AI and Customer
Service Series

How to start smart with chatbots for customer service

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What's This Section All About?

You are probably reading this because of the noise, hyperbole and general excitement around chatbots, virtual assistants, robots, AI and all the other headline categories that shout out for attention as they flood your inbox every day.

Glancing through them, you get the general drift but topics can easily merge into a single Hollywood style back story. For instance, Elon Musk and Stephen Hawking fear what they see in an emerging AI defined society. Are they right?

In contrast, Andrew Ng, one of the world's most famous AI experts is trying to be less sensational. He is incentivising everyone (at scale via online learning platforms) to learn new AI skills to offset the loss of jobs being forecast. Will things balance out in time or could things still turn ugly?

Nowadays it takes a brave person to brush aside the *'it is **so** the right time to have our own chatbot'* chatter and claim there are more important things to invest in. Maybe there is even some sense in this point of view as well.

For instance, quite a few people coming back from Berlin's 2017 Bot summit wondered where the action was after all the hype. Lots of vision but too few real world deployments seems to have been the consensus.

So, is it better to wait until 2018 for something of substance to turn up? You've probably read that over 100,000 developers joined Facebook's mission to build bots on its messaging platform; that's testament to where the world is heading. Surely one year later something worthy will have bubbled up beyond a weather or news bot?

Does the ability to be served up recipes, in response to offering a bot your favourite food emoji, really signal a new era in intelligent assistance? Or is there a competency gap between an intelligent and dumb bot that we all need to learn how to spot?

Looking further out to check if this is just a freak storm or a permanently new climate, you will have noticed how the major technology companies are drum beating their new value propositions. 2016 saw Google replace its 'Mobile First' slogan for an 'AI First' version.

All the gold-plated consultancies talk about a new era of 'cognitive computing' and what this means for new sources of competitive challenge and opportunity. Which takes your fancy? Cognitive automation. Cognitive insight. Cognitive engagement. Or to put them into the language of customer service - 1st time resolution workflows, auto generated performance dashboards and smart self service.

Should you go for a text interface or voice? Or can multi modal wait for a year? Right now both Google and Amazon are in an arms race to win household allegiance to their respective voice assistants. In catch up mode, region specific smart speakers with Cantonese and other non-Western languages are now flooding the market to spread the joys of Alexa type interaction across the world.

This all shows that there are many things to think about. And that's all before your local workforce management vendor comes knocking on your front door wanting to share their exciting new AI enhanced roadmap with you!

Your challenge is to figure what's real and what can be kicked down the road as a future investment.

This series of whitepapers (three in all) and associated Q&A webinars will help answer this core question. That's why we have designed them as a single conversation that explores how to get value from a technology wave that is only going to keep getting better year on year. Across the series we will cover:

- Where to start?
- How to implement fast
- How to optimise before the next 'must have' wave turns up

As guest author, I am drawing on many decades of developing customer service strategies. More specifically from the 'Intelligent Assistance & Bots For Self Service' master classes I've been running since March 2016 which provide feedback on what really matters to decision makers considering these solutions.

Enriching this is an ongoing collaboration with intelligent assistance experts Opus Research who collate industry best practice and the latest global use cases.

Finally, threaded through these whitepapers is the collective wisdom of CX Company who are sponsoring this thought leadership series. I've handpicked the best of what they have discovered from eighty deployments over ten years.

Collectively we've written this to inspire a conversation with you and get closer. To that end we have created an email address that will reach me and CX company members so you can easily share any thoughts and ideas that arise from engaging with this content.

It's thinkingaloud@cxcompany.com

Looking forward to hearing from you. And of course, I'll remind you again at the end of each whitepaper on how to make contact.

Martin Hill-Wilson
- your author

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Check User Demand

In helping make your first key decision a successful one i.e. what's our best use case for Intelligent Assistance? - we are going to cover some foundation topics, followed with a broad cross section of real world intelligent assistants. From this we will show you what is possible and then finish with a checklist to help you narrow down your choices to find the use cases that provides early wins.

First off let's briefly address user demand. This obviously matters if most of your customers say they are unwilling to engage with a virtual assistant.

While there is plenty of research that says uptake is strong and growing, (see examples below) it's always more credible to augment industry data with some feedback from your own customers to discover where uptake is strongest.

Is it by generation, by customer journey, in certain situations or a combination? Given the dynamic adoption of digital behaviour, your insights will change year on year. So, consider asking about intelligent assistance adoption as part of your regular voice of the customer programme.

Meanwhile here is some of the better-known research snippets often used to demonstrate market adoption:

Opus Research, a respected analyst firm in the US specialising in Intelligent Assistance, predicts that the intelligent assistant market will be worth **$4.5 billion** globally by 2021 (Opus Research)

27% of consumers were not sure if their last customer service interaction was with a human or Chatbot (PWC)

27% of UK males would use a messaging based bot for service based troubleshooting (MyClever)

By 2020, customers will manage **85%** of their relationship with the enterprise without interacting with a human (Gartner)

Pick Consistent Terminology

Something else we need to quickly tackle is terminology. It's confusing! Intelligent assistants, virtual assistants, digital employees, personal digital assistants, chatbots, bots, and even metabots. The list goes on. Are these really different in terms of capabilities or just different names for the same thing?

Here is a classification that might work for you.

At the most mature end of the market is the intelligent assistant marketplace. These solutions are also called virtual assistants or virtual agents. They are historically service orientated with a core competency in knowledge management.

Most have been deployed on web sites. Increasingly this means smartphone as much as desktop sized screens. Some are nested in apps. Others appear on kiosks. They are typically text or voice based. The latter has grown in popularity as speech recognition rates have rapidly improved in the last few years. Some appear as branded avatars. The most expensive provide multi modal input (touch, talk and type).

The core technologies that distinguish this class of self service is natural language processing and understanding, this allows customers to communicate as they would with live assistance which enables the 'intelligence' in 'intelligent assistance' by inferring customer context and intent.

This then drives the matching of customer questions to the right answers or task completion. In turn, this is enabled by deep knowledge management capabilities. This is focused on human assisted knowledge curation, to maintain the accuracy and relevancy of customer service answers, plus ongoing identification of knowledge gaps (questions asked: available answers).

The pattern spotting capability of machine learning is increasingly used in these types of tasks. The more sophisticated solutions can also include the benefits of deep learning which allow systems to self learn over time. Even then, most real world deployments will still opt for a blend of human and machine curation to maintain oversight.

Incidentally CX Company talk the language of intelligent assistants.

At the younger, cheaper end of the market are the so-called bots or chatbots. The kind of bots we are referring to here are a recent invention. Typically built on a messaging platform such as WeChat, Messenger, Viber etc., they are by definition targeted at a smartphone using audience. To date they are text only. Their use cases are more modest than the ones just described. As a result, the development costs and time to market are typically cheaper and faster.

How good are they? Within the simple conversational interface and content carousels they offer, they can be very effective when well designed. Messenger's CNN news bot works as expected in serving up bite sized chunks of news. I use GrowthBot to tell me how my mail shots are performing which leverages a simple API link into MailChimp.

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As such they are fine for information and certain task completion. Typically, they are stronger in simple information requests than service enquiries which demands superior problem resolution competencies.

This is reflected in the most mature messaging platform WeChat. It has strong transactional functionality from standard e-commerce to booking hotels, flights and doctor appointments. However, none of the popular Western messaging platforms are anywhere close to this level of functionality or user adoption.

Maybe in recognition that basic functionality needs a boost, Facebook acquired Ozlo in July 2017. Ozlo focuses on improving conversations between humans and virtual assistants by recognising when clarifying questions need asking in order to provide more accurate answers. So, it is possible that later versions of Messenger will prove more compelling for self service duties.

Meanwhile many of the leading intelligent assistant vendors have already extended the reach of their solutions to include messaging versions. This makes life easier and ticks the box for providing a single solution over all devices and digital touch points.

Finally, there are the so called meta bots – Siri, Assistant, Alexa, Bixby, Cortana etc. These are primarily voice based and represent another evolutionary path as an interface for non-computing devices. All are positioning themselves to become your permanent digital assistant. Right now, they are most convincing for information requests and voice gateways for simple transactions. None have yet positioned themselves as being suitable for in-house customer service duties.

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Self Service versus Live Assistance

Another foundation question to clarify is when self service is likely to be welcomed by customers and when live assistance is preferred. Getting the balance right between full automation and offering the human touch is highly topical.

This is not always appreciated when being led by a 'digital first' agenda which often ignores the psychology of when people need people. So be realistic if you want to end up with a convincing ROI because customer intent always wins the day. And if talking to a person looks like the path of least resistance to a customer, then that's the path they will take.

Here is a simple rule of thumb I use in my omni-channel masterclass.

Self service is increasingly the preferred route for 24x7 access to information, education and task completion unless the following apply.

When a situation is emotional:
This can be either positive or negative. I'm nervous and excited buying a new house and need the reassurance of another person to guide my decisions. Or I'm angry and upset that a personally important event was ruined by your organisation. A bot apology just doesn't cut it!

When a situation is complex:
Often when things get too complex we cannot think clearly about our issue or how to work out what to do. That's when another person is needed to work out the problem. Again, FAQs or even virtual agents are unlikely to satisfy my frustrated state.

When you want to strengthen the customer relationship:
Finally, in a world where every organisation parades its customer experience ambitions, does it make sense to miss opportunities to strengthen the relationship between customer and organisation? Scaling human contact to large customer bases is not easy but it stays with customers that a real person got involved when it mattered.

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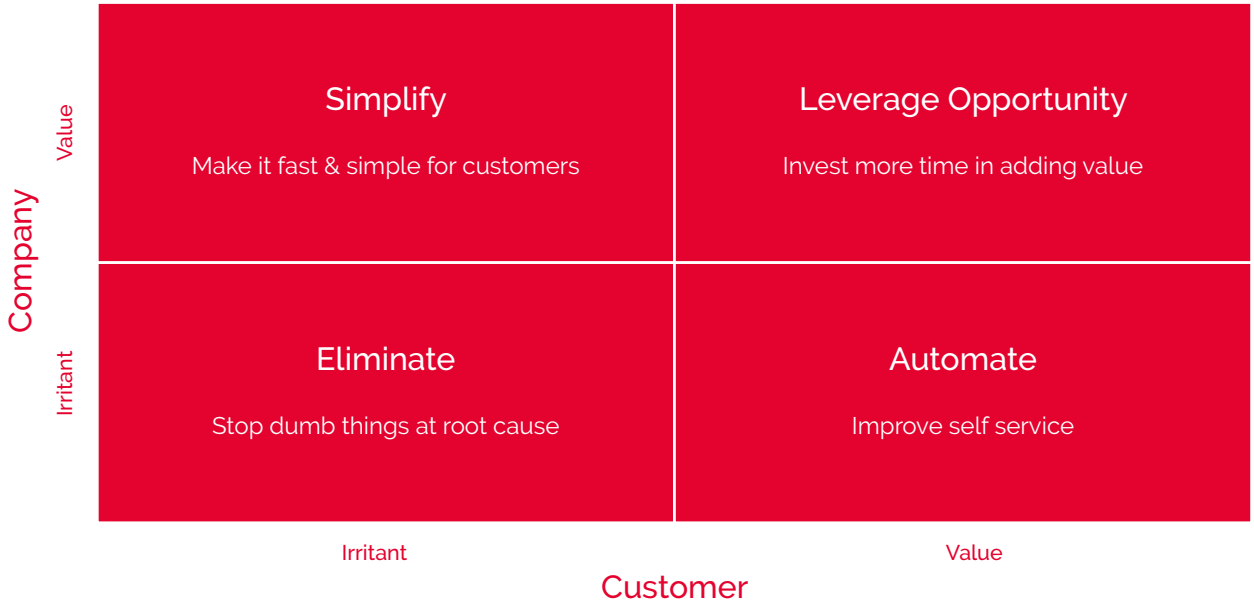
In these cases, well signposted, low effort escalation to a person becomes the priority.

So, if contact deflection is one of your prime motivations for investing in intelligent assistance be clear that you need to choose customer journeys that are not complex or emotional in the ways just described. For these reasons it's worth noting that many organisations still need to simplify their core journeys before they are in a fit state to hand over to customers as self service. So carefully pick the ones that offer early wins.

Another way of looking at the opportunity is through the lens of the value irritation model pioneered by Bill Price, ex VP of Customer Service at Amazon.



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Use Cases That Work as a Launch Pad

Let's start tuning into different types of use cases on the understanding that you want to pick something that works, has rapid ROI and builds internal confidence for more ambitious efforts, later on.

So, what should be your scope of ambition? For instance, I've just plucked this from a webinar invitation I received.

"AI technology is being applied in online shopping to mimic the expertise and efficiency of talking to an in-store expert. Can guided, contextual, dialogue-based engagement yield results and build loyalty the same as face-to-face, in-store relationships?"

The promotional copy suggests this companies virtual assistant could provide a comparable experience to an in-store expert. Of course, that benchmark could range from a summer intern to a twenty year veteran. But is it realistic to expect the same level of empathetic understanding around what a customer wants and then offer personalised, relevant advice?

In other words, is this particular use case a walk in the park for this generation of technology? Or is it stretching the envelope and only for advanced users or unquestioning webinar attendees drawn to a provocative headline?

As it happens, the brand providing the testimonial was 1-800-FLOWERS who are well known early adopters. We can assume they have foundation competency in place and are looking for more ambitious opportunities. Therefore, our conclusion is that this use case is not something to put on your shortlist if you are starting out. In fact, even mature users will need to carefully assess whether virtual assistants with their current capabilities are adequate replacements for face to face, in-store relationships.

So, don't become over ambitious until you develop a sense of what the technology can really do and you have your foundations established, especially regarding knowledge management.

Here's another use case you should probably initially avoid.

A UK local authority decided to meet the challenge of ever reducing budgets with a strategy for large scale adoption of self service technology. In order to replicate the face to face experience as close as possible, they opted for an avatar based digital employee.

An update on their proof of concept phase was provided at the most recent Intelligent Assistance Conference in London, run by Opus Research. This showed the authority had an ambitious set of journeys they wanted to prototype. These included all manner of planning permission and building control requests, financial assessments, environmental services and so called assisted care and self directed support.

It was a fantastic vision for how local authorities need to rise to the challenge and deliver innovative solutions. However, the proof of concept was already nine months old even before being tested for citizen reaction. This can create internal issues of credibility and means time is ticking before another evolutionary leap in technical capability arrives and potentially puts current efforts in the shade.

The lesson here is to look for proof of concept phases no longer than eight weeks to achieve early ROI and real world experience.

So, what fits the Goldilocks test of being just right as a start out project?

A classic quick win is to replace Help/Support/FAQ and Contact Us pages on a web site with a virtual assistant. This is seldom seen internally as a high profile part of the website, so issues of control and ownership are less likely to occur than say deciding to replace an e-commerce basket function, which typically receives high attention and optimisation.

Nonetheless, it's an important one since lack of discoverability remains the number one reason why customers don't use self service to its full potential. This is because SEO and signposting are typically poor. Customer service teams either lack the skills or influence on web site design to ensure user adoption.

Inadequate search engine results combined with frustrating onsite navigation leads customers to escalate to live assistance. In this context what should have been simple becomes unnecessarily complex and probably emotional by failing to meet expectations for a low effort experience.

The good news is that there are many use cases that illustrate how rapidly this can be reversed when effective self service is introduced. While I'd advise you to set your ambitions on more modest deflection targets, 50%+ reduction in live assistance volumes are not uncommon in these situations.

Below is a cross-section I've heard over the years, as presented by the brands themselves at Opus Research conferences, plus a few kindly contributed by CX Company:

- Swedbank now offers text based self service access to their most commonly asked questions and are achieving a 60% deflection from live assistance with 78% first time resolution as a result.
- Ticket reseller Ticketbis reduced live chat volumes by 80% using a combination of virtual assistant and auto suggest searching to surface relevant FAQs as a final option before escalating to live assistance.
- US based ISP Windstream saw a 45% reduction in chat volumes while achieving a 70%+ first time resolution.
- Communications provider Charter was experiencing more than 200,000 live chats a month. They decreased live chat volume with 83% deflection and achieved a 5x ROI within the first six months of implementation.
- Panama's airline COPA has reduced call and chat volumes by 65% since introducing its branded Ask Ana service.
- Anglian Water deflected 14% of live calls to its intelligent assistant which now handles more than 30,000 questions per month. 97% of all customers are satisfied with the quality of this self-service solution, and complaints are down 22% as a result.
- Dutch insurer Ditzo reduced live calls by 50% with 90% of all questions answered via self-service, while NPS improved from +7 to +13 as a result.

The consistency of achievement across these examples shows this is a great place to start. Get your service knowledge up to par, build capability to curate and improve it. Present the service in a low effort interface that 'turns knowledge into conversation' which keeps customer more engaged. Aim to get it up and running for testing within eight weeks.

By the way this class of solution can serve other use cases as well. Many sectors have seasonal peaks. This is expensive when delivered as live assistance. For instance retailers need to seasonally scale their customer service resources as demand peaks during the annual cycle of sales periods that drive up the typical voice or chat questions such as 'where is my order', 'how do I make a return' 'do you have stock'?

So, this might be a more compelling reason for you.

Checklist

Finally, here a few of the important things to put onto your action list going forward.

1. Go for low hanging fruit. Gartner might be right that 85% of all customer interactions will not involve humans by 2020, but you have to start somewhere and build a base.

2. Given the cost of live assistance, deflecting simple enquiries to self service is the easiest to measure ROI across all the marketing, sales and service use cases that virtual assistants will eventually occupy.

3. Many organisations already have some relevant content for this form of self service. Triaging the most popular topics in your first phase means their quality can be rapidly improved and market tested.

4. Knowledge does not look after itself and needs a properly resourced strategy that develops into a foundation competence. This can be replicated for other self service journeys as you expand your scope of ambition.

5. True omni-channel recognises the interplay between self service and live assistance. Therefore, choose a solution that allows both channels full access to the state of conversation and any other contextual information to maintain continuity between the virtual and live assistant

6. Pick a solution that allows you to build once and deploy everywhere.

7. Pick a vendor able to offer a bare bones path to early ROI who can also scale in terms of all the clever stuff that currently grabs the headlines.

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How to get off to a fast start with your Intelligent Assistant Programme

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What's This Section All About?

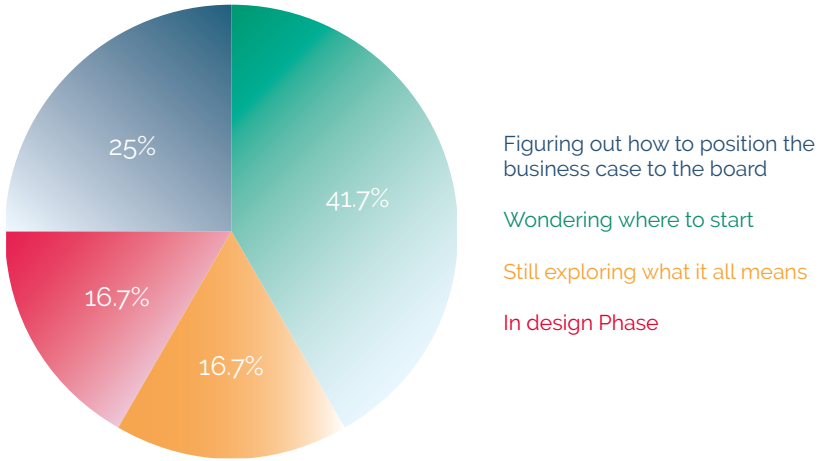
The world of intelligent assistants is a fast moving one. For instance, between the writing of the first whitepaper in this series on how to pick your best use case, Amazon and Microsoft announced their voice assistants will now talk to each other: a sign of the rapidly maturing ecosystem that is redefining the delivery of customer service.

Here's another indicator of market growth. Industry watcher Opus Research estimates there are around 2,700 intelligent assistants in active service. This will rapidly expand as a further $4.5bn is invested in enterprise intelligent assistants by 2021.
It is likely that your own organisation will be contributing to this investment as part of a much broader interest that has been generated in AI and its impact on organisational life.

Within the timeframe of Opus Research's predicted growth, the way customers engage with organisations is due for rapid evolution. How customers discover, buy and are then supported throughout their lifecycle will become a shared activity between people and their virtual equivalents.

Offering frictionless access to information will become table stakes. So too will education around how products and services work. It will become common to self serve many basic jobs such as making an order, buying more, returning goods or making a claim. In fact, any of the core activities which make up the routine of your customer engagement will become an instant 24/7 service.

But are customer service professional ready for it? In a recent webinar session we asked that exact question, and it soon became clear that a massive 84% of customer service professionals are 'playing the waiting game'. A fifth (17%) are still thinking about where to start when it comes to Intelligent Assistance, a quarter (25%) are figuring out how to position their business case to the board, while two fifths (42%) say they're 'still exploring what it all means'.



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Of course, when things become emotional, complex or matter to the quality of a relationship, live assistance will need to be readily available. And crafting seamless two-way escalations will become the hallmark of organisations that are judged to get it right.

The solutions to do this are already available. Those with early mover advantage are already moving onto second base. For the foreseeable future, the enabling technologies powering these solutions will continue to reach new milestones in functionality and ease of deployment. The art of the possible will only keep expanding.

However, the challenge for the mainstream just starting out is slightly different. Their job is to get to first base as fast as possible. Without a hiccup. In the first instance, the prime target is to achieve internal recognition and confidence in a new, untested approach. For most, it will be too early to push the envelope on new use cases that aim for market differentiation. Of course, there is the argument that 'fortune favours the brave' and that might be the type of organisational culture you are expected to aspire to. In which case, you will need to crank up your ambition and level of risk accordingly.
For those working in more conservative cultures, it remains true that there is often a gulf of credibility between hearing what others have achieved and being able to evidence that internally. Only on the back of solid credibility comes an ambition to do more. It's all about building confidence based on seeing something that is working in your own context.

If that description fits then your first goal is to gain agreement that Intelligent Assistance is an effective way of transforming customer engagement. One, that with further investment, will clearly drive mutual value in terms of revenue and costs since customers now find this form of engagement to be better, faster and easier.

But generating this positive mindset is predicated on getting things right in the first instance and not delaying things with early failure and contaminating corporate enthusiasm. This means avoiding expensive projects that overrun and underwhelm.

In the first part of this whitepaper series I argued for a low risk approach that focussed on leveraging existing self-service assets. Something many organisations have already invested in.

Typically, these are under performing in terms of customer uptake. In these cases, adoption issues normally centre on a lack of discoverability. As a result, the degree of customer effort required to find a satisfactory answer means far too many customers decide to fall back on the comforts of live assistance.

Boosting FAQ uptake through improved search and service knowledge quality, housed in an engaging conversational interface, is something most organisations can get up and running within six months if not sooner.

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The benefits are easily measured in terms of live assistance deflections. User sentiment can be captured via post interaction surveys. Baseline versus increased use of the FAQs is easily tracked using Google Analytics or equivalent web metrics. In other words, a robust ROI can be easily articulated.

So, having hopefully influenced your thinking on where to start, let's now move onto everything you need to think about between design phase and initial launch.

But before setting off on that exploration I'd like to once again thank CX company for sponsoring this thought leadership series. In addition to whitepapers and webinars, we are holding a variety of face to face sessions. All with the aim of generating an industry wide discussion on best practice that we can all share and benefit from. A genuine intention on my behalf.

To that end, if you have questions or insights you would like to share for the common good, then please direct them to:
thinkingaloud@cxcompany.com
We are listening.

Martin Hill-Wilson - your author

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A Maturity Framework

Wherever you decide to pitch your own baseline as the start point, you are setting off on an evolutionary journey. Some of the best advice I heard this year on how to pace that journey came from David Isbitski, who rejoices in the title 'Chief Evangelist, Alexa and Echo'.

During the London version of the Intelligent Assistants Conference, David shared some of the best practice Amazon provides for first time developers of its Alexa technology. The fact the company has already scaled to over 15,000 'skills' since a 2014 launch suggests it is worth heeding.

As you probably know a skill, in Amazon speak, is the capability you can add to Alexa to do something. In the example that David shared the skill in question was real time traffic reporting. This is how he describes the evolution of that skill:

The evolution of phase one into phase two is driven by insights gained from user feedback, this feedback prioritises the new functionality while helping optimise the skill to work more intuitively for the customer.

With that baseline of insight into how the skill performs and meets the needs of customers, things pick up momentum in phase three with a core focus on innovating for the customer and making the skill even more valued and distinct.

While David's story is about the world of voice based Intelligent Assistance, I consider it a useful maturity framework for any modality. It works because it is simple to understand, makes sense and is easy to apply.

Phase One: CRAWL

Challenge
Define Your Core Functionality

Example
Give an estimated time of arrival from home to work

Phase Two: WALK

Challenge
Expand Capabilities & Features

Example
Include accidents, construction and closures on route

Phase Three: RUN

Challenge
Evolve Over Time

Example
Proactively alert users to delays and provide alternative routes

Identifying Self Service Topics with the Greatest ROI

Obviously, you want to maximise the value of what is being delivered in your first use case. So, picking topics with the greatest deflection potential is a key success criterion. Here are some ideas on how you can research that list of topics and forecast the impact your first Intelligent Assistant could have on inbound contact centre traffic.

Do you offer search capabilities on your website? If so, trawling through a twelve month view of the enquiry logs can be a handy way of generating an initial view of customer intent. If you can also compare what is being asked against the existing inventory of FAQs, you should be able to spot unfulfilled needs as well.

Of course, not all customers will use your on-site search. So, this exercise won't identify the true extent of what customers are looking for. But it should help you focus on what you can do next: ask your customers and advisors for their opinion.

Thankfully in 2017 we are leaving behind the assumption that front line staff are only paid to perform as opposed to reflect. Empowered customer service cultures recognise the latent insight that accumulates from their daily interaction with customers. It's obvious really but remained a massively ignored opportunity for far too long.

So, if you're ready to mine that insight, here is how to do it.

Brief the advisors on the criteria I mentioned earlier that qualifies an interaction for their live assistance - complexity, emotion and relationship nurturing. Then invite them to keep a paper based log for up to a week that records the type and volume of interactions that do not require their input according to those criteria.

As with any decent approach to research, check progress often, collect and review tally sheets daily, and re-brief accordingly to ensure you are collecting valid results. Stop when the top tier of self service categories emerge from the analysis.

If I were you I would then go back and share the results with a smaller advisor group to validate them, and develop a deeper understanding of each category around what customers are looking for in terms of detail.

Pay particular attention as to whether customers also ask for advice or rely on the advisor in any way beyond being a channel for delivering information. If so, then I would reprioritise these examples for a later phase since they are likely to trigger more demand for escalation.

Next up is the customer view of what should be on that shortlist. This remains vital however clear you might feel as a result of what the advisor community has unearthed. Outside-in views always compliment a purely inside-out view even when it's based on those living and breathing the customer experience every day.

How you go about this depends on what research tools you have in your voice of customer arsenal. These might include post interaction text or voice surveys built into your workflow. If not then you might have to squeeze some time and resource for an outbound research campaign. If you have face to face time with customers in a retail context then you might be able to organise some traditional clipboard questionnaire sessions with them. If you are into e-commerce, maybe personalised messages that link to online surveys could work for you.

Participation these days is often incentivised. If so make it something that captures attention.

In terms of what you ask, here are some examples to base your survey around.

'When would you prefer self service instead of using a customer service advisor?'

'Which service option (self service or live assistance) would you prefer in the following situations?'

(based on the top suggestions from the advisor research)

However you go about it, keep in mind your goal is to identify topics with the greatest ROI. In other words, it is the simple high volume stuff you are looking for.

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Improving Service Discoverability & User Uptake

After sourcing the topics, you need to think about how to make sure customers can easily engage with them. Here is the basic action plan:

- **Retag your top FAQs based on keywords:** If you managed to make sense of existing enquiry logs as mentioned earlier, check so called long tail enquiry language to make sure your tags effectively capture how customers are actually asking their questions
- **Consider the best way to present your FAQ:** We are living in a visual world. Does video explain better than text? If so, recruit internal talent and train them. Once done, pay special attention to how videos are tagged to make sure they can be as easily discovered as text
- **Leverage your tags:** By leveraging tags you can provide an auto suggest function while the user is still writing their question. This helps the process of matching questions and answers and makes the service feel smarter to users
- **List your top 3-4 FAQs underneath the search box:** Once launched, use analysis of search queries to maintain an up to date list of priorities
- **Ensure the priority list also highlights latest responses to breaking news:** Develop a rapid response workflow to highlight the latest advice/updates for planned and unplanned events. These could be triggered by incident management, product recalls or service outages. Anything that disrupts business as usual and causes an exceptional number of customers to make contact

The way I've just described the tagging process might seem rather old school, especially if you have been reading up on machine learning techniques. Do people really need to still do this type of knowledge curation? On first time use cases, when the scope of service knowledge remains tight and the budget for what is often a proof of concept remains modest, my answer is yes.

Of course, one of the reasons why Intelligent Assistance is fast rising to the top of the agenda is the impact that AI now makes in terms of improving the quality of self service answers over time. However, machine learning needs large data sets to feed on in order to find the patterns. By definition your first use case is small scale.

It is also worth noting that at this point in time, most AI packaged Intelligent Assistant solutions prefer to pitch machine learning capabilities as human assisted learning, as opposed to being entirely autonomous. So, there is still knowledge management to be done.

Preparing For Launch

The final topic in this whitepaper is one that needs careful consideration each time you launch a new phase in your Intelligent Assistance programme. In other words, this works whether your ambition is to get to first base or finally make self service the primary service experience for your customers' entire marketing, sales and service needs.

It's about recognising that old habits die hard.

Assuming you have been using some form of agile methodology during design phase, customer reaction will have been a guiding principle throughout. This means you can think about your launch activity as simply extending this process of design, test and improve.

If you are pretty confident from this feedback that the user experience is largely positive and that the intended customer outcomes are being mainly achieved, you can then confidently schedule a rapid rollout of the service.

To achieve rapid adoption with minimal support requests, it is a good idea to initially promote to 'digitally mature' users if you have the capability to define such a persona. If not, then slanting it towards a younger demographic is a good enough proxy to get things going.

After this initial cohort is engaged you can move on to wider audiences. Of course, it is worth remembering that even though this new Intelligent Assistant capability is front of mind for you and your team, most customers remain unaware. So, don't forget to promote!

It's a common mistake in all forms of service innovation. For instance, a recent UK survey into the use of Intelligent Assistants uncovered a need for more education around how consumers should engage:

"Even though 57% of UK consumers said they were aware of what an Intelligent Assistant is, 40% said they would not think to engage with one or did not know how to use one".

(Morar Consulting)

Do not under estimate the degree and duration of promotion that is needed to catch your user's attention and persuade them to try out something new. Chip away at the old habit of requesting live assistance. For instance:

- Give your phone, chat, social advisors or retail staff extra time to educate whenever the Intelligent Assistant could have provided the answer
- Produce videos that show how to use the service. Push these via advisors. Headline them in your service portal. Include them in whatever update channels you have developed with customers

In other words, design a full and persistent communication plan. It's surprising how long it can take to get the news out. Let me illustrate with a recent, personal story.

As an awards judge I was assessing a specific self service capability for an organisation I also happen to be a customer of. In spite of all their endeavours to promote the service, I'd never even noticed it existed. After tracking it down on their website (hidden under two menus of options), there was no obvious signposting anywhere else to draw my attention to what was being claimed as a radically useful service that was receiving high customer praise for its value.

The lesson here is make it visible!

This is a struggle I've heard mentioned a few times at Opus Research Intelligent Assistant Conferences. For instance, US based ISP Windstream and Nordic bank Swedbank both remarked during their presentations that their new Intelligent Assistant service was not initially given its due prominence on their respective web sites. The reason was down to the competing claims of stakeholders all gunning for 'maximum exposure'.

The net result is an intelligent assistant that is relegated away from its optimal position of being front and centre of a user's awareness. Remember, one of the main reasons for low self service adoption is that customers cannot easily find it and so revert to live assistance.

If effective promotion is half the job, then the other is being organised to rapidly learn and improve once the service goes live.

Something I learnt from ex Forrester expert John Ragsdale who now runs TSIA for the global service help desk community, is that knowledge management is a never ending quest. During a conference debate he highlighted the average life of a knowledge management solution was surprisingly short given their typical cost.

He identified the main reason for choosing a 'better' one was nothing to do with the solution's functionality and everything to do with a lack of ongoing knowledge curation. In other words, don't imagine service knowledge grows on trees.

So, recognising the need for ongoing resourcing is important. Whether provided by your Intelligent Assistant partner or from within your own team. Out of date and incomplete service knowledge is why customers revert to live assistance. Make sure you budget and resource a team able to both maintain and grow an effective knowledge base. Having feet on the ground matters, especially in the period directly after you launch.

Here's why.

Earlier on I talked about how to identify the service topics with the greatest ROI as the foundation for ongoing user adoption. These top questions ensure the service is often used. However, it also sets an expectation with users that your Intelligent Assistance is now the go to place to answer everything.

Of course this is not the case. Nor was it your design goal as you set out, since it's better to operationalise within six months, rather than spend a year building an all embracing service capability.

But there is a consequence and challenge as a result of this rapid deployment approach. And that is to anticipate the expectation for an 'oracle' service that can answer anything. So, you have to be ready from day one of go live, to hunt down knowledge gaps, and existing answers that are failing to satisfy and still result in an escalation to live assistance. A topic we will explore in greater detail in the final whitepaper in this series.

AI and Customer
Service Series

Maxing today's Intelligent Assistant before next year's 'must have' arrives

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What's This Section All About?

This section is the last in a series of three that explores how to make a success of introducing Intelligent Assistance. When done in the ways explored in the previous two sections, you will be well on your way to reducing the volume of customer enquiries that end up in front of advisors. That is to say, you will have made your self-service sufficiently useful and easy to use that customers are willing to change how they engage with you.

Understanding AI's current impact on customer engagement

We have written this series fully aware of the tremendous advances being made within the cluster of technologies that drive this new generation of self-service solutions. For instance, real world speech recognition rates at Google improved from a word accuracy rate of just over 75% in 2013 to this year's benchmark of 95%.

Can that be bettered? Apparently so. When chief AI scientist Andrew Ng moved from Google to Baidu, he also moved the dial to a 99% level of word accuracy. A massively impressive achievement.

'In a few years everyone will be using speech recognition. It will feel natural. You'll soon forget what it was like before you could talk to computers.'

Given his track record, Andrew Ng is not the kind of person to doubt. So we confidently wait for that reality to emerge. But, that is not to say we are on the cusp of deeply satisfying conversations with our 'favourite' chatbot.

Recognising words is one thing. Making sense of them is quite another.

That's because natural language understanding (NLU) has a tough job making sense of the way we speak. In particular, resolving the many ambiguities that pepper our conversations. As humans, we compensate for this with a lifetime's experience that gives us the ability to interpret situations. In other words we continuously 'read between the lines' and show a cognitive flexibility that defines us as humans.

It remains an open question whether and when this ability will be fully mimicked by a silicon counterpart.

What we do know is that right now the algorithms that allow a virtual assistant to understand a customers' intent and match it to a credible answer are still better thought of as 'one trick ponies'. One trick ponies that can get smarter at that one trick over time through machine learning. Even then, there needs to be enough clues in how a question is framed for an Intelligent Assistant to live up to their name.

This is where experienced dialogue design comes in. It must be based on iterative testing and observation of how customers choose to express commonly asked questions with all the nuances that each of us introduce into our everyday speech. Even then, at the end of the day there are only so many ways to ask something such as, "How to make a claim". Once these variations are encoded into an upgraded version of the algorithm, we have the basis of a conversation that should end up with the outcome hoped for by the customer.

This is why FAQs are such a great proving ground. They offer a relatively tight scope within which to train your chatbot to sound like they know what you mean.

But as said earlier, language is strange stuff. Here is an example of something most adults can instantly decipher which still leaves your average virtual assistant in 'does not compute' mode. It's called the Winograd test, in recognition of Terry Winograd who drew the world's attention to this semantic challenge.

A Winograd schema is a pair of sentences that differ in only one or two words and contain an ambiguity that is resolved in opposite ways in the two sentences. This requires the use of world knowledge and the type of reasoning I mentioned above for its resolution.

It's easy to understand when you look at an example. Here's one:

Sentence One

Pete envies Martin because he is very successful. Who is very successful?
Answer: Martin.

Sentence Two

Pete envies Martin although he is very successful. Who is very successful?
Answer: Pete.

Humans understand the identity of the person being referred to changes even though it remains ambiguous exactly who 'he' refers to. Computers are not yet on par.

In order to catalyse improvements in this respect, the first Winograd Schema Challenge was run on July 11th, 2016. The highest correct score over multiple examples was just 58%; achieved by Quan Liu, from the University of Science and Technology, China.

That low(ish) score is why you are going to have to wait some years before free-ranging conversations are common place, as predicted by Andrew Ng.

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Be ambitious. Remain realistic.

Just because that capability remains years away, it does not mean you should put everything on hold. There are significant milestone improvements happening every year within the strands of AI that play a role in Intelligent Assistants. This spells opportunity. Which brings us nicely to the core question I'm exploring in this whitepaper:

'What needs to happen to extract the greatest value from this year's capability and bank that ROI before investing in the next generation of Intelligent Assistant solutions?'

Everything I've read suggests we can expect a rapid evolution in AI technologies for the foreseeable future. So, execution and optimization remains crucial for any Intelligent Assistant ROI.

Before we explore that challenge, I would like to restate my appreciation to the CX Company for sponsoring these whitepapers and accompanying webinars. We share a common assessment that the usual bubble of over-hyped promises for new technology is due to burst in the world of AI-fuelled chatbots.

As a result, most people still are still trying to figure out what's possible.

This series has been about talking sense and developing a game plan that focuses on moving fast with minimal risk. The trick is to be aligned with real-world existing capabilities. Amazing things are already possible that are changing customer adoption of self-service. As we all know, moving that dial is core to everyone's digital service strategy. Therefore, we should all be focused on understanding the realities of optimising what Intelligent Assistance can currently achieve.

If you would like to add your own point of view to this conversation please do so using thinkingaloud@cxcompany.com. We are listening and keen to learn from all who are building this new way of engaging.

Martin Hill-Wilson - your author

AI and Customer Service Series

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Beyond the headline of reduced headcount, what else matters?

Investing in new technology requires going through the hurdle of creating a business case. Since this is primarily seen through a financial lens, it always comes down to justifying revenue growth and/or cost reduction.

Assuming you are going to focus on improving customer adoption of your self-service assets, then clearly your business case is weighted towards a reduction in your cost to serve metrics. If you have researched and prioritised your use cases as suggested in the previous whitepaper, using advisor and customer feedback, augmented with manual analysis of your inbound service queues, you should now be able to estimate ongoing customer demand around certain topics.

Dividing that volume by whatever fully-loaded costs you attribute to the delivery of live assistance (different for voice versus chat?), calculates your current cost to serve figure for each type of inbound enquiry. The new and improved cost to serve figure is calculated by simply swapping your live assistance costs with whatever fully-loaded costs you attribute to the set up and ongoing management of your Intelligent Assistance.

Extras for your business case

Even with the right use case (see whitepaper one for advice) and ongoing promotion so that customers are aware (see whitepaper two for detailed tactics), do not assume that customer uptake will immediately hit 100%. Of the many use cases I have heard at conferences, deflection rates vary anywhere between 15% up to 80%.

Why is this?

- Some were still early stage examples and so had more momentum and uptake before optimal adoption
- Others achieved overnight success given the customer demographic and type of use case
- Others showed improvement over time once answers were tweaked, questions were sense checked and improved and low points in the user experience were reversed

So, do some modelling and set your adoption assumptions at a sensible level to reflect the fact that things will improve over time.

Secondly, remember that an effective self-service solution requires ongoing management. There are headcount implications that need accounting for whether these are sourced in-house, provided for by your solution partner or achieved through a mix of both.

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You should have a better idea of what types of skills you will need once you have read the rest of this whitepaper.

Finally, it might take longer than expected for customers to completely trust a self-service answer. As a result, they still feel the need to escalate and check with an advisor. This behaviour normally fades over time as you start to concentrate on analyzing user reaction and gain more understanding of what they expected. For instance, this could involve A/B testing the level of detail different customer types want in order to be satisfied.

I saw a great example of this at a recent conference. We were shown an ecommerce site for men's clothing that provided two description tabs against each article of clothing labeled 'women' and 'men'. The women's description was full of detail about texture and finish. The men's description went no further than claiming the buyer would 'look cool' wearing it.

The lesson here is that it takes something different to satisfy a certain buyer's curiosity. So too it takes some to fine-tune the quality of a self service answer so that it earns most customers' trust.

Not just about the money

At the start of this section I mentioned that business cases tend to focus on the financial implications. However, this does not tell the full story of the benefits you ought to expect and track from your Intelligent Assistant solution. Here are some other key ones you should think about. Each focuses on an aspect of customer expectation and behaviour which translates into the financial outcomes explored previously.

First time resolution

Given the importance that speed and instant access now plays in our digital lifestyles, any new customer service channel needs judging against its ability to achieve rapid first time resolution. As such, a comparison of resolution effectiveness and resulting customer satisfaction/NPS scores between channels (via post engagement feedback) would be high on my list as ongoing justification for investing in Intelligent Assistance.

Customer effort

It's a key metric, especially for clunky process driven businesses. One of the key 'out of the box' benefits of a virtual assistant is to provide a single persistent interface that does the hard work on finding answers and completing tasks. A lack of discoverability has been self-service's downfall to date and few web sites have really mastered signposting and UX (user experience) so that it is easy for customers to get their jobs done. Therefore tracking 'effort' scores relative to other channels is another key operational metric worth adopting.

Customer loyalty

Finally I'd look for some way to indicate any contribution to loyalty based on the overall experience being delivered. In particular its emotional impact which we now know influences our brand decisions more than our conscious rational mind. "What's the target experience we want for customers in this journey and what did they actually experience?" Sentiment tracking is rapidly maturing and could be used to test how a conversational, branded interface that simplifies getting things done could be translated into a loyalty indicator score. Food for thought at least.

Setting goals for your optimisation phase

Apart from expanding your ROI metrics beyond those that got you over the business case hurdle, what else should you be concentrating on during this optimisation phase?

Here are a few suggestions:

I've presented them as a series of questions to run through, possibly as a workshop agenda with colleagues. They are all inter-related so they are best discussed together. The decisions you make will form the basis of your optimisation strategy.

1. **Prioritise your expansion goals - new topics, new use cases, new territories, new platforms, new modalities**

a. Is it best to focus on adding new topics to extend the scope of your FAQs?
b. Is there an opportunity to tackle a new customer journey?
c. Having tested in one culture and language, can the solution be scaled across new territories?
d. If you started as a web service, what changes are needed for a responsive mobile version? Or for when you embed your Intelligent Assistant within an existing branded app or messaging service? How does this modify the user experience and self service presentation? For instance, FAQs will need repackaging and simplification for mobile customers.
e. Could you access more customers by extending your self-service reach onto platforms such as wearables or metabots like Alexa and Google Assistant? If so, can a text based interface be easily converted to a speech based one?
f. In summary, what does 'build once, deploy everywhere' mean in this context?

2. Setting up your Intelligent Assistant performance dashboard

a. What operational metrics do you need to manage? For instance uptake, usage, outcomes, user reactions, deflections, knowledge gaps
b. Can you track how self-service uptake is changing the type, duration and skills requirements in the live assistance channel?
c. What functionality is needed to automate the collection and presentation of these metrics? Will this need develop or is it part of the existing solution set?

3. Bedding in the Intelligent Assistant support team

a. Who is involved? Possible competencies include functional expertise e.g. customer service, CX or marketing, subject matter expertise, article writing, video scripting and production skills, conversational, persona and UX design skills, analytics and SEO
b. Is this a virtual or physically located team? Which roles are full-time or occasional?
c. Where do these competencies come from? In-house, partner or transferred skills?
d. What's their mandate and level of ownership within your overall omnichannel strategy?
e. Who do they report to? Who do they need to engage with? How do they work with the advisor community?

4. Service knowledge curation - sources, sign-off and format

a. What's the workflow and roles for researching, producing and signing-off new knowledge?
b. How is out of date knowledge recognised and amended?
c. How are new sources of knowledge such as peer-to-peer community knowledge captured and incorporated?
d. How is consistency of service knowledge maintained across all channels?
e. What degree of automated assistance in knowledge curation can you expect from your current solution? e.g. assisted machine learning
f. Do you need to finesse your escalation rules to ensure customers feel sufficiently supported and do not lapse back into the habit of live assistance?

5. Improving adoption and resolution rates

a. What analytical tools do you need to segment customer adoption and usage behaviours so that you can properly focus your improvement efforts?
b. How are you going to run A/B testing?
c. How are you going to gather user feedback on your improvements? Via the solution or through third party service such as UserZoom?

Thinking through your response to these questions upgrades your service strategy in terms of how Intelligent Assistance fits into your digital-first strategy. It will also signal the need to think through how to reposition the role of advisors as self-service increasingly soaks up high volume, low value interactions.

Reflecting on the bigger picture

Having beaten the drum on being focussed and practical over the course of three whitepapers, I'm now going to briefly kick-back with a little star-gazing and think about consequences and where this might all be heading.

I'm convinced that what we have been discussing is destined to invoke new paradigms, shift expectations and open up fundamentally new paths of engagement. As a leader and influencer of how your organisation steers its course through this emerging opportunity, it is worth reflecting on how you are going to capture your colleagues' imagination and inspire them to think differently.

Here is some food for thought.

Right at the centre of the debate around bots and the impact of AI is how technology is influencing the way we engage with our world. As humans we have always calibrated how we converse with the different tribes who make up our social network. We talk to parents, partners, children, best friends and bosses in different ways, with different vocabularies and intonation.

Conversational technologies simply extend this instinct. Email has its style, as does messaging. A live voice conversation works differently from an interaction with Google Assistant, even though both involve speech.

That said, it is worth remembering the current value of a chatbot is not how human you can make it but rather how human centred its performance and outcomes appear to users.

But, in terms of horizon-gazing, we can see there is a perfect storm ahead being whipped up by the underlying technologies employed in Intelligent Assistants.

It is astonishing to realise that computers are closing in on our human abilities to mirror each other's behaviours as a means of acting appropriately and in context. It begins by being able to learn about human social behaviour in a similar way we do. Through the observational (patterning) capability of machine learning, we are being recognised and known from everything we generate in our digital footprint and the recorded conversations we increasingly have with digital assistants.

This changes things.

Alexa is already poised to make proactive i.e. non-requested suggestions in much the same way that personal finance bots already let us know ahead of time what our spending patterns infer.
Beyond such current capabilities, could it be that brands will soon use this vast reservoir of insight to design chatbots that mirror who you are?
Just as humans do to fit a social group. That means every brand becomes like you. Or put the other way around, brands have as many faces as they have customers.

Of course, sandwiched between now and any such future state are many questions we need to answer and satisfy ourselves this is a desirable next-step in our digital lifestyles. Only time will tell how fast we allow things to evolve (as is already being hinted at).

One thing is for sure: conversations are the way we discover who we are both as individuals and sometimes as societies. Along the way we will adopt any technology that can nurture this desire. Writing, telephoning, emailing and messaging have profoundly influenced the conversation and value exchange that occurs as a result.

The future generation of Intelligent Assistants that we explored throughout this series are on course to extend and transform our unquenchable appetite to converse. Andrew Ng has already told us that. The question is: what will the rest of us allow them to become?

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Final observations

We have covered considerable ground over the course of these three whitepapers. Webinar and video versions also exist which compliment the insights and advice on offer. These can be easily found on the CX Company website (www.cxcompany.com) or requested via thinkingaloud@cxcompany.com.

I hope we have managed to positively influence your thinking and expectations around what an Intelligent Assistant investment brings at this point in their evolutionary arc.

As such, we have aimed to communicate to the vast majority of organisations still at the early stages of their Intelligent Assistant deployment. However, if you see yourself as already advanced in your understanding and application then please still consider a conversation with CX Company. They have deployed much more advanced solutions than I've dwelt on here. To avoid muddying the water, I've held back on that until the end of this exploration. For instance, ask them about Tinka, a truly conversational assistant.

Thank you for reading. It's been a pleasure to write.

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Thank you.

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