin.
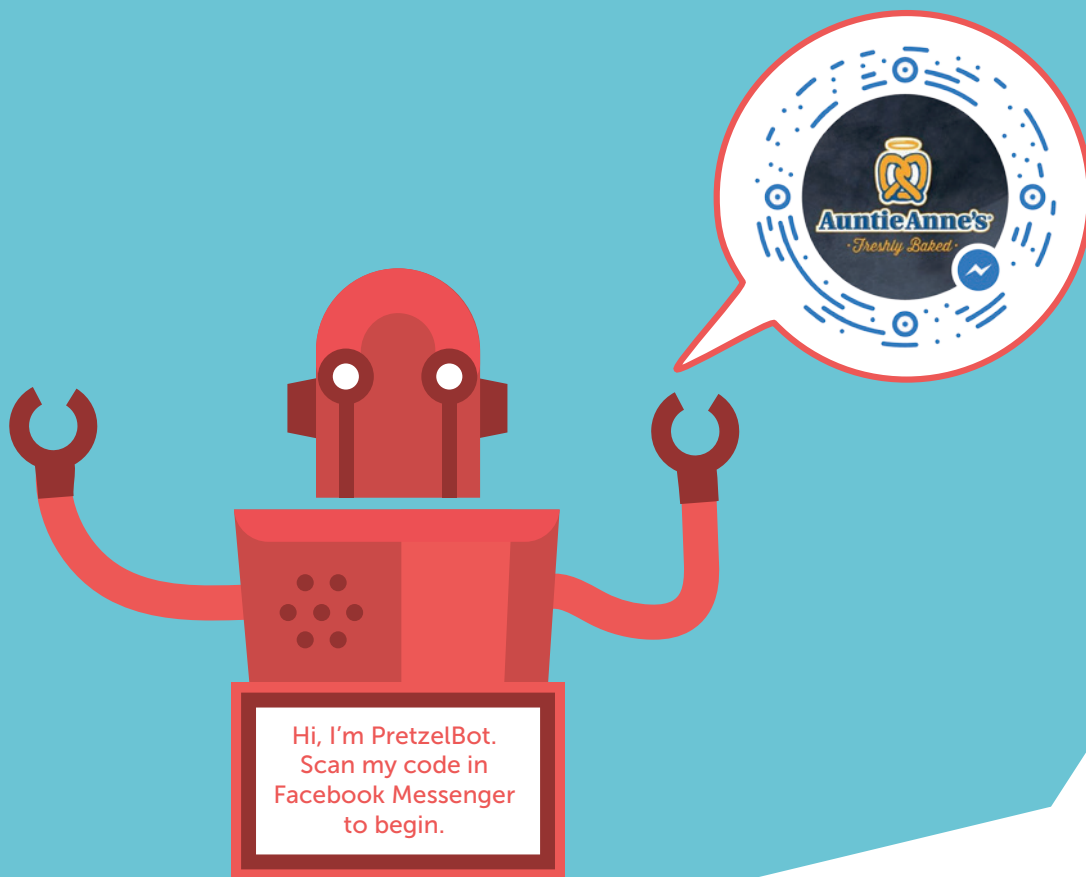
What can chatbots do for my brand?

YOU'VE ALREADY BEEN USING MESSAGING APPS EVERY DAY SUCH AS FACEBOOK MESSENGER, SNAPCHAT & WHATSAPP. NOW IMAGINE YOUR BRAND CAN RESIDE THERE ALL DAY, EVERY DAY JUST WAITING TO HELP YOUR CUSTOMERS WITH WHATEVER REQUIREMENTS THEY MIGHT HAVE.

AI bots are centralised applications which can perform simple tasks like ordering a taxi, booking a meeting or purchasing an item online.

Fast and cheap AI is now available to utilise on demand by developers from providers like Amazon Web Services, Microsoft Azure, IBM & Google. Early last year Facebook opened up it's Messenger API and more recently Amazon has opened up it's Alexa API. These tech companies have opened the floodgates for developers to produce content for these services that respond to consumer demands on-demand.

All of these advances mean that with the right implementation, it's a very cost effective and instant way to access your users and deliver content and services. This new platform for engagemetn can be done at fractions of mobile app development or website development costs.

The beauty of a chatbot is that it can be developed to be almost entirely platform agnostic. Chatbots don't care whether you're runing iOS or Android, neither do they care whether or not your accessing the bot through Facebook or Telegram or via a website chat window. Build the artificial intelligence once and then have the channels (like Facebook Messenger, Slack etc) simply turned on.

There's no reason why the very same bot can't speak on your website, via your app, on Facebook Messenger and through an Amazon Echo. It's the same engine respoding to all of the people regardless of their means of communication.

With instant access to your content and services through the consumers favourite messaging app; the opportunities are endless.

We've created the PretzelBot for a retail client (Auntie Anne's) which works on Facebook Messenger and fulfils all of your Auntie Anne's pretzel needs. Give it a go by scanning the code at the top of this page in your Facebook Messenger app and start chatting.

Deploying chatbots to leverage consumer behaviour

A few perfectly formed examples

The opportunity for chatbots is endless, coupled with your brand expertise, services and products there is literally no end to the function that a chatbot can perform and like us, they get more intelligent with age. Also like us they can change their reactions based on context and scenario. We've put together a few examples to whet your appetite as to what could be done with your new chatbot

Examples by sector

We've hand picked a couple of sectors to give you an idea of what a bot can do, this is a very small subset of ideas we had in a few minutes of chatting amongst ourselves. If your brand sector doesn't appear then challenge us to come up with an example for your sector, you won't be disappointed.

Retail
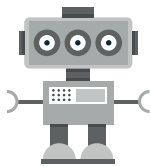
- Fashion stylebot could give you matching dress styles from the latest celebrity award ceremony. It could also suggest a party outfit inspiration based on your physique and let you buy the item online.

- Sushibot tells you how each dish is made and could give you suggestions based on other dishes that you like and then create the order for you to pick up at your local store.

Travel & Leisure
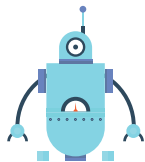
- Travelbot gives you hot tips on places to eat and drink based on local recommendations and even books the restaurant for you. Its recommendations are powered by Trip Advisor reviews and your own preferences.

- Conciergebot takes your hotel requests during your stay at a brand hotel. Room service orders, concierge and taxi booking is all handled in this one bot. It also gives you checkout times and local information.

Government & Energy
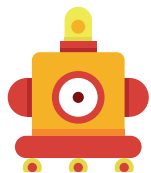
- Councilbot gives you local authority information such as swimming bath opening times, helpful contact details and refuse collection schedules.

- GovBot lets you interact with government departments and agencies, be kept up-to-date about legislation which might affect you. GovBot also lets government gauge public reaction to policy change and events through interactive surveys.

- Utilitybot gives you your latest bill and tips on how to reduce your spending. It also allows you to easily register complaints online with instant conflict resolution for the most common complaints.

Professional Services
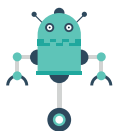
- Lawbot helps you determine potential risks to your business and gives advice on resolving legal issues.

- Dr Bot gives you a medical diagnosis based on your symptoms and directs you to the best medical consultant based on it's diagnosis.

Utility & Finance
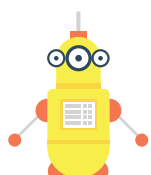
- Accountbot gives you up to date bank account and investment information and tells you how your managed funds are doing. It actively sends you messages to notify you of changes to your balance.

- Schedulebot has access to your calendar and suggests the best time for a meeting. It even selects the people in your business that should be present based on its understanding of the meeting context.

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Have you ever spoken to a chatbot?

A chatbot is a service, powered by artificial intelligence, that you interact with via a chat interface. The responses provided by the chat bot can be any services, functional or fun, and it could live in a chat window on a website or any major messenger app such as Facebook Messenger, Slack, Telegram. They can also be spoken to via SMS.

With this in mind, have you ever spoken to a chatbot?

82% Millennials

71% Gen X

47% Baby Boomers
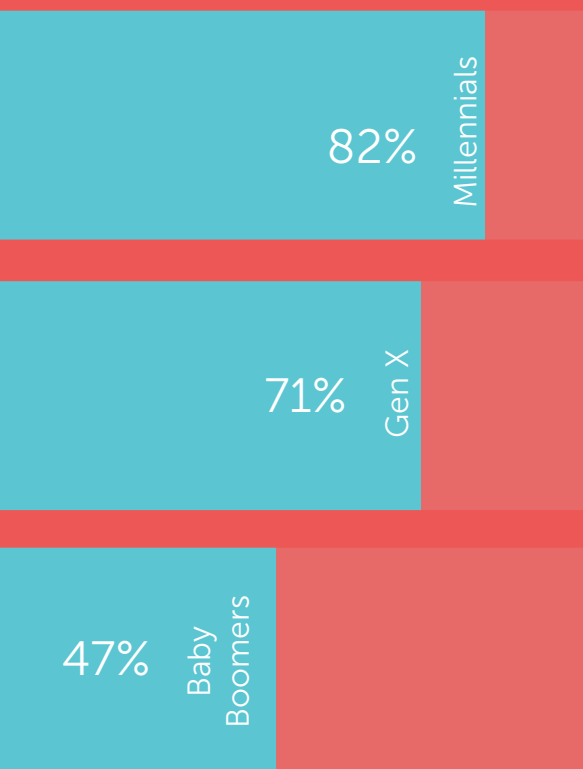
Percentage of consumers who had interacted with a chatbot

Gaining traction & comfort

Already chatbots are gaining traction. Of the correspondents we asked in our survey, 68% had already been in contact with a chat-bot of some description. This figure rose to a massive 82% among millennials.

The real catalysts behind the growth of bots only came into being mid 2016 when Facebook opened it's Messenger API and at the time of the white paper (January 2017) we already have incredible recognition of the penetration of bot technology. 35,000 bots had been developed for Facebook by the end of 2016.

Most of our research panel reported that they are highly likely to interact with bots for a multitude of tasks. 63% of our panel would make a purchase via a bot where the value was under £100 and 58% would even use a chatbot in an emergency.

Our research found that people were unexpectedly comfortable speaking to bots with only 14% of respondents reporting that they would find the experience of speaking to a machine unnerving.

One indicator found that consumers aren't entirely trusting of bot technology with 34% showing concerns that bots would fail to make an accurate booking or purchase.

What our research indicates is that there is already a very willing consumer audience for chatbots and one which is comfortable with the concept.

Much of this comfort we believe is derived from consumers existing experiences with virtual assistants with over 99% having used either Siri, Cortana, Google Assistant or Alexa via their personal devices.

We believe that comfort levels, having already started on a solid foundation, will only grow and that the convenient access to bots will outstrip app and website usage over the coming years.

Businesses who adopt the technology early have the greatest opportunity to attract users and consumers while the technology still offers high levels of intrigue but they also have exceptional responsibility to provide good consumer experiences.

Our panel reported that their confidence in bot technology is generally good but they still have some doubts about the reliability of bots to understand and carry out their requests.

Consumer chatbot comfort

We were interested in which tasks that consumers were comfortable performing by conversing with an AI so we asked them to rate how likely they were to perform very specific tasks on a scale of 0 (never) to 5 (definitely). We chose these tasks based on our initial ideas we mentioned earlier in this document.

■ Likely ■ Unlikely

Task	Likely	Unlikely
BUY ITEMS COSTING OVER £100	52%	48%
TO GET A MEDICAL DIAGNOSIS	54%	46%
FIND A REAL PERSON WITHIN AN ORGANISATION	62%	38%
BUY ITEMS COSTING UNDER £100	64%	36%
TO PAY A BILL	65%	35%
TO MAKE A COMPLAINT	65%	35%
GET EMERGENCY INFORMATION	67%	33%
SUBSCRIBE TO A MAILING LIST	68%	32%
TO GET INSPIRATION FOR AN ONLINE PURCHASE	71%	29%
TO GET UP TO DATE ACCOUNT INFORMATION	73%	27%
TO PLAY A GAME	73%	27%
TO MAKE A RESERVATION	80%	20%
TO GET TECHNICAL OR PROFESSIONAL HELP ONLINE	81%	19%
TO GET RECIPES	80%	20%
TO GET NEWS AND WEATHER UPDATES	87%	13%

Breaking down consumer needs

Whilst most of the results point to a healthy appetite for chatbots there are a few areas in the results which show a small lack of trust in AI. The best highlighting example was that while over 80% of consumers are happy to make a reservation using a bot, only 52% would buy an item costing over £100.

These results further support our belief that while the benefits of bots to brands and consumers is exceptional, there is a small margin of error to completely lose the confidence of consumers.

We specifically asked consumers where they would choose bots over apps and websites which is what is reflected in the results you see.

The results point to an overwhelming preference for the convenience and personal approach that a chatbot can give over the functions offered by traditional digital medium such as apps and websites.

Consumers were far more likely to utilise bots over apps and websites where the personal risks were lower. When asked if consumers would use a bot to get a medical diagnosis (54%) or make a significant purchase (52%) they were far more reluctant than they were performing tasks such as playing games (73%) or getting recipes (80%).

Our team discusses

When we looked at perceived benefits versus other medium we can see that face-to-face was by far the most preferred way to communicate with bots a close second.

Perhaps consumers see bots as a significant alternative to traditional digital medium where a real person isn't available?

Maybe that's because chatbots are so new. What if well executed bots could change that perception as people get used to interacting with them? I'd bet we could get consumers to choose bots first.

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Still a way to go to complete comfort.

We asked our panel specifically to rank channels in order of their effectiveness to resolve a query that they had with a retailer, utility provider or any type of authority such as their local council. The highest confidence that a resolution would be obtained was given a score of 9 and the lowest confidence given a score of 1.

It's worth noting that we were interested to see how our panel perceived the effectiveness of bots under a very specific set of circumstances involving an element of frustration.

Currently our panel seem far more comfortable engaging with channels as a mechanism to get to a responsible human. This was especially where they perceived that the person responding was solely responsibile for resolving the consumer issue. This is true for telephone, online chat & face-to-face resolutions as well as e-mail resolution.

Speed of resolution is also definitely a factor when resolving queries with most of our respondents rating postal service as the least effective means of resolving a query. Mobile apps & social media also rate poorly as a means for resolving queries.

The social-media analytics firm Simply Measured reports that the number of top brands with dedicated social customer service (Twitter handles) has increased by 19% year-over-year* so it's surprising that our study shows that consumers still might be choosing more traditional methods of communication over social media for complaints or complex queries.

Given consumers constant need for round the clock communication, it might be that brands are failing to provide adequate responses via social media due to lack of human resources. It may also be down to the restrictions of the channels, such as 140 character limits on Twitter which aren't allowing consumers to articulate their needs effectively.

You can see from the results below that consumers are comfortable engaging with bots for a variety of needs and even those which involve a payment or emergency circumstances. What if we can bridge the gap between convenience, lack of customer service resources and the need for rapid responses via chatbots?

One thing is for certain, consumers don't perceive mobile apps as a valid form of communication or information when looking to communicate under circumstances involving frustration.

Chat bots are definitely a very affordable ways to engage consumers, even when they fall off the happy consumer journey.

Consumer experiences currently have not yet be influenced enough by AI conversation since it's so new. The technology exists and is readily available for brands to adopt. It's time to change consumer perceptions.
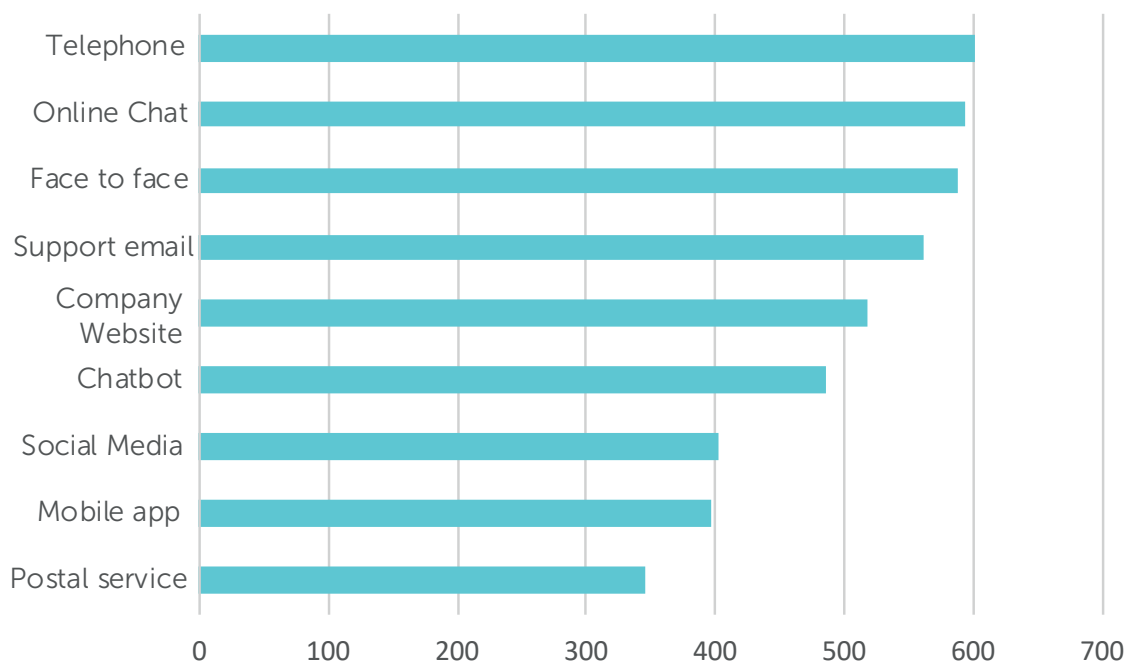
introducing channels

Facebook Messenger, Skype, Kik, SMS, Alexa To Name But a Few

The real beauty of an artificially intelligent bot is that it works on an infinite number of channels. It exists to serve and isn't concerned with the mechanism you choose to speak to it. Bot frameworks mean that you can build a single bot which responds to people via web chat, Facebook Messenger, Skype and lots of other channels in exactly the same way. Adding new channels to speak to the chatbot can be done by simply turning them on without the need for expensive development.

BUILD A BOT ONCE AND THEN CONNECT IT TO YOUR FAVOURITE SERVICES. THE SAME ARTIFICIAL INTELLIGENCE CAN SPEAK TO THE 900 MILLION FACEBOOK MESSENGER USERS OR THE GROWING ARMY OF AMAZON ECHO CUSTOMERS PROVIDING UNIFORM EXPERIENCES FOR BOTH.

Build and connect intelligent bots to interact with your users naturally wherever they are — from your website or app to text/SMS, Skype, Slack, Facebook Messenger, Office 365 mail, Teams and other popular services.

Consumers who want to know your latest share price, see your latest products or want to engage with your services in any way can just as well do it typing into Facebook Messenger on their phone or by speaking to Alexa via their Amazon Echo in the kitchen.

The fantastic thing about chatbots is that they are a single cloud-based service which really is quite impartial to the means to which you are speaking to it. It's completely platform and channel agnostic.

We call the mechanism for speaking to the robot a "chat services channel". They're usually in the form of a messaging app but can take many forms. As more and more channel owners race to enable developers it becomes more and more simple and cost-effective to engage with your consumers wherever they hang out.

Our preferred bot framework allows us to simply turn on the channel you want consumers to speak to the chatbot on. If you find that your consumers hang out on the Kik messenger platform then we can just turn the service on for those users with no developer required.

Although some rules may be a little different for each channel (such as the ability to only directly message a follower on Twitter), the core functionality of your chat bot carries throughout all channels.

Another opportunity for chatbots is that once a consumer has engaged with you on any particular channel you can always reinstate that line of communication at any point.

If a consumer speaks to you on Facebook Messenger to get the latest content then why not stream them the latest content every day by delivering snippets to their chosen channel of communication?

When a consumer engages with a chatbot it's an opportunity to delight them unexpectedly. It's human nature to explore and trying to find the edges of artificially intelligence capability is no exception.

Imagine being able to completely pivot your online communications and content based on topical events?

Imagine starting a relevent conversations on Twitter based on something that person said in a tweet?

All of this is possible with a bot. It's a cloud-enabled AI-powered web service which has tendrils in all of your consumers favourite social media, messaging apps, websites and digital assistants.

Deploying chatbots to leverage consumer behaviour

Binding The Channels With Cards

We can articulate complex concepts and structures universally in chat using dialogues that contain text, images and action buttons. These combined elements are known as cards and this capability spans all channels. They can be seen on Facebook Messenger, in website chat or through Amazon Echo's visual interface via the Alexa app.

SOMETIMES PLAIN TEXT ISN'T ENOUGH FOR OUR BOTS TO CONVEY INFORMATION. SOMETIMES OUR AI MIGHT WANT TO ARTICULATE MORE COMPLEX CONCEPTS SUCH AS CHOICES, IMAGERY OR CONFIRMATION. THIS IS WHERE CARDS COME INTO PLAY.

Cards give us the ability to attach richer objects to the bots responses such as images, video URLs, dialogue boxes and questions requiring a user decision.

Rendering rich content can be done in numerous forms such as sign-in cards allowing the user to authenticate with your brand services, receipt cards for delivering invoices or receipts or more simple imagery to convey products or video previews.

Although cards may appear differently in the different channels the beauty is that functionally the bot itself is impartial in it's approach to delivering the content and the responsibility is firmly put into the hands of the platform developers for the chosen channel. This means the user experience will always be visually appealing and familiar to the user.

Above: An example of card interactions showing how cards would appear in web chat.

There are a few examples where this interaction might be slightly different between text based messenger apps and voice enabled interfaces. Amazon Echo for example might say something like "I've sent your receipt to the Alexa app on your smartphone" because it has no visual interface to portray visual information.

Even if Alexa sends information to an accompanying app, the information is still presented as a card. Its content can still be created and handled in much the same way as it would on Facebook, Twitter, Kik or Slack.

The most common usage of cards is to add dynamism to the conversation by presenting options to the user. If the user wants to ask about your products then show them pictures. If they want a taxi then present their location and destination as a confirmation box with a map.

Chat bots allow brands and developers to concentrate on the content and not the delivery. Bots and enabled virtual assistant skills are the first truly platform agnostic development tool for developers and this is reflected in the massively reduced costs of development and deployment.

Platform agnostic is a concept that refers to the design attributes and philosophies of software products. A platform agnostic product runs equally well across more than one platform.
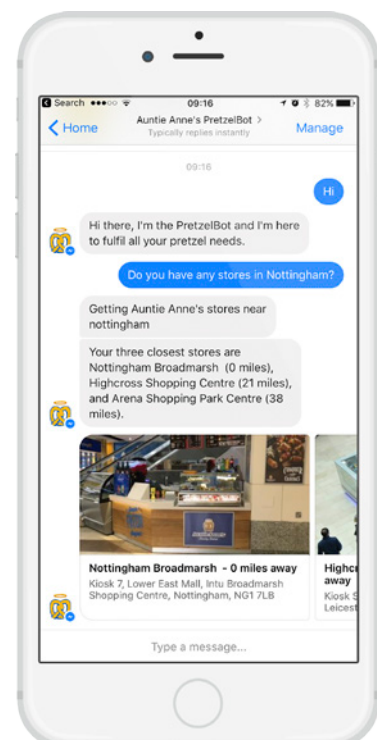
Above: an example of a card interaction as seen in the Auntie Anne's PretzelBot using Facebook Messenger for iPhone.

Using chatbots to avoid frustration

We were interested in finding out where our panel felt they were let down by brands and services and so we asked specifically "Where have you experienced customer service frustration in the past when looking for information or trying to get help from a service, brand or authority"

65%	63%	48%	47%	43%	30%	25%
Can't find answers to simple questions via the website	No telephone support out of hours	No answer on contact forms or online chat	Inability to search the website for an answer	Open hours and address information not shown online	No social media response	Poor mobile experience on website

Our survey has found that 65% of consumers have been frustrated by the lack of answers and 63% have been annoyed by the lack of support out of core business hours.

Almost half of respondents (48%) have been frustrated by a lack of response to online contact forms or online chat facilities and a similar amount (47%) have been frustrated by a lack of search facilities on websites.

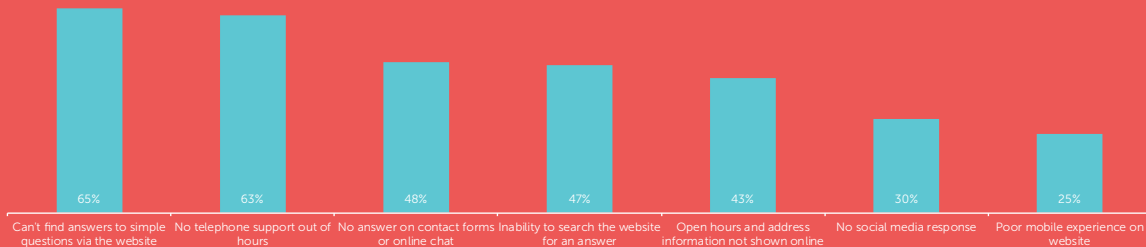Although our survey isn't indicative of individual brand performance it is most definitely an area that needs improving according to consumers.

Chatbots can appear on websites as chat windows - a concept that users are used to. A chatbot will always respond, instantly. The top 5 complaints from consumers about frustrating experiences can be eliminated by a single, well-executed chatbot on a brand website.

Chatbots can be used to answer all but the most complex questions online in natural language that consumers feel comfortable with and and are available 24 hours a day, they're the cost-effective customer service team.

Well executed bots can answer most questions instantly with only the edge cases needed to be passed on to a human. Consumers can chat via their favourite messenger app and so they are unlikely to have a poor mobile experience (25% of respondents have been frustrated in this way).

Speed is key followed by accuracy

Our panel perception is that businesses are failing to respond quickly enough to consumer queries or to provide accurate information through their websites and social media experiences.

Although speed is easily counteracted by a good chatbot, accuracy could well become a problem. Developers need to focus their efforts on providing rich interactive conversational experiences for chatbots to succeed and not become a new avenue of frustration for consumers.

A complete and fail safe strategy would be for conversational user interfaces to fall back to a real human where the capabilities of the chatbot dialogue have been exceeded.

A chatbot can try it's best to answer questions but even those developed with real consumer queries will always find edge cases in consumer needs. In these scenarios the AI could politely inform the user that they can't help and ask if they would like their query to be forwarded on to a real human.

Convenience

The greatest benefit afforded by chatbots over all other avenues when considering consumer query resolution is the convenience that consumers can chat on any channel they feel comfortable with.

Consumers can just as easily engage brands via SMS as they would through online chat.

The 24 hour support also has significant cost savings. If a chatbot can be taught to answer 95% of queries then the human cost of supporting consumers is also vastly reduced.

Did you know that Brent Council has a virtual assistant hologram instead of a human to greet users at reception? The hologram cost £12,000 to create & deploy. The annual salary for receptionist staff is £18,000.

Deploying chatbots to leverage consumer behaviour

Physical engagement with AI

Adding conversational user interfaces to media displays, in-store kiosks and virtual reality apps allows the ultimate experience for consumers giving your customers intelligent interaction with your brand in the physical space. Increase dwell time and sales in retail space, answer consumer queries in areas of high footfall.

ANYWHERE YOUR CONSUMERS NEED INFORMATION, GUIDANCE OR PURCHASE IDEAS; A VIRTUAL ASSISTANT CAN BE THERE TO PROVIDE. WHETHER SPEAKING TO A BOT VIA A MESSENGER APP OR A PHYSICAL INSTALLATION IN A SHOP, AIRPORTS OR CUSTOMER SERVICE DESKS, THE FUNCTIONALITY IS EASILY PROVIDED BY A BOT.

Since the artificial intelligence of chatbots is provided centrally it means that this functionality can be opened up to the physical space away from social media and web chat channels.

Here at Eden we develop a lot of applications for Virtual Reality and games which involve 3D avatars. These 3D avatars can inhabit your public spaces in media display technology. They could also live inside VR headsets in games and rich media for consumers to download at home.

Bots and virtual assistants are available 24/7 and are always ready. They never take a break and are always perfectly on message.

The functionality of the AI can be quickly pivoted to focus on your needs allowing you to adapt your sales or service strategy based on noteworthy news events, sale events or to coincide with press releases at the touch of a button. Imagine being able to notify and train all of your service staff to react to events instantly, what positive effect could that have on your business?

Above: The Tensator Virtual Assistant from Tensator Group delivers concierge-level interactive information and messaging support in physical locations.

2017 is well seeded to be the year that consumer virtual reality devices enter our homes in a very big way. Brands are investing heavily into 360° Video while tech firms release more and more consumer VR headsets such as the Google Daydream, Samsung Gear VR and improvements to the Oculus Rift from Facebook and the HTC Vive.

Microsoft has invested heavily in it's mixed reality headset (Hololens) and Augmented Reality (AR) has seen a tremendous resurgence in popularity in 2016 with the advent of Pokemon Go.

With all of the new consumer devices comes more ways to engage consumers and with the engagement comes higher expectations for rich interactive content. Bots can be the answer for delivering incredible engagement in a timely and relevant manner.
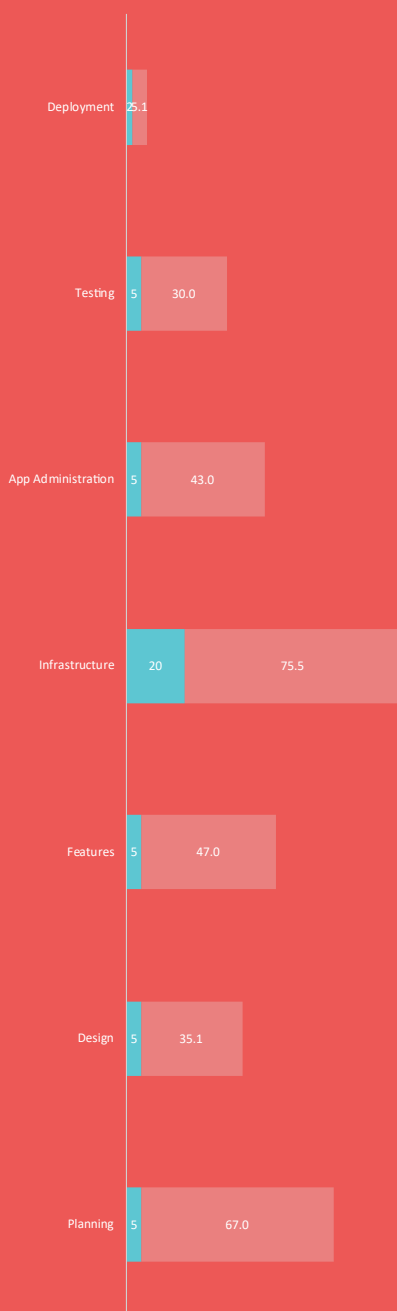
The ability for bots to learn from interactions with consumers means that even as their demand on them grows, bots can always provide a positive and fresh experience. Consumers will never get bored with their engagement with AI because it adapts and changes regularly.

the cost of bots

Saying goodbye to the app

Mobile apps are expensive for brands. Device compatibility, multiple developers for multiple platforms and maintenance costs of iOS & Android platform updates mean that an app is a serious long term investment. What if we could push the same functionality to consumers for 15% of the cost?

The cost of producing apps vs. the cost of chatbots in measured in hours

Stage	Value	Value
Deployment	25.1	
Testing	5	30.0
App Administration	5	43.0
Infrastructure	20	75.5
Features	5	47.0
Design	5	35.1
Planning	5	67.0

ACCORDING TO A 2015 SURVEY BY CLUTCH*, THE AVERAGE COST OF A MOBILE APP DEVELOPMENT IS $171,000 (OR £115,000 AT 2015 EXCHANGE RATES).

There are varying other sites claiming different rates and values but the reason we've referred to the Clutch survey is that it's a survey of app development agencies.

At Eden Agency, we've been developing apps since 2008 and these findings reflect our experiences.

As well as the major expense to develop, deploy, maintain and market mobile apps there's also the very real consumer cost of effort to find and install these apps which can also act as a deterrent to engagement.

What if we told you we could provide the functionality of your favourite app, with artificial intelligence that engages consumers in a more powerful way than mobile apps?

Now what if we told you it would be accessible in more places, receive higher engagement levels and that you could do all of that at 15% of the development cost of a mobile app?

That's the reality of mobile apps vs. chatbots. Chatbots are more accessible, more easily adapted and can be developed in well under half the time of a mobile app. To prove this we've broken down the process of developing a mobile app on iOS & Android and compared it to the same process for developing a chatbot released on your website, Facebook Messenger, Skype, Kik and even as an Amazon Alexa skill.
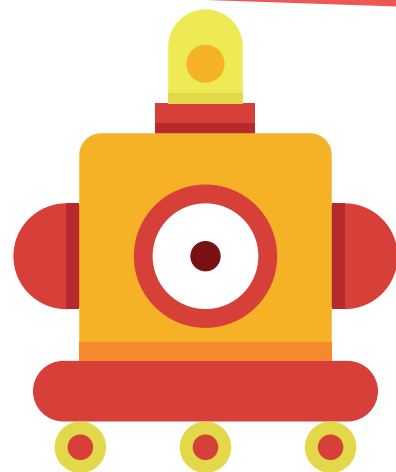
We've done this by taking our own experiences in creating apps and chatbots and comparing the effort involved by professionals at each stage of development which remain the same phases for chatbot implementation (planning, designing, feature implementation, infrastructure development, administration, testing & deployment). The comparison is based on the same level of functionality (7 features).

Planning (92% cheaper)

The research and discovery stage of a digital product is the most important. This part of the process involves stakeholder & market research, feature exploration and the documentation of agreed scope.

Although market research still needs to be done when developing chatbots,

SAYING GOODBYE TO THE APP

some might say even more so due to their newness, most bot frameworks provide very clear parameters for feature implementation and so the scope definition is made clear and concise.

Because the scope of works is far smaller for a bot the planning phase can be concisely focused on the features to implement and not the mechanism for implementation. There's no multiple platforms to consider, no deployment plans and no ad buying strategy to compete for app store positions.

Screen sizes, device market share and backwards compatibility for old mobile platform versions doesn't need to be considered either because the channels for chatbots, such as Facebook & Skype all have their own development road maps and handle the user experience and UI for you.

Planning a chatbot is all about defining features and thinking about how best to speak to your consumers. In fact, a chatbot can be built and deployed easily as part of a market research sprint to gauge user response for other digital products because they are so cost effective.

Design (86% cheaper)

Designing mobile apps is a very intensive process involving wire framing, visual design, UX design and prototyping.

The visual elements of bots involve images delivered by the channels which your bot runs on and so this is handled by the channel owner. When developing bots you let the developers of the Facebook Messenger app worry about the look and performance on the infinite number of devices it runs on and the only design you need to consider are the visual assets delivered as content.

All visual responsibility for the delivery is taken away from you and a small element of UX design and content remain.

The bot itself can also act as the prototype with users given access through their own preferred chat mechanism. You can see all of the conversations that your test users have had with your bot and make informed decisions about what content and features to implement.

Features (89% cheaper)

True savings on feature implementation can be made because of the well defined framework of a chat bot.

You speak to a chat bot using another channel and when that channel is responsible for any native functionality you might need to implement on the device.

An example of this is the provision of a consumers geographic location. As a mobile app developer you need to provide your own implementation this feature by utilising device map APIs (such as Apple Maps or Google Maps) and a host of caveats such as backwards compatibility, screen sizes and visual notifications.

Bot developers enjoy simple access to the same features by passing that responsibility on to the platform that the consumer has chose to communicate using.

If you have tried our PretzelBot by scanning the code earlier in this white paper on your Facebook Messenger app, you might have seen how we can determine your closest store by letting Facebook tell us where you are. This feature was enabled in just under an hour. The same feature on the Auntie Anne's iOS and Android took half a day per platform.

Device synchronisation of data across multiple devices is also a feature which we do not have to think about. Since the channel defines your identification such as allowing us to see who you are via Slack, all of your conversations can be easily stored and retrieved centrally. There are no device or local storage considerations, chatbots are device agnostic and speaking to them is an entirely online experience.

Since speaking to chatbots is an entirely online experience, all integrations with third party APIs for features such as payments is done via a single cloud service and not needed to be implemented on each device.

Infrastructure (73% saving)

The infrastructure requirements of a chatbot are also greatly reduced to those of an app. All interactions are done directly through the bots API and so third party integrations are done centrally.

Data storage and access to enterprise information is still a development requirement but again one which is done once on the bot and not for each mobile device platform (iOS, Android & Windows).

Authentication requirements are usually defined by the channel the chosen bot framework handles scalability. We often choose to develop our chatbots on top of the Microsoft Bot Framework which automatically scales up the number of compute instances it requires when lots of people are speaking to the bot and then scales back down again when demand recedes to save costs.

Encryption and security is taken care of by the chosen bot framework and the channel owners.

App administration (88% cheaper)

When deploying an app there is a multitude of things that can go wrong. Different camera capabilities might mean the video app you deployed doesn't work on certain Android devices or you might find that the new iPhone processor runs a process too quickly and a poorly written third party library doesn't properly handle the quick response of this new processor.

To find, diagnose and fix all of these issues the mobile app developer usually solicits performance management and analytic tools such as Google-owned Fabric which shows crash reports and helps developers find problems in code. This administrative task is non-existent for chatbots.

Content management systems may or may not be required for apps and bots features. A bot and app with the same features would both have content management systems however a bot would not need any specific content for specific devices. Also, content management such as language understanding capabilities and translations are handled my the cognitive services of the chosen bot framework.

Testing (83% cheaper)

Testing requirements of bots are significantly reduced. Device compatibility is not an issue when using bots. Testing of a chatbot consists solely of testing features by chatting to it and testing can be done completely without considering devices. Testing the bot on an Android phone is exactly the same as testing it in a web browser.

Deployment (60% cheaper)

Deployment of mobile apps consists of building, packaging and submitting apps to app stores as well as monitoring the submission process and producing device specific artwork to market your app on the app store. The same screen needs to be shown across tablets, phones and for various screen sizes in order for your app to appear and be found by your consumers.

Subsequent features need to go through a similar path with app store review processes taking up to two weeks even for minor releases.

Chat bots are deployed once to a single location and those features made instantly available to all of the channels consuming that bot. If you develop a new

feature a single click deploys that feature instantly for consumers to enjoy. They won't even notice any downtime.

When you deploy a bot, all you're doing is updating the intelligence in one single location. For example a Facebook powered bot is simply a place where you connect and interact with your users. Build just one bot, and your experience is available on all platforms where Messenger exists, including iOS, Android, and web. It also removes the friction of your users having to download one more app, on top of all the apps they already have and may not use, given Messenger is now used by 900 million people every month.
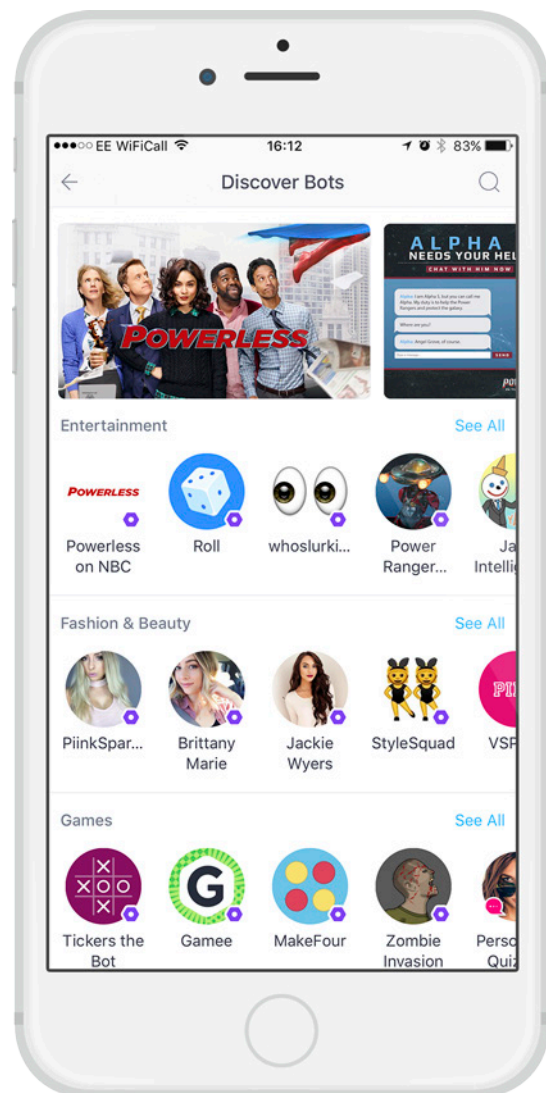
Most messenger platforms have bot discover tools such as Kik's bot store pictured above.

Deploying chatbots to leverage consumer behaviour

Saying hello to the skill

Virtual assistant platforms such as Siri, Google Assistant, Cortana & Alexa are being opened up to developers and some are already an available avenue for brands to add content and features. We were interested to see how many of our panel use these virtual assistants and of those using Alexa, who had enabled skills.

Virtual assistants used by our panel

42%	32%	25%	14%	11%
Siri via an Apple device	Google Assistant (Google Now) via an Android device	Cortana via a Microsoft device	Any other virtual assistant	Alexa via Amazon Echo or Echo Dot
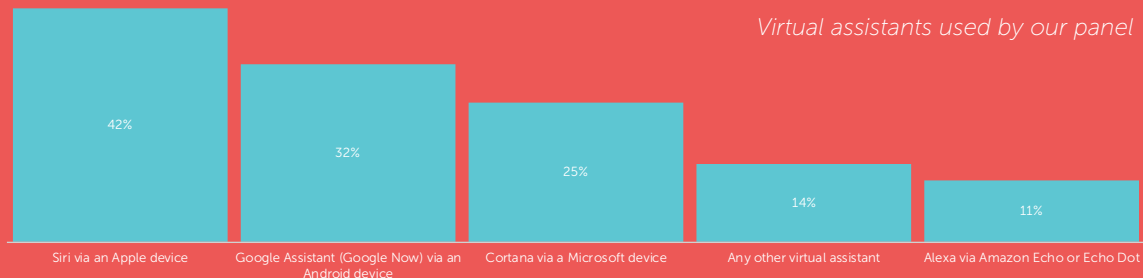
Skills used by Amazon Echo owners

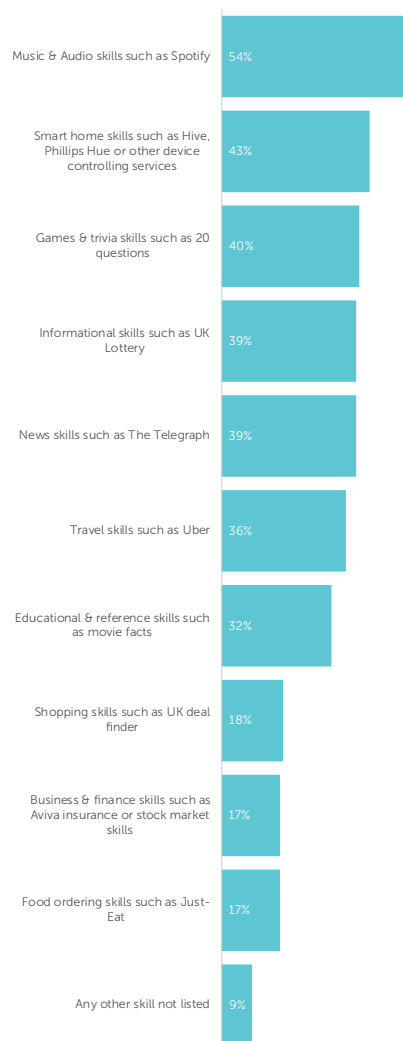| Skill	%
Music & Audio skills such as Spotify	54%
Smart home skills such as Hive, Phillips Hue or other device controlling services	43%
Games & trivia skills such as 20 questions	40%
Informational skills such as UK Lottery	39%
News skills such as The Telegraph	39%
Travel skills such as Uber	36%
Educational & reference skills such as movie facts	32%
Shopping skills such as UK deal finder	18%
Business & finance skills such as Aviva insurance or stock market skills	17%
Food ordering skills such as Just-Eat	17%
Any other skill not listed	9%

Opportunities

As we discussed earlier in this white paper, while Siri & Google Assistant have allowed users to become familiar with and even depend on virtual assistants, Amazon Echo is the first device to really focus on paving the way for developers to get brand content onto these devices.

We can already see from our results that 11% of our panel have used Amazon Echo. This is incredible given that it has only been commercially available to our UK respondents for three months at the time of writing this white paper - February 2017.

What's more impressive is that 100% of our Amazon Echo owners have knowingly enabled and used 3rd party skills through Alexa.

As other technology providers scramble to match Amazon's gold standard for brand-enabled content on their virtual assistants, the developer and brand community have been given many new avenues for getting content and services in front of consumers.

Since all of the virtual assistants rely on a similar API pattern to that of chatbots we can safely assume

that a single chatbot can provide functionality to mobile users of Siri & Google Assistant, Amazon Echo customers and also through all of messenger apps we've already discussed.

It's never been a better (or more cost effective) time to engage users in ways more direct and warm than apps & websites.

With a single AI powered platform, brands will soon be able to deliver content to:
- 900 million Facebook messenger users
- 660 million Skype users
- 300 million Kik users
- 3 million Slack users
- Billions of iOS & Android users
- Millions of growing Amazon Echo owners

With some adaptation, AI content can also be delivered via the same platform to Twitter users.

Thinking about brand content and functionality as skills rather than apps is a revolutionary change in the way brands interact with their customers.

implementation strategy

Defining Your Bots Features

Your chatbot can be all encompassing or very limited in it's scope. It can be a fun & short-lived project marketing campaign or it can be a long life product with a long roadmap of development.

Ultimately conversational artificial intelligence is designed to replicate and replace human labour and so it's up to you to decide where your efforts are best spent.

SIMPLY BUILDING AND LAUNCHING A CHATBOT DOESN'T MEAN IT WILL BE SUCCESSFUL.

Conversational UI is hot property at the moment and the best bots are easily seeded and syndicated in tech press but the marketplace will become very crowded very quickly.

At the time of writing this, there are already 30,000+ chatbots enabled On Facebook messenger. The secret to long-term success will be execution.

The first port of call is to define your bots purpose. Where will your brand gain the most commercially?

Yes you can have a bot that gives you a recipe based on an emoji or one which gives you a random fact about this day in the past and people will love them. If you want to build a bot of frivolity then do it. We encourage it. Bring AI into your existing marketing efforts and integrate bots into intelligent conversion strategies.

The only hard and fast rules of developing a chatbot is that it should promote your brand in a positive manner. The capability of AI is endless and low-cost, so go wild.

The rest of this section has more general advice for bots which might have multiple features or a longer term roadmap of development.

Start with the basics

Our research has shown that consumers largest bugbears are lack of information, poor contact response times and lack of availability of real people outside of office hours.

For all but the most frivolous marketing bots, information should form the foundation of your bot. It should be your restaurant menu and store locations, your product catalogue, your department contact information or your frequently asked questions. Any information that you feel your consumers would regularly ask a real representative.

Look at your existing data and ask yourself 'what do people want to know the most?'. Look at your Google Analytics statistics, mobile app usage analytics and help desk call logs. What information do people most engage with in your existing channels? When you know that, you know what the foundation of your AI is.

Add personality

Choose a personality for your bot that suits your brand. If your brand is a cheeky retailer then let your bot be cheeky too. Remember that your chatbot is available 24/7 and is an extension of the real people in your business and its personality should reflect that.

Don't be afraid to name your bot either. Some of the greatest virtual assistants today have names (Siri, Cortana, Alexa).

....

Who remembers the subservient chicken? This extraordinary 2001 advertising campaign from Burger King was an early chatbot where you tried your luck by typing commands and a man dressed as a giant chicken acted out your request if you got one of the commands correct in short videos.

....

Well named and well executed bots with great personality will be easily remembered while poorly performing named bots can be quietly forgotten. A poor performing bot that carries your brand name will forever be tightly associated with you.

Ensure that your content management system is configured so that it allows for multiple

synonymous ways of portraying the same information to keep repeat consumer interactions fresh. For example to respond to a gesture of gratitude your bot could say "I'm just doing my job" or "Don't mention it" or even a more simple "You're welcome". Keeping the dialogue different stops the interactions from feeling stale and, well, robotic.

We found that 55% of our panel would rather speak to a human than a bot while 14% actually said that they would find it unnerving to speak to a bot at all. Keeping responses natural and varied makes consumers feel more at ease and gives the illusion that there could be a real person behind the facade.

Be honest

Don't act completely like a human or try to hide the fact that you're a bot. When the consumer reaches the boundaries of your bots capability then admit it.

Humans are arrogant. We're used to being at the pinnacle of sentience and knowing that a machine isn't quite ready to replace us is mildly comforting to most of us. Exploring the edges of AI can be fun too. Like your very own Turin test.

If your bot has understood your consumers intent but doesn't have an answer then let them know. When your bot doesn't know what the user is asking it then your bot should help as best it can and fall back to making suggestions as to what it's parameters and features actually are.

Some of the best bots we've seen lay out their parameters at the very start of the conversation by suggesting the framework of features that the bot has. This can be in the form of cards as we discussed earlier in this white paper.

By defining your capabilities early in the conversation you are showing the user how useful your bot is and letting the consumer explore. Never fail to fulfil expectations that your bot has created in the consumer. If your bot can't answer any question then don't profess to be able to.

Add the meat

Your chatbot doesn't need a killer feature if it's a general enquiry or customer service bot . While chatbots are new and novel even the most rudimentary features will be seen as exciting. Speaking to a computer in natural language and have it respond in kind is, for some, the stuff of Hollywood.
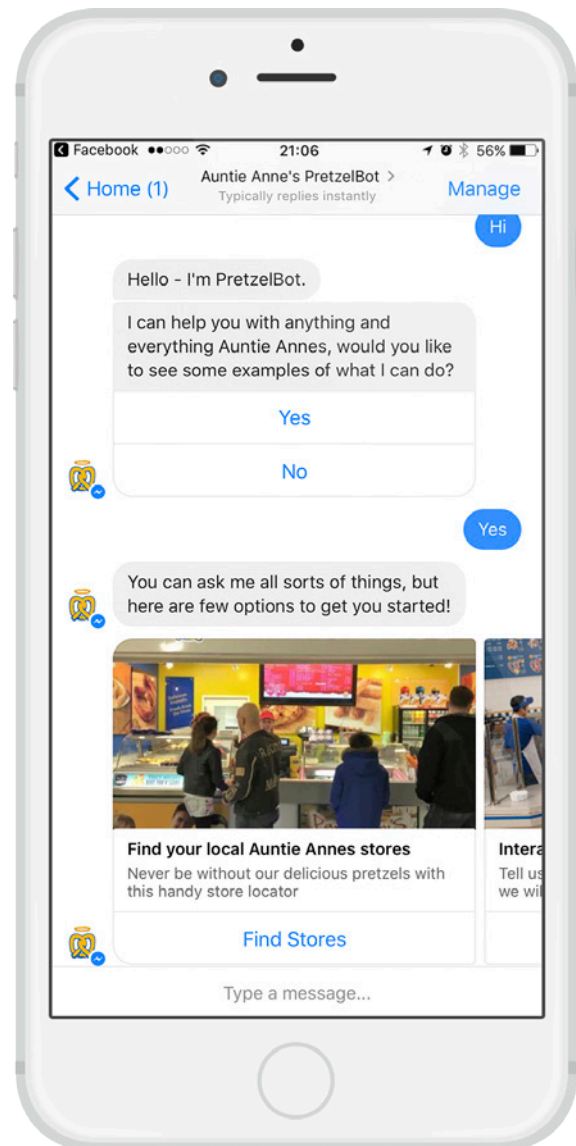
The Auntie Anne's PretzelBot starts conversations on the right footing by telling you the extent of it's capabilities in a conversational manner.

Novelty however, will be short lived as people become accustomed to speaking to their favourite brands through conversational user interfaces.

If your chatbot is designed as a product in it's own right or as a marketing campaign then you might want to think about how it can be differentiated from other products.

If your business model is unique or you possess content that commands a high readership then your chatbot unique feature can be simply access to that feature through convenient channels. Asking your Amazon Echo to give you an interesting Guinness World Record fact, for example, is a great use of existing content where convenience is the USP.

A great differentiator might be a personal style guide from a high street clothes retailer. It could be a bot that finds you the look donned by your favourite celebrity at the latest award ceremony or one which uses your photo to get the perfect makeup match.

Utilise the channel

Remember that your chatbot can be deployed to lots of different channels, as we've already discussed. Each channel might have unique features that make the experience on that particular channel a little more enjoyable to your consumer.

Your Conversational UI might respond to consumers interacting via voice on Alexa differently to those corresponding using a keyboard on the website chat window.

Amazon Echo customers expect to hear their response and the audio features of the device should be utilised. A great example of this is the Jamie Oliver skill on Alexa. After the device has emailed you a recipe you get an actual voice clip played back from Jamie Oliver himself, a simple interaction but one which utilises the audio capability of the device.

Users chatting on Facebook Messenger will soon be able to make payments directly in Messenger itself (currently in beta). Your bot can respond differently to these users than it does to those communicating via chat window on your website. The website users can be taken to a traditional checkout page while the Facebook Messenger users never need to leave their app, they can pay within the app.

Slack is great for speaking to multiple users simultaneously and the AI is more likely to be used for business requirements. A chatbot aimed at Slack users could be used to do the grunt work of organising meetings that work with all attendees schedules. This could be done by simply inviting the bot into your conversation.

Utilising the channel capabilities and demographic allows you to slightly branch the functionality and logic of your bot to make the most of the channel.

Keep it quick

Speed and convenience are the reasons that people are using your chatbot. They may have discovered it on your social media pages or through the chat interface of your website but the reason they are using it is because it's the quickest and easiest form of communication with your brand.

The goal of a chatbot is for it to deliver relevant content quicker than your website search and your app. Finding information should be as quick and easy as speaking to your best employee.

Keep it relevant

Chatbots have the inherent ability to learn on the job. Ensure that your content can pivot quickly to public events, press releases and new product launches.

By ensuring your bot content remains relevant and adapts to the environment whilst utilising push capabilities that you are ensuring that AI is bridging the gap between real human availability and consumer needs.

Pre-emptive communication is even better than real human interaction. If a consumers purchasing behaviour highlights a penchant for your premium chicken sandwich, start a new conversation with a voucher for one via Facebook Messenger.

The power of bots is that there's no long-winded deployment path for changing and updating functionality. There's no app review process and testing cycles are massively reduced from that of websites and apps. Use this responsive capability to your advantage.

Learn from your mistakes

Natural language understanding is a powerful thing and regularly looking at your bot-consumer conversations gives great insight into your real consumer requirements. Users plan your roadmap for you in plain English (or Spanish or French etc.), listen to them.

The best bot frameworks have cognitive training capabilities that allow coaching of the natural language interpretation element of your bot without having to redeploy code. They let you tell your bot that it was right to interpret "I need something spicy" as an intent to view the hot items on your menu so that it gets even better at understanding even the most slang laden dialogue.

From time to time your natural language interpreting capability will come across a new way of requesting something. A colloquialism might throw a result or the user might be expecting the bot to do something it was never designed for.

The more you train your bot the more accurate it becomes in it's assertions. We understand it all sounds very complex but it really is as simple as logging into a content management system once a week and confirming your bot is making the correct assumptions.

Deploying chatbots to leverage consumer behaviour

Make it discoverable

Once your bot is available to download, tell the world. After all, you've just entered an innovative elite of brands that are using artificial intelligence to speak to your customers.

There are already a few chatbot directories appearing online and currently, while chatbots are exciting and new, press releases and seeding stories in tech press is a good way to get noticed.

It's also a good idea to plan social sharing into the bot. Let the bot suggest the consumer send a tweet about the interaction or include some social sharing mechanism in the dialogue.

Avoid pitfalls

We asked our panel about what would prevent them from using chatbots. 55% of our respondents said they would prefer to speak to a real person if one was available.

Chatbots need to fulfil the needs of consumers as best they can. If a consumer has a billing enquiry and your chatbot has billing data available to it then it should respond appropriately and timely. Make sure you're covering the very basic expectations that they would have from a real person.
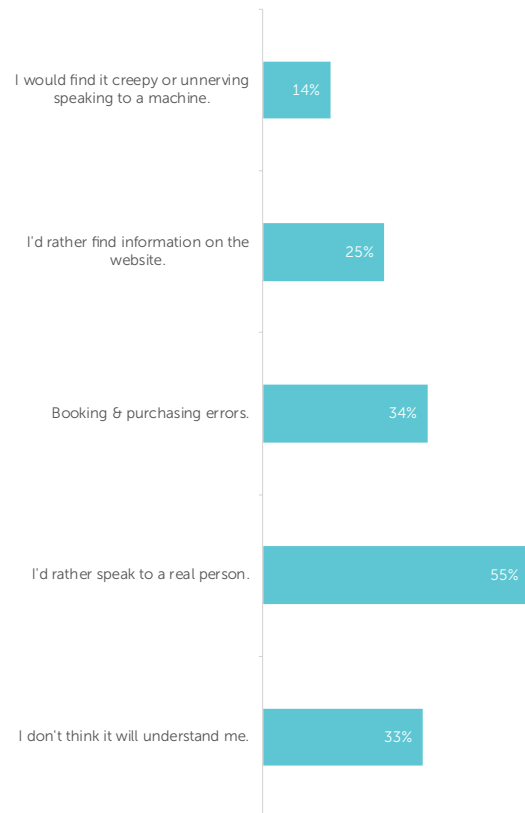
34% of our respondents had concerns about a chatbots capability to understand a booking or a purchase. We believe that this is because they are unfamiliar with their capability and this fear will be alleviated as consumers get used to interacting with them but any failings by brands in delivering these functions will be damaging to the consumers interpretations of AI and the brand.

33% of consumers thought that an AI bot wouldn't understand their questions. We again believe this to be down to lack of familiarity or poor experiences with virtual assistants. Language understanding capabilities are actually now very powerful and can be easily developed.

A proportionately higher volume of Siri users had concerns about chatbot understanding capabilities than Google Assistant users. We'll leave you to draw your own conclusions from that.

Thinking about your demographic might also be a good consideration. 23% of baby-boomers would find speaking to chatbots creepy while only 9% of millennials found the experience unnerving. Baby-boomers were also far more eager to speak to real humans (71%).

All that said, there are very few barriers to getting your consumers to speak to chatbots - as long as they are well executed then they are very likely to succeed.

I would find it creepy or unnerving speaking to a machine.	14%
I'd rather find information on the website.	25%
Booking & purchasing errors.	34%
I'd rather speak to a real person.	55%
I don't think it will understand me.	33%

We asked our panel what (if anything) would prevent them from using a chatbot.

Controlled or Organic Conversation?

One of the key decisions to be made when building your bot is whether or not it should understand natural language at all.

SOME BOTS TAKEN ON AN ENTIRELY FLOW-BASED MODEL WHERE THE USER ONLY RESPONDS WITH BUTTON TAPS AND ONLY TYPES RESPONSES WHEN PROMPTED FOR SPECIFIC ANSWERS.

Controlled flow apps such as these require no natural language interpretation capability and can be built and deployed quickly. They're the perfect way to perform functions such as surveys or to guide users through technical or fault finding problems.

Controlled flow applications can also be used for rapid prototyping and gauging consumer reactions to your design decisions.

The Johnnie Walker Facebook Messenger chatbot uses an entirely flow-based system to guide consumers through functions including cocktail recipes, store locators and whisky wisdom. The only text input required in any of these interactions is to enter your zip code to locate your nearest distributor.

The Jamie Oliver Alexa skill we mentioned earlier is another example of a controlled flow conversational user interface. You make choices about key ingredients before recipes are suggested to you and you answer with 'yes' and 'no' responses. We'd call this skill semi-structured because you can also jump into the journey by using key words such as "I'd like a recipe with fish".

Although controlled flow apps are definitely cheaper to produce and quicker to distribute, they make it very obvious that the consumer is speaking to a robot. The dialogue even feels quite robotic.

Controlled flow apps also require more maintenance over time since new features will always require changes to the code base.

By employing natural language into the application and using a combination of semi-structured flows and completely conversational interactions, you allow for a greater range of functionality and very quick responses to consumer needs.

Bots which concentrate more on organic conversation are also more responsive to change since they have been developed with intent understanding as their
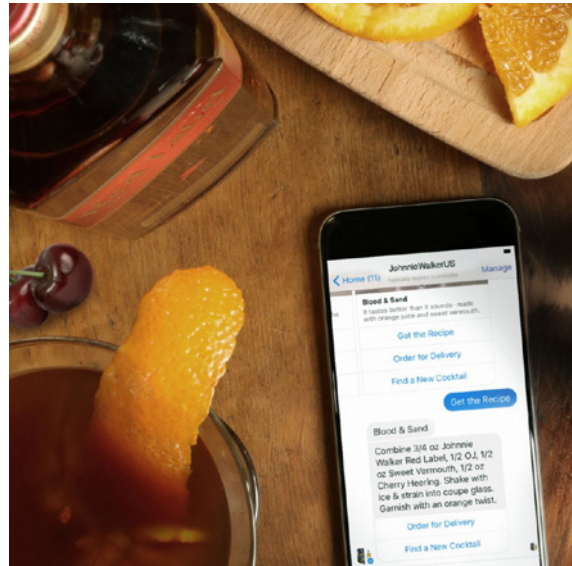
The Johnnie Walker Facebook Messenger chatbot demonstrates how to effectively drive users through content with a structured menu-like system.

core functionality (don't worry, there's more about this later in the white paper). Once the bot understands the intent and that intent is within it's capabilities of response then the bot gives the user an answer.

New intents require development and incur development costs but new routes into existing intents have no additional cost. It's just a case of training using an online portal.

The more users who interact with organic bots the more intelligent they become. Conversations are more human in their nature and the flow of conversation can jump between intents far more easily when the language is interpreted.

Natural language understanding bots are more exciting for people to communicate with as people want to explore their boundaries.

Deploying chatbots to leverage consumer behaviour

Learning On The Job

When choosing to deploy a chatbot which relies heavily on natural language understanding then it's important to understand three key concepts: Intents, Entities & Utterances.

UNDERSTANDING INTENTS, ENTITIES AND UTTERANCES IS A KEY COMPONENT TO UNDERSTANDING HOW BOTS WORK AND CAN HELP YOU CHOOSE A STRATEGY FOR DEPLOYING YOUR CHATBOT.

An utterance is the sentence that the consumer uses to speak with your bot either via their voice or keyboard input.

The intent is the action that the chatbot deems that the user wanted to perform with his or her sentence.

Entities are contextual information that the user provided within the sentence that help add meta data to the intent.

This sounds complicated until we look at a conversation from a fantastic organic travel chatbot called Hipmunk. Look at the conversation we had with Hipmunk below:

> *I want to go to **Florida** from **Manchester** for **two weeks** on **30th May**.*

> *Looks like you're planning a getaway from Manchester, United Kingdom for 13 nights between May 30 and June 29. I'll hit you back with some great recommendations.*

The utterance in this instance is the entire sentence and the users intent in the statement is to **get flights** to Florida from Manchester with some specific dates.

The entities in this scenario are highlighted in bold: **Florida** (the destination), **Manchester** (the origin), **two weeks** (the duration) and **30th May** (the departure date). From this utterance, Hipmunks natural language interpretation feature respond immediately with a completely accurate interpretation of our needs.

The capabilities and completely organic flow of natural language understanding make for a very powerful user experience and one which removes any fear of bots misunderstanding the user interpretations.

Referring back to our consumer survey results, the two biggest fears were that a bot wouldn't understand the user and that they would get bookings or purchases wrong. The execution of this particular bot would very quickly remove both of those fears. Let's look at another example:

> *I need **flights** and **hotel** for a trip to **the big apple***

> *I'm digging up hotels for New York City, NY for May 30-May 31. I'm also looking for up one-way flights from Manchester, United Kingdom to New York City, NY on May 30.*
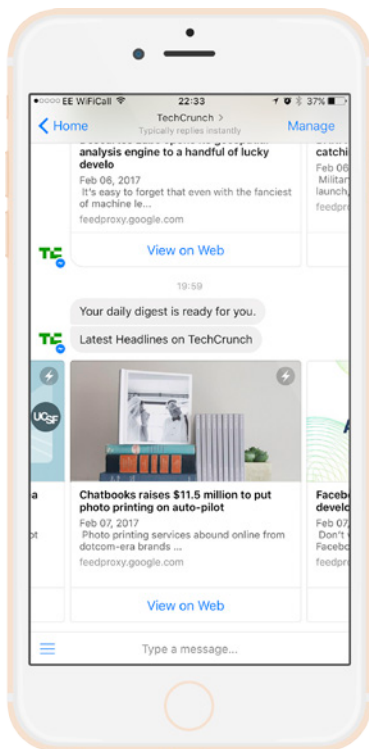
As you can see, the bot has correctly interpreted my requirements even using the nickname for NYC. Since my intent differed slightly this time in that I wanted flights and hotel rather than just flights it has adjusted it's behaviour and since I didn't provide values for the entities for departure dates, holiday duration or origin it has reused the values from earlier in our conversation.

This bot truly demonstrates the power of chatbots and conversational user interfaces. The bot can interpret complex intents very quickly and responds in a rich and natural manner.

The so-called paradox of choice can also mean that consumers faced with too many options find it harder to decide on what to do and helping focus search results is one of the perceived benefits that bots can bring to the table.

Start a Conversation - Keeping Dialogue Open

Once a user has started to speak to your chatbot they have opened a communication channel which you can utilise later for any means that might suit your brand or consumer.

ONE OF THE MORE POWERFUL FEATURES OF CHATBOTS IS THE CAPABILITY TO UTILISE THE CHANNEL AFTER THE CONVERSATION HAS ENDED. ONCE A CONSUMER HAS ENGAGED WITH YOUR BRAND ON ANY CHAT CHANNEL YOU HAVE THE CAPABILITY TO COMMUNICATE ON THAT CHANNEL IN THE FUTURE.

The context and capability of this open dialogue feature is endless. If your primary business concern is pushing content and information to users then this is a fantastic mechanism to do exactly that.

TechCrunch is an excellent example of a brand that pushes relevant content to consumers in their favourite messaging app. It sends you a daily digest of top stories from TechCrunch and lets you manage your 'subscriptions' to this content by chatting to the bot.

TechCrunch also is a great example of utilising the channel capabilities, all of the articles that are presented via the Facebook Messenger app are Facebook Instant Articles. These articles open directly within the app and are formatted in a way that leverages the same technology used to display photos and videos quickly in the Facebook app. TechCrunch then share a portion of the ad-revenue for adverts placed within the article by the Facebook platform - an example of utilising the chatbot as a product in it's own right.

TechCrunch sends a daily digest of it's latest headlines daily on Facebook Messenger

If your brand is retail based then you can send vouchers to your consumers, your latest stock or hottest offers. Any content that is relevant to your consumer, a chatbot is a great and personal way to speak to convey it.

If your brand operates under a service model then there's no reason your chatbot users can't log into their account using the chat app. Most platforms support 3rd-party authentication directly in the dialogue and would allow you to send up to date account information via chat apps or even through Amazon echo. Telling your consumers that their bill is ready or they have credit is a powerful possibility. Allowing consumers to track their orders by speaking to their Amazon Echo is also a very simple but powerful feature.

Twitter is a unique possibility to open dialogue using chatbots for consumers that haven't even interacted with your brand. If you specialise in travel then a chatbot could utilise the Twitter search API to look for tweets containing the guard emoji and certain keywords and then start a conversation advertising a trip to London with the sender.

How about searching gift emojis to market brands like Not On The High Street or baby emojis to advertise baby products by Johnson? Opening dialogue is a surprisingly pleasant communication for consumers.

Using Conversational UI To Access New Markets

For some brands creating content is hard. Engaging consumers in ways that appeal to consumers on a personal level isn't easy when you're an energy or mobile service provider. Chatbots can be used to leverage access to markets in ways that are appealing.

LET'S FACE IT, SOME PRODUCTS AND SERVICES ARE JUST NOT THAT SEXY. THAT'S WHY BANKING, ENERGY, INVESTMENT AND INTERNET SERVICE PROVIDERS FLOCK TO SPORTS SPONSORSHIP AND OTHER ENTERTAINMENT PARTNERSHIPS AS MEANS TO PUSH THEIR BRANDS IN FRONT OF MASS CONSUMERS.

Chatbots are a way of accessing new clients. There are 900 million active Facebook Messenger users and with a little bit of ingenuity it's easy to create campaigns and features via chatbots that capture the imagination of some of those users.

Home assistants like Alexa also create unique opportunities for brands to get their services into the home. We've put together a few tips to utilise chatbots to access new markets.

Launching new products aimed at the home

Any new consumer product for the home should be considering AI as a primary form of interface but we believe that AI should also spawn new forms of product.

Products like Hive and Phillips Hue are already available to connect to Amazon Alexa so you can control your heating and lighting using voice commands.

You don't even need to be a digital products brand to think about this new form of access, if you're an ISP why not launch a product which allows you to turn down your speeds for cost savings or set content restrictions for your children?

Leverage convenience

Conversational UI simplifies experiences and access. K2 bank is an entirely conversational banking system that lets you make money transfers by telling the bot an amount and the persons nam and check your recent transactions and balance.

Brands that are forward thinking will take the lions share of new customers by providing products that are a joy to use. Providing a simple way to access a rarely used feature can provide a truly joyful experience.

If you've ever lost a credit card then you'll know the process to cancel it is long winded and difficult to find the right numbers to call or help pages. Waiting for a free agent with on-hold music is one of the worst customer experiences you can have. Now imagine just saying "Cancel my credit card" to your banking bot.

Leverage innovation

If you're a building society then your interest is getting more deposits into peoples savings accounts. What if you built a chatbot that saved people money by finding the cheapest version of a product?

Better still, create a money saving bot for Facebook Messenger then leverage the channels capabilities to use the camera on your smartphone to capture product bar-codes while people shop to find the cheapest price on consumables?

No matter what your core product, the capability of AI gives new means to be innovative and produce content that appeals to mass markets.

Go against the grain

Be cheeky with your bots. Mattress startup firm Casper have introduced the Insomnobot3000, a bot which you speak to via SMS. The chatbot distracts customers from the topics of conversation that is keeping them awake like work, stress and money and instead talks about TV shows and weekend plans.

# Adding Chatbots & Virtual Assistants To Your Existing Content

AI doesn't need to replace your website or apps but it can certainly compliment your existing content dramatically. Let's look at some ways of effectively combining chatbots with other marketing activity.

SWAP YOUR WEBSITE SEARCH FACILITY WITH A CHATBOT. IT'S A SIMPLE REPLACEMENT AND EASY REPLACEMENT OF AN OLD AND TIRED WEBSITE FEATURE WITH ONE WHICH ENGAGES CUSTOMERS IN A MORE CAPTIVATING WAY THAN PRESENTING WEB PAGE RESULTS.

There are many more incredible ways of mixing chatbots and virtual assistants into your marketing activity. We've hand-picked a few to get you thinking about their versatility.

Loyalty interactions

We've already spoken about the ability for your users to authenticate with your services directly inside the chatbot dialogue. Using consumer account information with AI and messaging apps provides many opportunities to engage your customers.
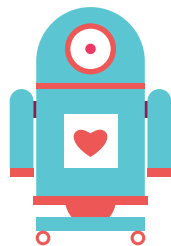
Imagine walking into your favourite coffee shop and buying a coffee and using your loyalty card then receiving a message on the Facebook Messenger app from the coffee shop chain thanking you for your custom and presenting you with a voucher for your next visit?

Bots are also a very simple way to conduct customer service surveys after interactions which are far less intrusive than automated calls or text messages.

Gamification

Add some intrigue and crowd interactivity to your next marketing campaign by adding a clue based treasure hunt. Give your consumers a daily clue as to the location of a prize and generate a buzz.
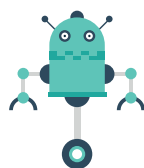
Users can interact via their favourite messaging app and draw other users into the campaign by asking for help.

Chatbots are rapid to develop and can pivot quickly based on changing demands. Gamification can be the bots sole purpose or it could be added as a feature or intent to an existing bot.

Account access

Adding the ability to get up to date account information from your Amazon Echo or Google Home device is a great consumer message. Hassle free, accurate & up to date information about your services is a perfect feature for entertainment or businesses that operate a subscription billing model . It also works well for any kind of delivery service.
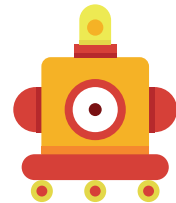
If you're a monthly box subscription such as Graze, HelloFresh or Lootcrate then your consumers could ask "Alexa, ask Lootcrate what's in the box this month?" Or "Alexa, ask Graze when my box will be delivered".

Supporting activities

There are infinite opportunities to engage your consumers whilst already interacting with your brand. Travel and leisure chatbots can act as room service while you're staying at a hotel or as local information guides during your package holiday. Need a drink sending to the room? Just ask your hotel concierge bot.

A product recommendation bot can help focus customers while they browse your website or offer technical help to those who are lingering on engineering product pages. There won't ever be a complete substitute for human engagement but if you've ever wanted to be physically present with your

Deploying chatbots to leverage consumer behaviour

consumer throughout their journey with your product or service then a chatbot is the next best thing.

Predictive dialogue

If you understand a particular consumer need then a pre-emptive message to them in changing circumstances will resonate deeply. For example, as an estate agent who knows your customer is looking for 2 bedroomed properties within a certain price range then notify them as soon as a new property becomes available.

Conversational social AI can improve your sales pipeline whilst making your consumer feel valued.

Enabling your team

There's no reason a bot needs to be aimed at your consumers. The growth of Slack has been insane and as more and more teams move over to collaborative chat services, the opportunity to automate your team work-flows has never been greater.

Automating internal functions like holiday planning, meeting and room bookings or giving detailed answers to questions about the employee handbook can be done by your bot via Slack. With more new chat products opening up aimed at working teams such as Yammer, Microsoft Teams, HipChat and Facebook workplace we're seeing less and less reliance on e-mail products and more reliance on instant response chat.

Bots live in these spaces very well. Most bot frameworks include Slack as a standard channel requiring no additional development to enable.

Spend more time creating

The job of social media marketers has never been more demanding. They are now the masters of customer support, product recommendation, complaint resolution and also maintaining a steady stream of story posts online.

Automating tasks to free up creators gives them the opportunity to create more substantial content than monitoring responses.

Bots can also be used to monitor responses to content and inform ad-buying algorithms to increase spending on the best performing posts.

For marketers, a chatbot is the perfect way to keep existing engagement levels high whilst keeping the focus on driving new engagement.

Personalised offering

As more and more digital assistants allow developers to gain access to consumer lives the opportunity for personalised offerings has never been greater.

Fitness brands can give personalised workout routines based on your fitness levels, consumer goods brands can give you recommendations based on your purchase history and device manufacturers have more access to your home than ever before.

Digital media integration

Existing apps, websites and social media pages can easily be a host for your new AI. Adding your chatbot to your company website can be as simple as dropping in a script in much the same way you would Google Analytics while social media channels offer uniform ways of including bots into them.

At the core of any AI is an API (Application Programming Interface) which can be easily adopted into your apps to add personalisation and chat facilities and can make your app less structured and more organic in function.

CRM enrichment

All chatbot interaction is good valuable interaction. It means your customers are engaging with your services and content and those interactions should be monitored and used to encourage more interaction.

If users are searching for particular products using your chatbot then it makes sense that your ad targeting for that consumer should be updated to weight ads for that product.

Customer support and service issues, reported through your AI, should also update your CRM.

The richness of consumer data gathered through AI is greater than ever before and your customer service never sleeps. Making important decisions based on these interactions is invaluable.

let's get started

Are you ready to get started?

We've reached the end of our foray into chatbots. It's time to summarise our learnings and get started building bots.

2017 will be the year of the bot and brands that leverage AI properly will be the first to access the 3 billion users worldwide who are already using messaging apps. We hope that we've armed you with enough information to make the leap and bring conversational user interfaces and social AI into your marketing campaigns, products and services.
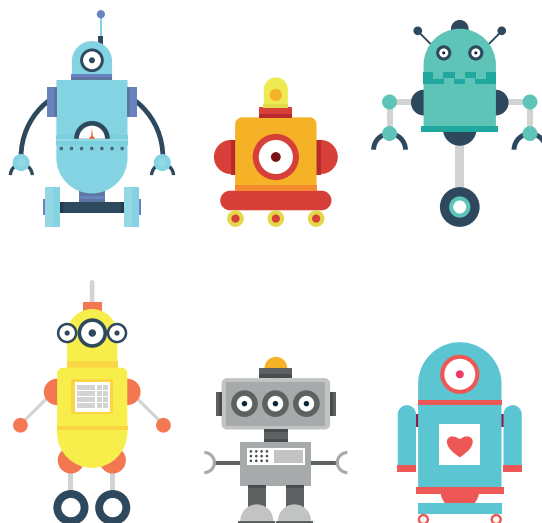
What have we learned?

We've learned that consumers are ready to use chatbots, they're a little hesitant regarding large amounts of money but are generally comfortable, even trusting artificial intelligence to pay their bills (65%). 85% of millennials have already interacted with a chatbot and the possibilities for your brands are, new, innovative and endless.

In summary

- 62% of people have already had contact with a chatbot and comfort levels are exceptionally high.

- Consumers are willing to spend money using AI with 65% willing to pay bills or buy small items under £100.

- Chatbots and AI is not a replacement for human interaction and we still would prefer to speak to a human to resolve frustrations but consumers are also frustrated by the lack of speed or availability of humans.

- We're in constant need for instant gratification. Chatbots are a way of leveraging the gap between availability and accuracy.

- Consumers are comfortable when bots make mistakes, they like to explore bots capabilities and as long as expectations aren't created by the bot itself then there's no problem when they're not met.

- Bot interactions can be kept consistent across different communication channels but should also leverage channel capabilities where they provide a unique opportunity. We'll see more of

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these as companies like Facebook introduce facial recognition into their APIs.

- Display installations and virtual reality offer ways for our virtual assistants to be incredibly engaging in the physical domain.

- The cost of apps is approximately 15% of that of a mobile app with significant reductions in effort throughout the development life cycle.

- 11% of our survey correspondents owned an Amazon echo which has only been commercially available for 3 months at the time of writing.

- Personality and expectations of a bot are important to it's success. Variation in dialogue adds a human-like facade to conversations which consumers find comforting.

- Bots can be used to facilitate research. The cost of developing bots is very small and so they can be used for consumer surveys or to prototype business ideas.

- Speed, relevance and convenience are the three basic expectations when communicating with conversational user interfaces.

- 33% of users worry that conversational UI won't understand them. It's the responsibility of brands and developers to raise consumer expectations.

- There are two types of conversation - controlled or organic. Controlled conversation bots are quick and cheap to build but limited in execution and can have an impact on speed and frustration.

- Bots should learn naturally based on consumer interactions. A human needs to regularly train and

analyse the conversations had between consumers and bots to develop a roadmap of features for bots which have a longer term commitment.

- Keeping dialogue open allows brands to maintain regular contact through messenger apps and increase sales pipelines.

- Conversational UI can be used to access new markets and be used as an avenue for new product releases.

- Bots can be used to facilitate your workforce and enable teams. They can also be used to get to know your customers better by enriching your CRM and allow you to spend more time creating.

- We're currently at the 'fart app' stage of chatbots similar to the iOS app store of 2008. The most bizarre apps still succeed with minimal effort but well thought out and executed bots are paramount to developing user expectations and long term success.

- Bots can easily be integrated with your existing digital media and they should.

- Bots are exciting. As we enter the first real year of the bot we'll see consumer demand for bots increase while their expectations of them will push them into ever more complex tasks.

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