Designing AI Driven Contact Centers

In The New Era of Remote Working

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Introducing The Next Chapter For Contact Centers

It is no surprise that contact centers have become a prime mover in helping organizations explore AI use cases. We are now witnessing a comprehensive overhaul of daily life in this customer service touchpoint. From how customers engage, colleagues are supported, and management make informed decisions in real time.

As a result, contact centers are transitioning from a reactive function to one that can increasingly anticipate and act front footed.

Pivoting from a 'work harder' to a 'work smarter' mindset is now a realistic ambition. Anyone with contact center history will marvel at just how different and extraordinary this is!

The value offered by AI technologies has also multiplied in recent months with the unexpected impact of the pandemic. Remote working and fast changing customer expectations require fresh strategies. AI enables the design and realization of new ways to meet these needs.

This e-book explores current and imminent examples of AI's impact. At the very least we can expect it to optimize everyday productivity in the contact center. At best we can use the opportunity to reinvent the art of the possible.

For instance, the prospect of automated analysis for every customer interaction transforms the scalability of quality management. This is a market ready capability already used by early adopter brands.

Beyond that is the near-term prospect of being able to offer personalized learning paths to every advisor based on those insights. In effect creating a closed loop improvement cycle. This creates a powerful capability that can be designed into a transformative performance strategy.

It is one way in which a dispersed contact center workforce can be supported at scale. An issue that has become topical in recent months as motivation, mental health and team cohesion become front of mind issues. Service leaders are on the hunt for fresh ideas on how to navigate the unfamiliar challenges of working from home.

New Opportunities and Challenges Triggered by COVID

Understanding where to prioritize AI starts with a detailed understanding of how life has changed for both customer and organization since the global pandemic struck.

Whether effective vaccination ends up changing newly formed habits remains to be seen. What we do know is that the fear of social density has severely disrupted multiple sectors from travel and entertainment to bricks and mortar retail. Consumer habits have changed as a result.

For instance, global online activity soared.

According to Statista, retail websites generated almost 22 billion visits in June 2020 up from 16.07 billion global visits in January 2020.

In response, Amazon has added 175,000 new jobs around the world since March according to Jeff Bezos.

Expectations for social distancing have created other unexpected trends. Who would have anticipated growth for drive-in cinema? According to a **BBC article**, as traditional cinemas are being mothballed, drive-in equivalents are growing across the world. New ones are reported, in China, Russia, South Korea, Brazil, Nigeria, Lebanon and Iran. There is even a drive through museum in Rotterdam!

Social distancing has also created a mass experimentation with remote working.

There are many heroic stories of how the global contact center industry relocated workforces to their own homes.

Some with the right generation of technology had a head start but there was no choice other than to try. And in the process reversed a decades long corporate mindset of extreme caution with anything to do with homeworking. No doubt there have been many technology and cultural challenges since then, but somehow customer service has remained open for business, more or less.

Feedback from US & UK contact center association members suggest they faced significant challenges beyond just a change of location. For some, fluctuating inbound demand during the pandemic broke all previous seasonal patterns making forecasting and resourcing far more challenging.

Others have noticed significant change in channel use. Chat volumes have grown significantly. As have social channels. Possibly as a natural extension of more online consumer activity. Even so, voice remains busy for the emotive and complex. Often triggered by financial concerns.

The rise in digital consumer behavior and expectations for 'contactless' engagement has also boosted self-service and proactive messaging. This is part of a wider organizational response to a rapidly changing world resulting in renewed appetite for digital first agendas.

Then there is the question of when, how and to what degree workforces will return to traditional office life. Much rides on it.

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According to MIT economist David Autor and co-author Elisabeth Reynolds, the office economy is under threat. They are forecasting a permanent shift to remote working for a large part of the US office workforce as a near certainty.

Indicative of this new corporate mood is Pinterest's recent decision to pay $89.5 million to terminate a new San Francisco office lease for a building they had yet to move into. Meanwhile a significant number of other influential technology brands have made a return to office-based work optional. Australian telecoms giant Optus announced in April 2020 it will make work-at-home measures a permanent feature of its call center operations.

Pandemic triggered recessionary budgets also seem to have changed executive minds about the financial merits and knock on benefits of remote working. It is now embedded in their plans moving forward to provide workplace flexibility. This has also been influenced by widespread individual concerns for personal safety and an appreciation of improved work-life balance in terms of the daily commute and recent parental challenges with home-based schooling.

As such contact centers are likely to reflect this larger organizational change and adopt their own version of rotating workforces between home and office locations. This becomes a hallmark moment for the industry. There are significant implications.

For instance, the temporary coping strategies used to migrate to a home environment will need to evolve into a sustainable way of doing things. One that meets standards of governance, security and operational flexibility. In addition, those outsourcing to low cost economies will need to ensure there is adequate broadband in advisors homes.

Then there is the matter of finding new ways to sustain team culture and performance. Recruiters have already flagged new challenges while onboarding colleagues. It is also becoming clear that less experienced cohorts need the special attention which face to face supervision offers. So too with outbound sales teams who apparently need the motivational chemistry of a live office environment.

Finally, it is widely acknowledged that some have struggled with feeling isolated, cut off from the social chitchat and camaraderie that face to face presence invites. Mental health is a rising concern.

Is AI yet mature enough to offer scalable personalized support in these scenarios?
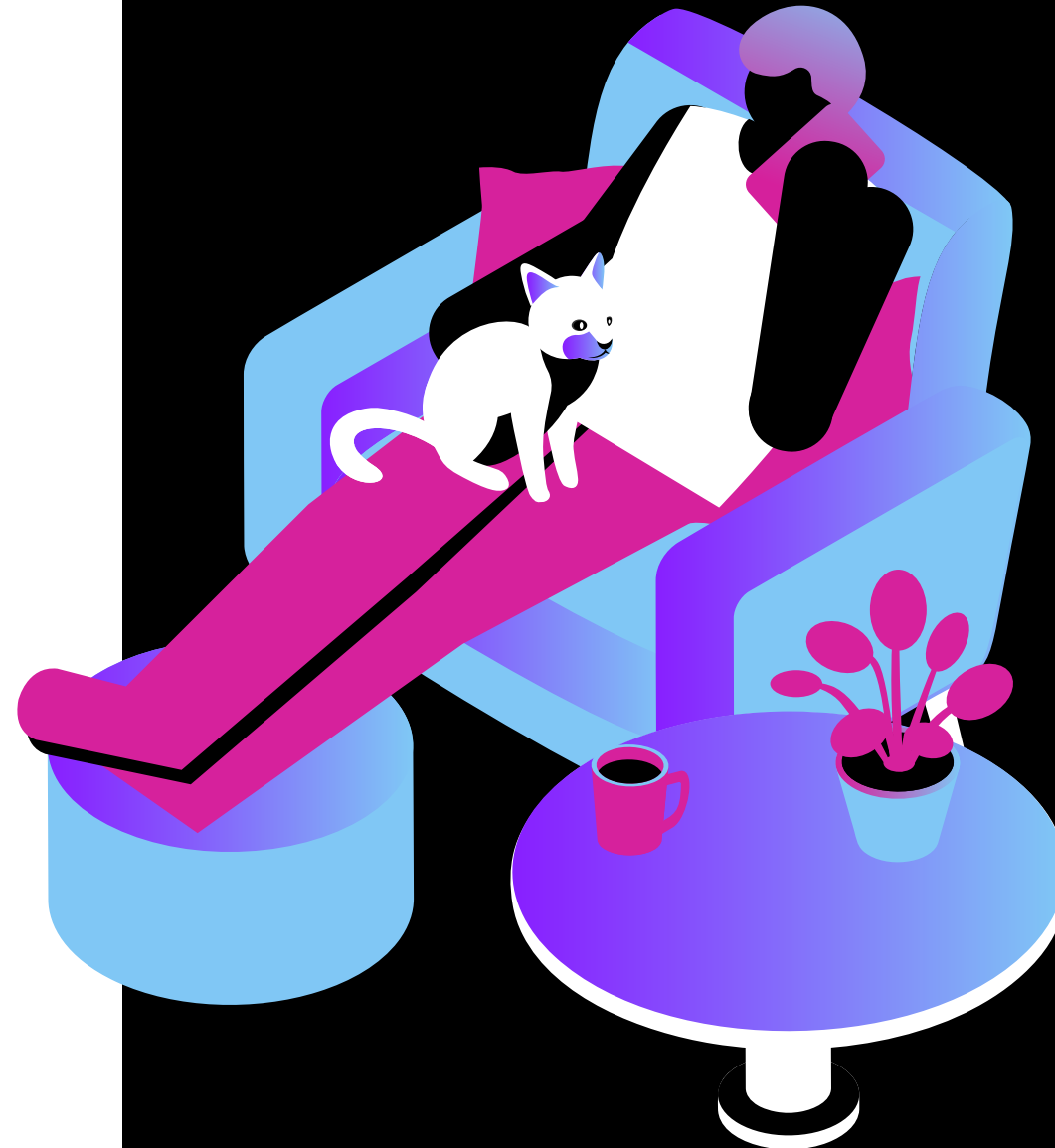
As far as changing customer needs are concerned, the challenge is to offer more choice in how they interact and achieve outcomes without making things more complex in the process.

Secondly, self-service, automation and proactive messaging must rapidly absorb the right type of inbound enquiries to reduce service costs and free up live assistance. Thereby ensuring customer experience expectations are met and loyalty is strengthened.

Can AI help more customers reach the right outcome faster with less effort? Might it be possible to promise that happy path for every customer?

Finally contact centers deserve better insight. Especially with the sea change happening with customers and colleagues in a recessionary era when customer experience must be delivered at significantly lower cost. Service leaders are not lacking data. Far from it. The issue is having too much.

Can AI be used to only surface the relevant and timely?

The short answer to all these questions is a qualified yes. We now live in an era when technology guided by service design principles can deliver those capabilities.
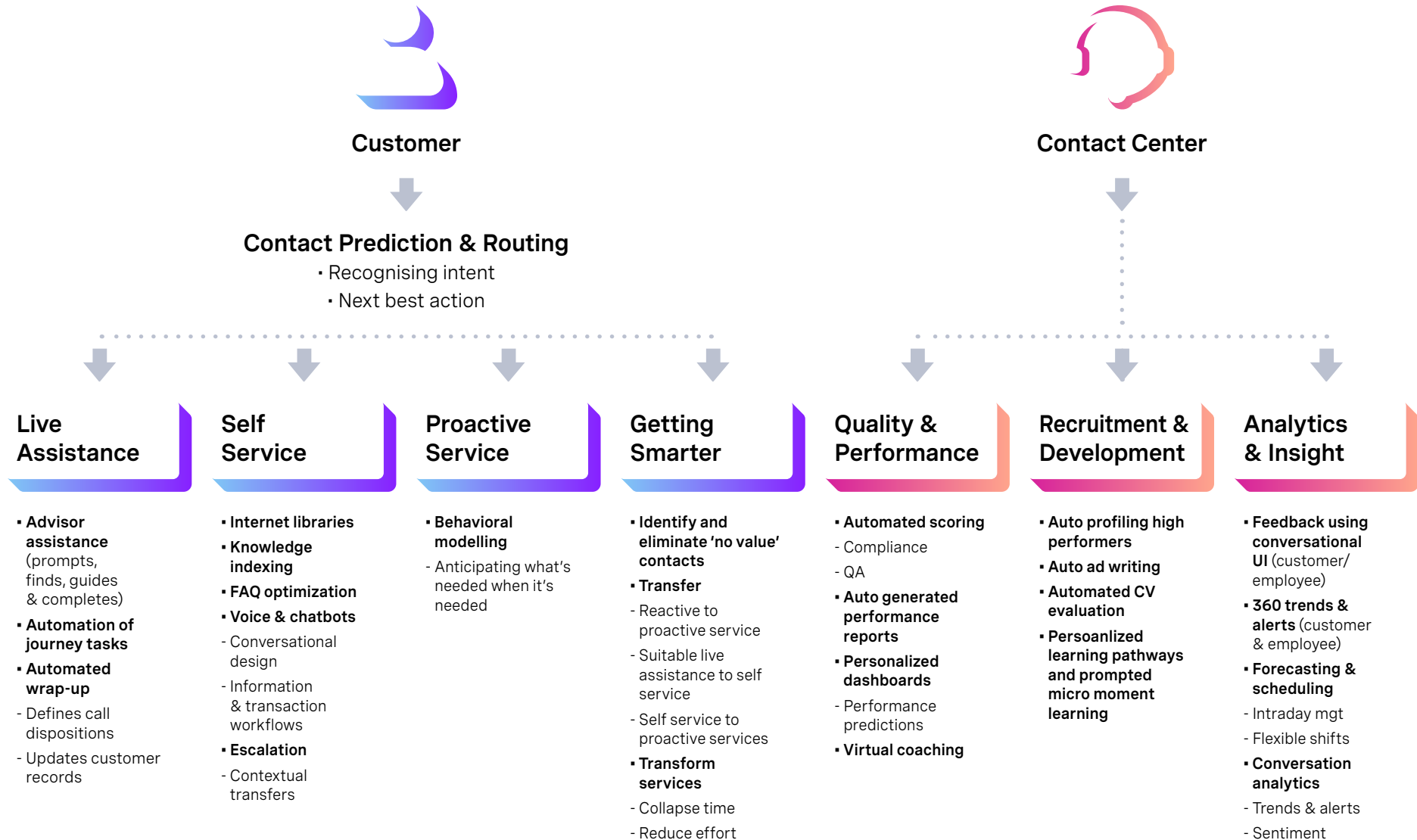
In terms of arrival, there are two major milestones along the way.

1 The first is foundational and a major deliverable in any digital first agenda. It is the ability to provide an ecosystem of data, knowledge, workflow, systems and communication wherever and whenever needed. This is the world of cloud services, micro service architecture and API connectivity. It connects the office to home workers. Customer to organization. Contact center to other teams. Securely, flexibly and at scale.

2 This provides the perfect platform to add AI technologies as the second milestone. Enabling predictive analytics, dynamic routing, digital labour, agent assist, adaptive self-service, proactive messaging and conversational insight.

The exciting point about AI is that it is not a point solution with limited impact. The range of opportunity it offers is all encompassing. And the speed at which these use cases are being developed and adopted continues to accelerate. Especially from the challenges thrown up by the pandemic.

The following page shows a summary of current and near-term use cases for contact center AI. The take home message is that it is being threaded throughout the daily life of contact centers.

New operating model

Customer

↓

Contact Prediction & Routing
· Recognising intent
· Next best action

Contact Center

Live Assistance

- **Advisor assistance** (prompts, finds, guides & completes)
- **Automation of journey tasks**
- **Automated wrap-up**
- Defines call dispositions
- Updates customer records

Self Service

- **Internet libraries**
- **Knowledge indexing**
- **FAQ optimization**
- **Voice & chatbots**
- Conversational design
- Information & transaction workflows
- **Escalation**
- Contextual transfers

Proactive Service

- **Behavioral modelling**
- Anticipating what's needed when it's needed

Getting Smarter

- **Identify and eliminate 'no value' contacts**
- **Transfer**
- Reactive to proactive service
- Suitable live assistance to self service
- Self service to proactive services
- **Transform services**
- Collapse time
- Reduce effort

Quality & Performance

- **Automated scoring**
- Compliance
- QA
- **Auto generated performance reports**
- **Personalized dashboards**
- Performance predictions
- **Virtual coaching**

Recruitment & Development

- **Auto profiling high performers**
- **Auto ad writing**
- **Automated CV evaluation**
- **Persoanlized learning pathways and prompted micro moment learning**

Analytics & Insight

- **Feedback using conversational UI** (customer/ employee)
- **360 trends & alerts** (customer & employee)
- **Forecasting & scheduling**
- Intraday mgt
- Flexible shifts
- **Conversation analytics**
- Trends & alerts
- Sentiment

Developing an AI driven contact center

A good way to tell the story of how and where AI changes life for customers, colleagues and operational leaders is to follow a customer through an imagined journey noting how it was, can be and soon will be.

Let's generate a mental map to help guide us.

The first major challenge in this journey is matching our customer to the right resource to deal with their need. And achieve that as effortlessly and efficiently as possible.

Once achieved the second major challenge is to deliver their desired outcome. Again, everyone wants that to happen without cognitive overload or waste of time.

The final challenge is being able to continuously improve how things are done as measured by customer experience, employee experience and commercial value from a business perspective.

So, with those in mind let us dive into the first challenge. One that still sinks most contact centers. Getting the customer to the right resource every time.

Understanding Needs and Recommended Route To Outcome

The essence of the challenge is to understand what the customer wants. The original model used people and operated as a switchboard. Intent was understood by a human being. However, with the volumes that contact centers attracted, this model was retired as being too expensive and unscalable.

IVR was developed to automate the process of finding out what the customer wanted. Unfortunately, this was not based on listening and understanding. It was a guessing game organized by listing multiple options nested within categories. Often with opaque navigation.

This was rarely intuitive for customers. And was far too unresponsive and costly in terms of operational management for brands. It was not even that good at matching need to the best resource. And resulted in transfers and low complexity needs still soaking up live assistant capacity.

There had to be a better way.

We are now full circle in the sense that AI allows us to return to the original ambition of understanding what customers want in a more natural conversational way.

One that can accommodate the way someone phrases their needs. Can engage in any modality: voice or text. Be available at whatever point of access customers start from: web site, app, voice interface. And finally, converse in pretty much any language they prefer.

In other words, our reinvented journey can now begin with customers simply saying or typing their question, and natural language finds the best way to assist them.

AI driven conversational self-service is based on the interplay of three core capabilities:

1 **Text to speech**

2 **Speech to text**

3 **Natural language**

The function of natural language is to identify intents and insights around call drivers and sentiments from unstructured text using machine learning. This requires the conversion of speech-based interactions into text using telephony optimized models to account for low quality voice, regardless of phrasing, vocabulary, or accents in many languages.

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Technology is now powerful enough to enable intent recognition while live customer conversations are being recorded. This is transformative. Current rates of recognition are impressive.

Early adopters are achieving 90% detection of customer intents within a matter of months.

The path to getting to these levels is increasingly automated using the self-learning capability that distinguishes AI from static programming.

Input to train customer intent engines might begin with existing training material from the vast libraries which the likes of Google and Salesforce can offer. This is then complimented by the real time stream of recorded customer conversations which provide ongoing tuning and new intent recognition through background analysis.

Intent recognition is phase one. With that now captured, decisions can be made to link a customer with the best resource. Intents that are classified as being typically low in complexity can be resolved through self-service. While the more complex, emotive and otherwise important interactions can be directed to live assistance.
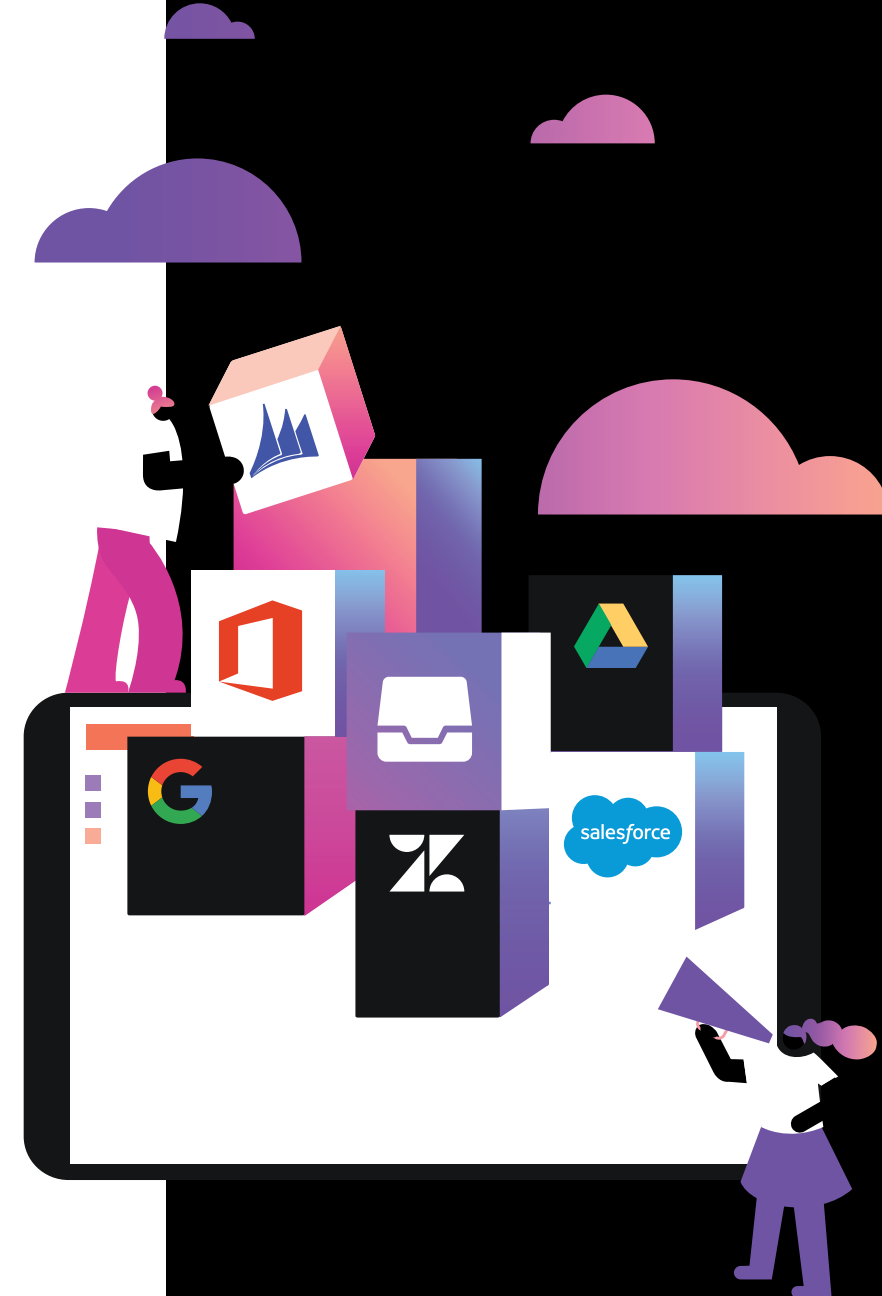
Further refinement on routing decisions can be achieved when more is known about the customer. For instance, a CRM feed might alert us to this being a VIP customer. Or one whose previous sentiment was low. Or the fact this is another interaction in a yet to be resolved enquiry. Each might need personalized treatment.

There are other feeds that can be integrated to enrich routing decisions. For instance, real time tracking of website behavior might identify customer frustration in which case live assistance is offered instead of the default decision to begin with a bot.

Routing is evolving from the lottery of next available resource by matching need with the fastest, lowest effort path to each customer's desired outcome.

As a final point, once intent is recognized, it can be sustained over multiple sessions and channels. This resolves many instances of customer frustration when asked to repeat themselves which undermines goodwill and adds to operational costs.

Maintaining context until the outcome is achieved also means customers only ever need to identify and authenticate themselves once. Even when they are transferred or decide to use another interaction channel.

Starting a customer journey is this new low effort way transforms the traditional approach to triage and routing and positions both customer and brand for a successful outcome.

Using Self Service to Deliver Outcomes

Moving onto the next stage of our journey let us assume an instance in which the customer intent is simple enough to be resolved through self-service. The 'always on' intent decoding of voice and text interactions provides conversational designers with a framework for developing structured dialogue.

Here are some examples from Google's self-service library that are ready to go based on existing deployments. They provide a benchmark for what can be expected to currently work and easily scale.

Car rental
Beginner

Start a new car rental reservation.

Healthcare claims
Beginner

File a new claim or check status of existing claims.

Payment arrangement
Intermediate

Set up a two installment payment arrangement, or extend payment due date.

Phone plan
Intermediate

Add to, change, and check your mobile carrier package.
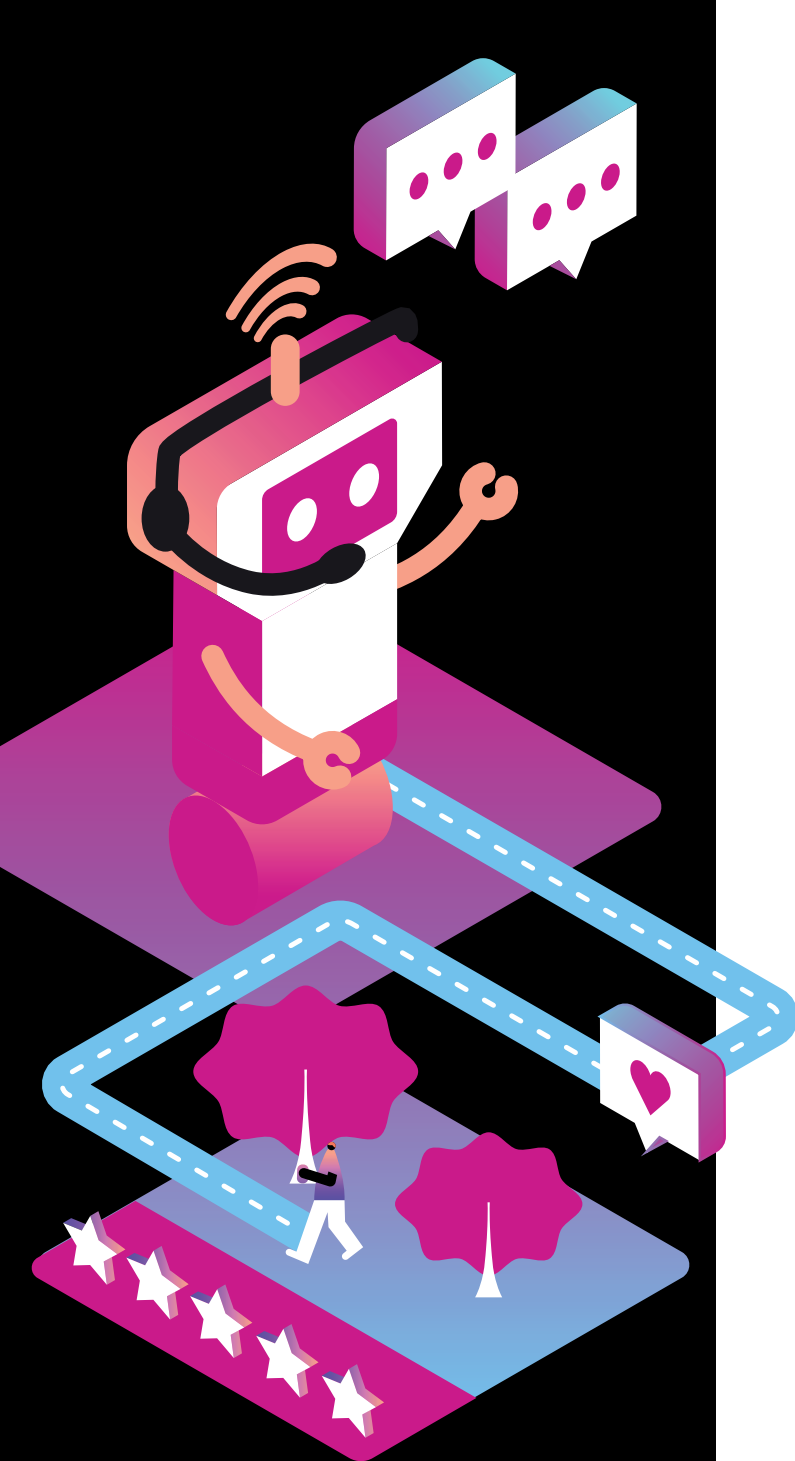
Retail
Intermediate

View products to purchase, complete returns, and manage an account.

Flights
Advanced

Airline agent for booking and changing tickets, finding flight information, requesting a refund.

Many of these transactional services assume integration into own and third-party systems and workflow so self-service solutions must offer a range of connectivity options to enable this.

Alternatively, when the primary self- service need is either information or education, integration with knowledge management resources becomes key. In these instances, AI helps make content more easily discoverable and shareable through proactive recommendations.

Over time, conversational designers can add more sophisticated pathways as the nuances of how customers discuss their needs become understood. For instance, service conversations can contain multiple topics as opposed to single intents. In which case they need to be managed and resolved with the conversation flow.

Sometimes an interaction will move beyond the scope of conversational AI. Either by straying into an unrecognized topic or because things become unexpectedly emotive or complex. In these instances, live assistance is introduced with the full context of the customer needs and conversational history passed across.

So what can be expected in terms of benefits?

Natural language based self service solutions can achieve between 20-23% call deflection from live assistance according to Forrester who recently modelled results from a cohort of early adopters.

Source: New Technology: The Projected Total Economic Impact™ Of Google Cloud Contact Center AI

In terms of customer experience, successful self-service that remains low effort and intuitive from the outset is always going to win positive feedback. The fact that customers have immediate 24x7 access and choice in how they want to engage (modality and device) reinforces the message they are being empowered to achieve outcomes on their own terms.

There are similar upsides for employees who can devote more of their time and skills to more challenging and rewarding conversations. Job satisfaction is nurtured.

Finally, the ability to meet unexpected spikes in customer demand via self-service and proactive messaging is critical during current times. Otherwise live assistance channels become flooded and responsiveness collapses.

For instance, disruption to travel and holiday plans has been unprecedented during 2020. So too has been the level of request from both consumers and businesses applying for payment holidays and supplemental income.

The ability to rapidly scale to meet unexpected demand outside the patterns of historic forecasting is essential in uncertain times.

Using Live Assistance to Deliver Outcomes

Certain intents or customer needs are best met with live assistance. Typically, these are when the human touch has greatest impact. When it is emotional, complex or likely to impact customer loyalty.

In these instances, AI can provide a similar support role. First by suggesting relevant articles, FAQ answers and relevant workflow based on real time intent recognition and the ability to predict the direction of the conversation.

Secondly AI helps by offering productivity tips. For instance, during chat sessions AI can suggest entire phrases or offer auto-completion prompts as the advisor is typing. This is especially useful when switching between multiple chat sessions.

Finally, AI tracks customer sentiment in real time and uses it as one of the triggers for escalation to live assistance.

Brands operating in regulated industries also benefit in that this approach can remove the risk of inexperienced advisors providing inaccurate information. Sales teams also benefit since this approach can surface the latest discount information, deals and special offers, which can be hard to keep track of as this information changes frequently.

The benefits are clear.

1. Conversations finish faster. The previously cited Forrester study concluded that average handle times reduced between 10 and 47 seconds per chat session.

2. Form filling happens faster with pre-populated customer data.

3. Timely access to relevant knowledge increases advisor expertise without needing extensive years of experience or training. Customer transfers are reduced as a result.

4. Onboarding of new starters is accelerated. Confidence is boosted taking on more complex calls with step by step assistance.

5. In the case of escalations, there is no need to start conversations again since any cross-channel history is visible.

6. Real time transcripts show security questions and answers so advisors can be confident who they are speaking to without needing to reauthenticate.

7. The relevance and accuracy of answers improve. First time resolution correspondingly rises.

8. The quality and consistency of written communication rises.

9. Post contact administration is reduced with the automation of call/chat dispositions which become more consistent, complete and granular as a result. Forrester quotes a 10 second saving in one use case from this automation.

10. Customer records and transactional systems are automatically updated.

The net effect is that advisors become more productive and have more time to concentrate on demanding customer needs. Job satisfaction rises. Customer experience improves. Cost to serve reduces.

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Using Insights for Operational and Strategic Change

There is tremendous value that can be extracted from customer conversations. Especially when natural language processing helps make sense of what happened, why it happened and what can be learnt.

Within the right analytics and reporting solution, AI can pinpoint the moments that must improve in journeys. Show advisors where conversations have worked or need new approaches. Uncover operational and behavioral trends far beyond traditional contact center metrics. And reveal what is uppermost in customers minds and alert leaders to new topics of concern.

It goes without saying that traditional approaches to quality and performance management or customer experience management both of which use sampled insight and often manual analysis are blown out of the water.

In Conclusion

AI is now embedded in the contact center industry and changing the way services are designed and delivered. 40% of contact center interactions will be fully automated by using AI, machine learning and self-service by 2023.

Source: Gartner, Forecast Analysis; Contact Centers Worldwide (April 2019)

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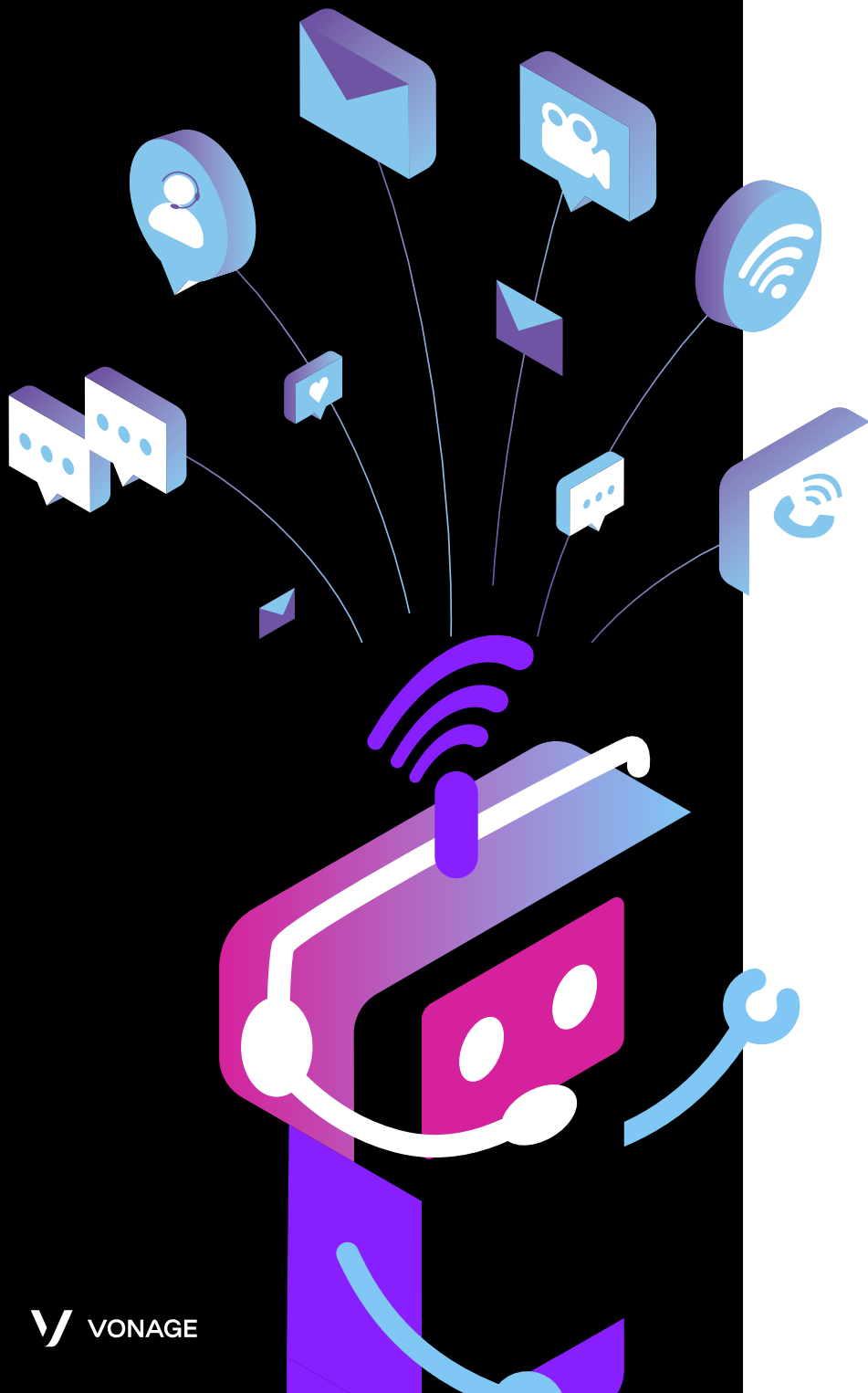
AI provides a framework in which to optimize any contact mix. Organizations can now embed natural conversational experiences into mobile and web applications, smart devices, bots, interactive voice response systems and messaging platforms. Live assistance can now be refocussed and optimized by making self service an effective service option.

Real time intent recognition provides a new basis for routing, self-service, escalation, live assistance, performance management, operational insight and decision making. It transforms the status quo.

In the context of unpredictable customer demands and the challenges of a distributed workforce, AI driven capability is providing much needed answers.

It also improves over time. Not just because of the ongoing self-learning that characterizes AI solutions. AI technology is still on a rapid development curve with ongoing improvement to the art of the possible. New breakthroughs can be expected. And to top it all, some of the most innovative AI brands are now fully focussed on customer service. And competition always spurs innovation.

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Here is a final insight into how the future of AI driven customer service looks. It comes from USAA; a US insurance and financial services/banking/fintech giant. They are famous for innovation and commitment to customer experience.

They discovered that COVID-19 increased the attractiveness of virtual claims using machine learning models able to assess vehicle damage based on digital images. This reduced lapsed time from claim to payment to just a few seconds in some cases. USAA's goal is to be nearly 100% touchless by 2022.

So, what does this mean for the human touch?

This is how Jim Syring, President, Property and Casualty sees their blended approach going forward.

"Our adjusters aren't going anywhere. Use of machine learning will enable claims teams to focus more deeply on problem solving, addressing complex claims and elevating service commitments.

There will always be a human element to the claims experience. Basic needs and transactions will be expected to occur instantly via technology, but the empathy and emotional connectivity humans provide will be increasingly important in more complex situations".

Thank you for reading. We hope this has helped define the value that AI offers. We are ready to help you on your AI contact center evolution.

About the Author

Martin Hill-Wilson is a long-standing member of the U.K. customer service community. He currently works independently under the Brainfood brand with a range of clients focused on customer-related strategy assignments. He also participates as conference speaker, workshop facilitator, and blogger in his role of passing on best practice and next generation thinking. Current topics include social customer service and the broader issues involved in becoming a social business.
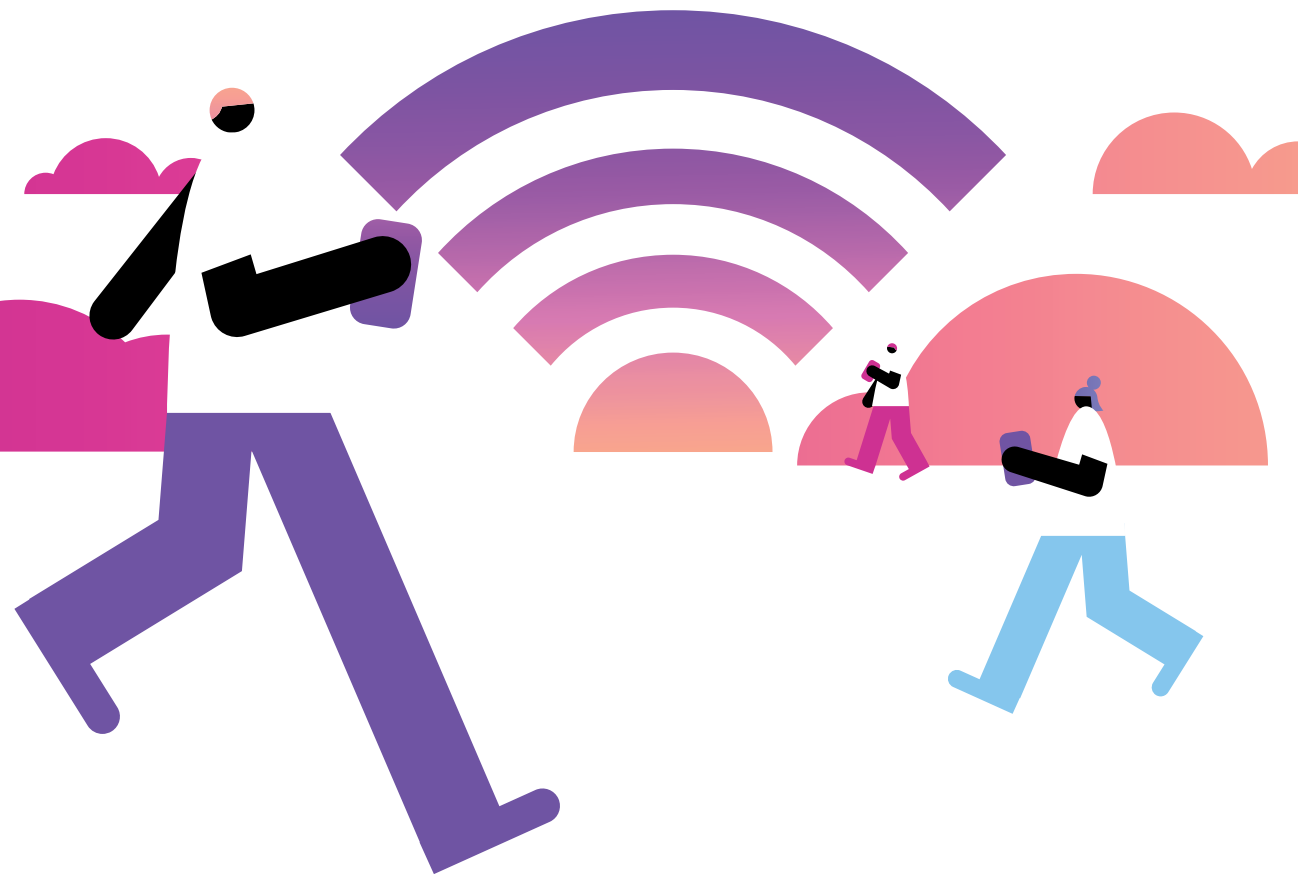
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