The Inner Circle Guide to Self-Service

Written by

CONTACTBABEL

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INTRODUCTION

Like so many other technology solutions in the customer contact arena, self-service started off as supporting a cost reduction strategy. DTMF IVR was beloved of the budget controllers and disliked by a large proportion of the customer base which it was meant to serve. Web self-service, with its success or otherwise being judged on the number of calls it avoided, existed in a vacuum, with the static knowledge base and FAQs becoming slowly more bloated and out of date, divorced entirely from the world of live customer contact.

The multichannel revolution in customer contact which we are witnessing is not just about the advent of social media, the mobile customer or the uptake in smartphones. Real improvements in self-service - both voice and web-based - are upon us today. While the traditional benefits of cost reduction is still very much part of the self-service tool box, there is now a great and growing emphasis placed on gathering information about these interactions to feed into voice of the customer programs; businesses are seizing upon the opportunity to display IVR menus visually; virtual assistants not only encourage customers to interact with them using natural language, but are also able to provide tightly-aligned and relevant marketing offers to them at the same time that they are providing the single correct answer to the customer's query.

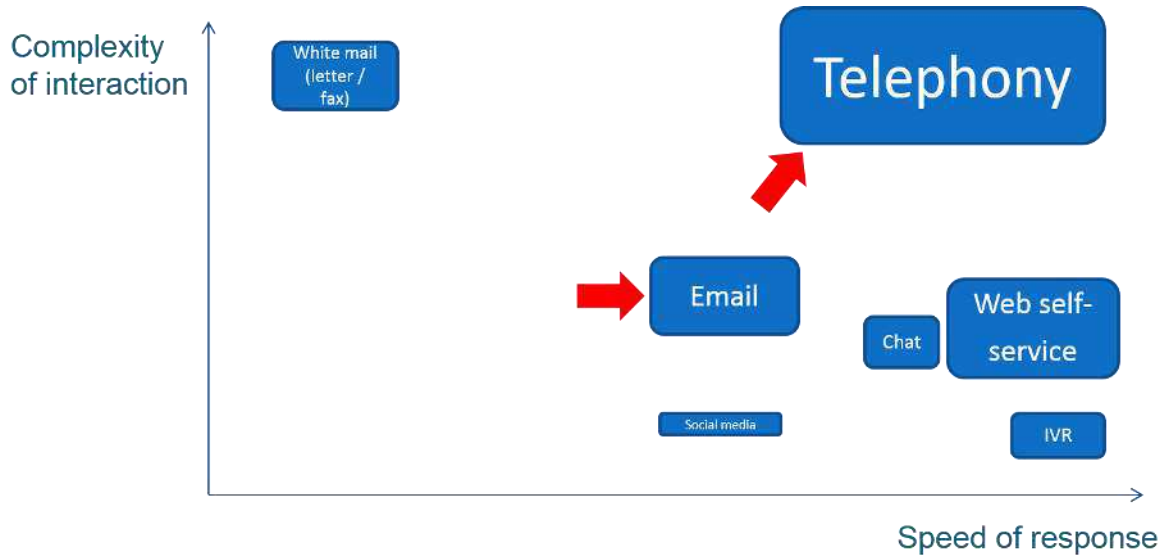
As with so much else in the customer contact space, boundaries are blurring. Nowhere is this better seen than in the possibility of escalating a self-service session seamlessly to a live agent as required, passing along information personal to the customer and the context of the query, and feeding the eventual correct response back into the knowledge base so that the next customer with a similar query will benefit from what has gone before.

THE CUSTOMER CONTACT MIX TODAY

The past teaches us that it is the consumers that make the decision on which communication methods will be successfully used, not the businesses. If the channel proposed by businesses is suitable for the type of interaction, then it will succeed - otherwise, it will fail. Predicting which channels will be used in future, and by whom, will give businesses a better chance to deliver high-quality service at the right points, while reducing cost where possible. Getting it wrong is expensive and damaging to the brand.

Over 90% of UK contact centres deal with a significant proportion of non-voice interactions, such as email or web chat, as well as telephony. The Internet – as a channel for self-service, sales and increasingly person-to-person contact – is an integral part of many businesses' customer contact strategy, with the advent of social media and uptake of mobile devices throwing other elements into the mix.

Figure 1: Inbound contact channels: popularity, suitability and speed of response



The preceding chart gives an idea of where things stand today. The size of the boxes gives an indication of the relative importance of major channels, by volume. Each channel can handle interactions of certain complexity, and some are far quicker to provide a response than others. The red arrows indicate how the phone and email channels have altered their capabilities within the last few years.

White mail: suited to issues of great complexity and importance, due to the ability to establish a paper trail, found particularly in industries that are contract-driven, for example finance and insurance. Response times are, of course, relatively long.

Telephony: on average, by far the largest inbound interaction channel. It has ubiquity, is a real-time two-way channel covering many different topics if necessary, and if queue length is reasonable, has

one of the quickest speed of responses of any channel, despite popular perceptions. Since the widespread uptake of self-service, telephony is in the process of reinventing itself as the channel of choice for lengthy, important or complex interactions. For many businesses, contact centre agents have actually become 'experts', without this having being planned.

Email: despite the inherent difficulty of establishing a real-time, two-way conversation via this medium, email volumes have grown dramatically in the past few years, allowing customers to go into considerable detail which is particularly valued in issues such as complaints, where the customer may have information to impart which it is difficult to put across on a phone conversation. The red arrow in the diagram shows that email response times have improved considerably, but it is still by no means the quickest channel, and is perhaps more suitable for outbound communication.

Web self-service: this channel has grown enormously in the past few years, to some extent at the expense of telephony self-service. The visual medium provides customers with a far more flexible experience, and has traditionally been a very quick channel to use, especially for simple FAQ queries. (As there are no ContactBabel statistics available on the volume of web self-service interactions vs. telephony interactions, the relative size of the box should be ignored in this case).

IVR: is still widely available and widely used. DTMF (touchtone) IVR is most useful for handling the simplest of transactions, such as balance-checking or providing a meter reading, with automated speech recognition being able to offer a greater depth of functionality.

Web chat: this former niche channel is beginning to establish itself, particularly in retail-based environments. As telephony agents provide a back-up to IVR, web chat may offer the same capabilities to support a web self-service session which cannot be fulfilled successfully. It provides a similar speed of response to the phone channel, and there is no reason – apart from the lack of confidence that comes from unfamiliarity – why customer authentication cannot take place which would allow access to a wider level of service than is currently the case. Cobrowsing can be seen as a very closely related to channel to web chat, with similar capabilities and uptake which will be closely tied to that of web chat.

Social media: as can be seen by the tiny size of the box in the preceding chart, social media does not yet have significant volumes of interactions for most companies. However it has an very high profile both outside and within the organisation, and has grabbed the attention of senior executives far more than the traditional contact centre has ever managed to do. As such, there is a disproportionate amount of interest being shown in social media as a customer contact channel, due largely to the damaging nature of a customer service failure being made extremely public. It should also be noted that there is a very significant volume of interactions within customer communities, user forums and on a wider peer-to-peer basis, which is not shown here.

Despite the much lower penetration rates, it is also worth mentioning the presence of **virtual worlds, avatars, kiosks** and **video agents** in the customer contact mix as these are options which certain businesses may use to target the Internet generation as well as more technically-literate existing customers.

Figure 2: Multimedia channels

Channel	Current use	Drivers	Inhibitors	Proportion of interactions
Email	Widely offered for inbound and outbound service by all sectors, especially IT and retail.	Email is widely-used and accepted by customers. As a non-real-time application, businesses can deal with emails in slack periods. Written format is suited to long and complex answers. Templatised responses offer cost savings.	Without investment in email systems, email is no cheaper to handle than a phone call. Service levels are often poor or inconsistent, leading to customer dissatisfaction. Any interaction that requires security is unsuitable for email checks.	IT and retail often highest. Insurance and finance usually low. On average, the contact centre industry has 10-15% of inbound interactions as email.
Self-service	Both voice and web self-service are widely used, the former either through DTMF IVR or speech recognition, which handles simple queries and transactions.	Variable costs of using self-service are very low (i.e. once the system is set-up correctly, incremental cost per use is negligible), making it suitable for high-volume, simple interactions, avoiding the costs of these calls being handled by agents. Allows 24/7 service at low cost.	Excessively pushing the use of self-service, & badly-designed IVR menus can mean that callers feel frustrated & alienated. The use of natural language self-service is as widespread, & older DTMF-based applications may be inflexible & unpopular.	c.3-6% of inbound contact centre interactions are dealt with by IVR self-service, often much higher in finance and utilities sectors. Movement to web self-service is growing hugely.
SMS	Often used for marketing messages, SMS can also provide proactive customer service, such as balance threshold alerts and appointment reminders.	SMS is a cheap channel, with texts costing less than 10p each. UK mobile phone penetration is greater than 100%, and SMS senders are very likely to have their messages read.	The same rules against email spam apply to SMS, so customers must give their permission to be sent SMS. Inbound SMS is like email, in that security cannot be established, and it is not a real time application.	Around half of businesses currently use SMS to communicate with customers, usually for marketing purposes.
Web chat / instant messaging	Growing as specific applications for its use emerge. Penetration rate 30-40% and growing rapidly.	Real-time nature of web chat means it is akin to a voice conversation in immediacy. It is possible to ask security questions through web chat, although it is debatable whether the customer will feel happy about passing on this information over the web. Multiple concurrent web chat sessions can be run, cutting cost per interaction. Younger generation is used to messaging.	Web chat may be too alien to the older generation who may feel pressured by the sudden appearance of a chat initiation. It is also an expensive option, and may encourage people to ask unnecessary questions that they would otherwise use the website to find the answer to.	1-2% of interactions into UK contact centres, but potential to grow massively, especially in retail.

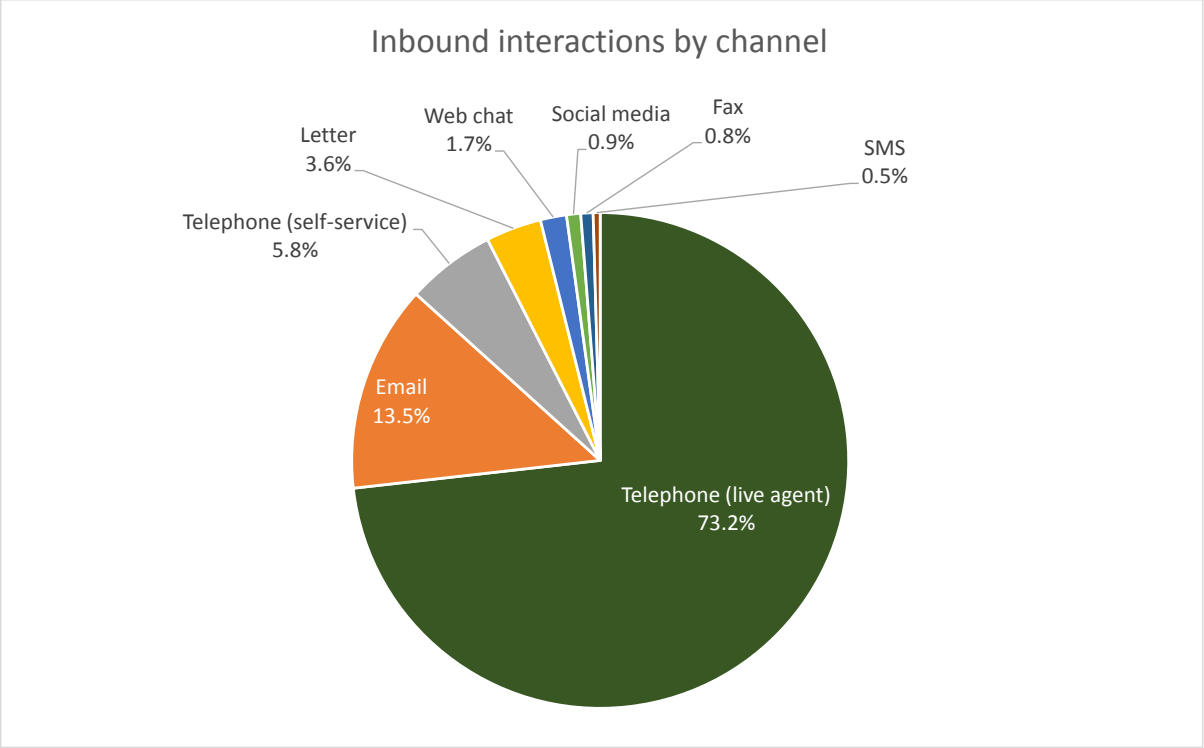
Channel	Current use	Drivers	Inhibitors	Proportion of interactions
Video agents	Limited current use. Can be delivered through PC, kiosk or interactive digital TV.	Eye contact is critical for establishing trust and 60% of the communication process is visual. Opportunities for demonstrating product features. 'Canned' video can be very useful for supporting the live and self-service experience.	Customers may prefer the impersonality of telephony. Agents will need training in visual presentation.	Not known, although very low.
Virtual worlds	Second Life is an online, virtual world populated by avatars, which interact with each other and with real businesses, that can use Second Life as a venue for recruitment fairs, a branding opportunity, a sales channel for both real and virtual commodities and also a provider of customer service.	Waiting in a Second Life office should be a less boring experience than holding for a contact centre agent, with residents able to wander around the world, watch videos, read information or talk to other people while waiting their turn. The added visual capability will have the same advantages of video agents.	Avatars are not yet realistic or life-like, limiting non-verbal communication. Most people are unaware of Second Life and it is far quicker to pick up the phone.	Millions of Second Life users, but 'real' business fairly limited. Increasingly used for intra-company communications.
Web collaboration	Very limited. Page-pushing and joint form-filling more used in the US, but rarely in the UK.	Allowing an agent to work alongside a customer's desktop can give more personal and effective assistance.	Very expensive per session. Not widely understood by customers.	Still very low in the UK.
Kiosks	Supermarkets, cinemas, banks, fast-food outlets and train stations have touch-screen terminals which can deal with financial transactions, issuing tickets, taking orders and scanning items.	Low-cost, effectively another variant of self-service, with a possible option to move to a video agent if required, although privacy issues are present. It takes an average of $3 for an agent to check-in an airline traveller, but only 14c each with a kiosk (source: Forrester Research).	Possible mechanical breakdown. Non-private. Limited functionality.	Not known, although growing, especially in the mobile phone support sub-sector as well as financial services in remoter areas of the US, for example.

Channel	Current use	Drivers	Inhibitors	Proportion of interactions
Avatars	An avatar is a physical representation of an individual in cyberspace. Rarely used in commercial environments, avatars are usually found in online games and virtual worlds. Some businesses are using avatars to act as the front-end for self-service applications, offering customers a human-like interface with which to carry out self-service operations.	Online customers can move their avatars around a website in the same way they would move around a shop, and ask sales avatars for help. If avatars were physically similar to their owners, businesses could use web collaboration to show exactly how the customer would look in an item of clothing, or behind the wheel of a car.	Customer service avatars require 'anthropomorphous software' to be able to decipher unformatted text and natural language, read and write text and display some level of behaviour that might be seen as personality and intelligence - it needs to be seen as being more than just an attractive way to do the same limited things.	Not known, although very low.
Social media	Twitter, Facebook, Linked-In, YouTube are all becoming very popular for businesses in terms of customer support as well as marketing.	Personal social engagement (e.g. Facebook, Twitter) is spilling into the corporate world. Originally used by businesses as outbound marketing / brand awareness, has developed into de facto inbound customer service.	No security or ID verification process means not all interactions are suitable for social media. High risk of negative PR associated with this channel may lead to over-resourcing at the expense of others.	Less than 1%, but seen by senior management as far more important than volumes suggest.

The reality of customer contact for most UK businesses is that it is predominantly phone-based, particularly for those in B2C environments. However, with more than 1 in 4 transactions coming from alternative sources, the voice-only 'call' centre is pretty much a thing of the past.

Longer-term historical comparisons show that email is still growing and that the gentle decline in telephony is certainly still present. New channels such as web chat and social media continue to grow strongly - albeit from a very low base - and telephony self-service is still maintaining its previous importance in the face of intense competition from web self-service delivered via PC, tablet or mobile device.

Figure 3: Inbound interactions by channel



Telephony self-service – especially DTMF IVR - is strongest in the utilities and transport & travel sectors, as well as public sector and TMT (technology, media and telecoms). Web chat is developing a presence in retail (so as to close online sales).

Figure 4: Inbound interactions by channel, by vertical market, 2013

Vertical market	FS	HS	INS	MAN	OS	PS	RD	SVCS	TMT	TT	UTILS	Average
Telephone (agent)	84%	88%	82%	64%	78%	74%	61%	69%	65%	57%	76%	**73.0%**
Email	8%	8%	7%	23%	13%	13%	29%	16%	23%	12%	6%	**15.4%**
Letter	3%	2%	5%	4%	3%	3%	1%	7%	2%	6%	7%	**3.6%**
Telephone (self-service)	3%	1%	0%	0%	3%	8%	2%	2%	6%	9%	9%	**3.2%**
Fax	1%	0%	2%	8%	1%	1%	2%	1%	0%	4%	0%	**1.6%**
Web chat	0%	0%	0%	1%	2%	0%	4%	2%	2%	3%	1%	**1.3%**
Other	1%	0%	2%	0%	1%	2%	0%	0%	0%	5%	0%	**0.7%**
Social media	0%	0%	1%	1%	0%	0%	1%	1%	1%	2%	0%	**0.7%**
SMS	0%	0%	0%	0%	1%	0%	0%	2%	0%	3%	1%	**0.5%**

NB: vertical market key: FS – Finance; HS – Housing; INS – Insurance; MAN – Manufacturing; OS – Outsourcing; PS – Public Sector; RD – Retail & Distribution; SVCS – Services; TMT – Technology, Media & Telecoms; TT – Transport & Travel; UTILS - Utilities

END-USER QUESTION #1: HOW DO WE ENGAGE TEAM MEMBERS WHO ARE CONCERNED THAT SELF-SERVICE IS BEING USED TO REPLACE THEIR JOBS?

The implementation of a good Knowledge Management system will empower team members to be able to engage with customers on a wide range of issues, increasing employee productivity by considerably reducing the amount of time for an employee to raise a ticket and work through the issue with the customer – this redundant time can be spent in actually fixing the issue.

With any knowledge base it needs to be kept up-to-date, therefore will always be a requirement to edit, revise or add content. This role(s) could be handled in a number of different ways depending on the subjects and nature of the business; have a dedicated knowledge author / manager to add new information / processes into the knowledge base or you could split the expert content creation across a different teams or agents. Allowing the agent role to become of more value has proved invaluable for a number of our clients. Therefore there is a twofold benefit, the agent can add value to the organisation and become responsible for informing others of new practises, procedures and information and is seen as a more valuable member of the organisation rather than just being an 'Agent'!

DRIVERS FOR SELF-SERVICE

Although it may seem difficult to believe for beleaguered customer contact professionals who are juggling service levels across five or six different channels, the multichannel revolution has only just begun. At the most basic level, customers will choose to speak to a business through the particular channel which they believe best suits their requirements, which are usually quite generic regardless of the actual query. Specifically, customers look for service experiences which are:

- Effective
- Quick
- Painless
- Cheap.

If a channel does not meet these requirements to a significant extent, it is unlikely to succeed.

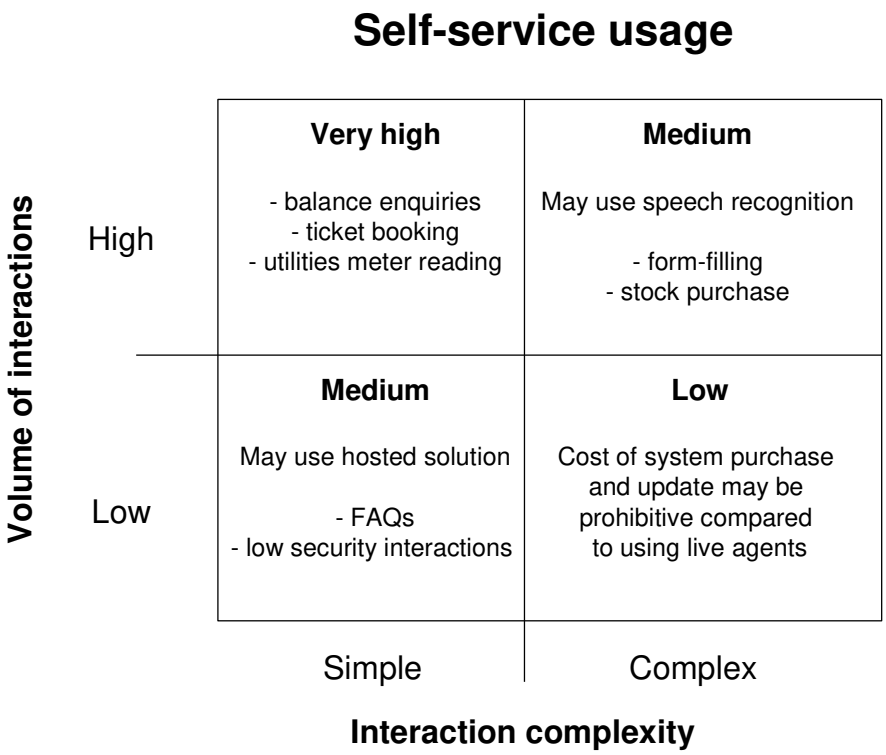
The majority of customer interactions fall into one of two categories: those that are purely transactional and those that require dialogue (interactional):

- **Transactional communications**, such as balance enquiries and travel information, require access to highly-structured business information, and non-automated transactions can require an agent to act simply as an 'organic interface' between the back office systems and the customer. Such communications may be dealt with effectively by self-service, whether through DTMF IVR, speech recognition or web-based self-service options which offer the speed and flexibility of visual information. By putting an automated front-end on top of an existing back-office process, cost per transaction is reduced to pennies rather than pounds. Most customers value the speed of the self-service transaction compared to the alternatives (telephony, face-to-face, letter, etc.), so this works well for both businesses and customers. However, when customers have questions that require help in order to complete a transaction, they need to be able to get the answers, either by escalation to an agent (along with the context and history of what they've been trying to do), and/or through access to a company's knowledge base.

- **Interactional communications** - such as technical helpdesks, complex or multiple enquiries or where the customer requires reassurance and confirmation - require actual dialogue and discussion between the customer and the business's representative. It is important to note that it is not solely the level of complexity that drives a customer to choose live contact over automation, but also the state of mind of the customer at that time. For example, a customer may value reassurance rather than speed in certain circumstances (e.g. wanting to check train times to go to a wedding, or making an important hospital appointment). In such cases, not allowing the customer to interact with a live agent will have a considerable negative impact on their opinion of the organisation, potentially far outweighing the extra cost that is associated with a single instance of providing a person to talk with, rather than a self-service option. Additionally, some customers simply prefer speaking to another person and even the best self-service application is anathema to them.

Propensity to offer self-service can be seen as a function of the complexity and volume of interactions.

Figure 5: The effect of complexity and volume on the use of self-service



Put simply, the diagram above shows that the greater the number of simple interactions a company deals with, the more likely it is that it can benefit from implementing self-service.

- **Large** volumes of **simple** requests from customers (and who use agents simply as a means of reading the information from a screen – little more than an 'organic interface') should have implemented self-service by now. Historically, there were estimates that 70% of calls to helpdesks were password reset requests, which self-service was able to handle.

- Where businesses only deal in a relatively **small** number of **complex** interactions, the cost of implementing a sophisticated, probably speech-enabled self-service application – and keeping the knowledge base up-to-date – may be greater than any associated salary cost reduction.

- Businesses having a **small** number of **simple** interactions now have the option to have their voice self-service functionality hosted in the cloud, paying perhaps only for the number of times that it is used. This model allows self-service functionality at a fraction of the cost of owning and maintaining a premises-based system.

- Businesses which deal with **large** numbers of **complex** interactions are building and using some of the most interesting and potentially beneficial self-service applications. Examples include filling in insurance forms to get a quote – a lengthy and time-consuming business, which can last for tens of minutes, costing the business a great deal of money. Moving this to self-service can save huge amounts of money, as an agent may only need to be brought in to close the sale or clarify finer points of the policy. Stock purchase is another classic example of this: sophisticated users can buy and sell stocks as quickly as they could by talking to a human agent by communicating via speech recognition directly with a business's applications and databases. Much of this type of functionality is being moved to a visual self-service channel, such as web, as it is quicker for the customer to read, although speech is still quicker than typing.

Self-service is found across most industries - there is often at least one function that self-service is suitable for, regardless of what a company actually does - but some sectors use it far more than others. Some businesses are finding that web self-service is more popular with their customers, especially with the uptake of smartphones which can provide customer services apps and allow web browsing on the move.

Figure 6: Some functions for self-service, by vertical market

Self-service activity	Typical sector offering this form of self-service
Problem reporting and resolution	IT helpdesk
Check balance information	Banking, mobile telecoms
Product information	Retail, finance, telecoms
Online registration and form-filling	Any
Order entry	Retail, travel
Balance enquiry	Banking, credit cards
Access to sensitive or private information	Medical (e.g. test results), finance
Bill reminders (outbound)	Utilities, retail, telecoms
Meter reading	Utilities
Dealer or store location enquiries	Car sales, retail
Ticket booking	Cinemas, other entertainment
Status, delivery and punctuality checks	Retail (esp. online), IT helpdesk, transportation
Bill payments	Subscription services, utilities, credit card
Brochure request	Travel, retail, estate agent
Password reset	Finance, IT

As will be seen later, self-service can provide huge cost savings to businesses. Some organisations, having seen this, perhaps got overexcited about the potential for cost savings, and implemented self-service too enthusiastically and sometimes inappropriately. While it may be self-evident to many, the large number of poor customer experiences over the years with self-service would seem to suggest that this is still an issue.

When considering the suitability of self-service, businesses should consider:

- whether the average complexity of customers' requirements make self-service suitable
- the proportion of interactions where customers actually have multiple queries, which may be better answered by agents, even if they are relatively easy
- what the customer demographic looks like. Conventional wisdom states that younger people are happy to try self-service, whereas older people prefer to speak to a live agent
- for businesses where agents' average tenure is relatively short, and who as a consequence may not have deep experience or knowledge, the use of a knowledge base accessible to groups of both customers and agents will reduce training time, improve consistency of information and aid first contact resolution rates
- businesses should recognise that even for quite simple, transactional queries, customers may sometimes have a deeper emotional requirements to be reassured that they have been given the right information (for example, checking train times to go to an important event; making sure the tax forms have been filled in correctly and received on time; or receiving confirmation that a birthday present will arrive with the recipient before the specified date).

Businesses should track the effectiveness of the self-service solution by comparing the number of self-service requests with the number of escalation requests for further agent assistance. If analysis of this ratio can be done at a granular level - for example, by product type, customer profile or other easily identified group - it will be possible to see which parts of the self-service solution work most effectively, and which need fine tuning, or indeed a complete overhaul. Understanding how knowledge content is accessed is also vital information, as it may be that certain information is requested far more often from mobile devices then PCs, meaning that businesses may want to reconsider the presentation of such information to customers, for example.

Once businesses have decided upon, and invested in their self-service strategy, it is of equal importance to publicise the self-service options available to the customer base, and also to encourage agents to use, update, and improve the knowledge base accordingly.

Drivers for self-service can be segmented into three wide categories: cost reduction for the business, convenience for the customer, and a wider opportunity to offer powerful and rich functionality as a result of the prevalence of new consumer devices, such as smartphones.

DRIVERS: COST AND REVENUE

it is widely acknowledged, by businesses, vendors and customers, that one of the main purposes of self-service is to cut costs for the business. While the table below certainly seems to show this, it should be treated with caution, as costs per interaction for new channels such as email and web chat have been taken from only a relatively small number of respondents who felt confident enough to answer this question, and whose responses varied enormously. What can be taken from these statistics with a certain level of confidence, is that a self-service IVR session is far cheaper than any interaction type which requires live agent input, regardless of whether this is via a website or through a phone.

Figure 7: Estimated cost per inbound interaction

	Live telephone call	IVR session	Email	Web chat session
Mean average	£3.87	£0.65	£3.70	£3.00

When considering the cost per interaction of a web self-service request, such as searching an FAQ database, incremental cost becomes negligible. However, the time and effort - both from an initial and ongoing basis - to keep any knowledge base up-to-date and accurate, is anything other than negligible. With the proliferation of channels and devices, this effort can be seen to be shared over all of these new channels, as much, if not all of the knowledge, is accessible by customers and agents regardless of channel or device.

As will be seen later in the report, open standards enable businesses to personalise and contextualise self-service sessions, which allows the tailoring of responses and potential commercial offers to customers, without having to involve a live agent. This value-added approach offers a very low cost method of developing cross-selling and up-selling strategies, which is of huge interest and benefit to organisations.

END-USER QUESTION #2: HOW DO WE SHOW TO OUR BOARD THAT SELF-SERVICE IS MORE THAN JUST 'NICE TO HAVE'? WHAT METRICS SHOULD WE BE FOCUSING UPON IMPROVING?

This should focus on a combination of quantifiable statistics such as call deflection rates, speed to resolution and escalation rates combined with customer satisfaction surveys. Self-service is not just good for business but good for customers too – more and more people expect to be able to receive excellent customer service, without having to pick up a phone. It adds immense value to a business proposition by reducing costs, improving employee productivity and ensuring superior return on investment, whilst the customer or client can find the answer to their questions when they need to.

DRIVERS: CUSTOMER DEMAND

Successful channel uptake is generally an iterative process. Businesses introduce a channel (usually based upon it being cheaper to support than the incumbent channels), and customers trial it. If it works for all concerned, it can be deemed successful. However, it has been more likely that customers trial it and reject it, either vehemently or simply by reverting to the existing, well-known methods of contact. In such cases, businesses have to consider whether to drop the channel quietly or amend it so that it meets the needs of the customer, who will then retry it and make their decision accordingly.

Some of the key features that customers look for in a channel include:

- **The perceived effectiveness of the channel:** customers contact a business because they want something done. Feeling satisfied that their request has been taken care of is a vital ingredient to this – many contact centres still get calls asking if they have acted upon a customer's email – and the reassurance provided by a real-time channel that an issue has been dealt appropriately with should not be underestimated. Many businesses now look to leverage their email or SMS functionality to send out a cheap outbound confirmation once a successful self-service transaction has taken place.

- **Channel availability:** one of the advantages of telephony has been its ubiquity. Almost every home has a telephone, and the wide uptake of mobile telephony has meant that the telephone has near-universal penetration. Of course, the rise of the cheap computer and the popularity of smart devices now means that the telephone is under serious challenge in the availability stakes. Self-service is by its very nature a 24×7 channel, which is a major advantage. However, if escalation to a live agent is required, this may not always be possible at antisocial hours.

- **Ease of use:** familiarity also comes into this. Although it may seem as though most people are comfortable using a phone or computer, some poorly-designed IVR or speech recognition systems can make life more difficult than customers want. Even after many years of use, customers can still be unsure about just how much a particular speech recognition system understands, may be irritated by some systems' propensity to repeat back everything that is said to it, or are unsure if they have to wait until the speech recognition system has finished its spiel before being able to respond themselves.

- **Low cost of use:** a particular issue for some people, with excessive amounts of time spent on hold in a queue costing a significant amount of money. In such cases a freephone number leading to a IVR self-service system may be welcomed, and of course there is no incremental cost to the customer in using web self-service either.

- **Painlessness:** a customer's subjective view on how difficult and 'painful' the overall customer interaction experience has been, including the requirement for any follow-up interactions. There have been numerous studies done over many years about customers gripes towards IVR systems, in particular poorly-designed IVR menu structures, popularly known as 'IVR Hell'. There is a great deal of focus being placed upon the "Customer Effort" required to deal with businesses, which is another excellent indication that the movement towards true customer-centricity is continuing within the industry.

- **Speed of conclusion:** this refers to the immediacy of response and the overall resolution time, including the need for any follow-up work, or the wait-time to get an answer. Perhaps the greatest benefit to the customer of self-service, regardless of the channel or device from which it is accessed, is the fact that there is never any queue to wait in before being attended to.

Taking these customer requirements into account, it is clear to see that self-service can provide the customer with all that they want in many cases, especially for more simple, transactional communications. Bearing in mind that self-service is far cheaper for the business as well, it seems self-evident that self-service still has huge potential to grow.

The major, and continuing issue is to improve the customer experience, and the increased use of personalisation, the ability to escalate a query quickly and with context (moving between channels to live agents if necessary), and increased customer familiarity with self-service will continue to drive this channel forwards.

DRIVERS: CHANGING CHANNELS & DEVICES

Customers are being encouraged to experiment with alternative channels due to the prevalence of new and exciting devices, such as the smartphone, tablets, smartwatches (and other devices), Google Glass, with even Bluetooth-enabled voice recognition being available within many cars, meaning that customers can choose to contact a business almost anywhere, at any time. As there are so many different channels available on a single device, it is possible to view a smartphone as a channel in itself. Certainly, customers do not differentiate as much between channels when using a smartphone device, as everything – phone, email, service app, website, video calls, photos, SMS – is all in the same place.

Recent estimates suggest that around 60% of UK mobile phone users have smartphones.[1] One of the results of smartphone uptake is that there are a decreased number of landlines in the home, which means that a larger number of inbound calls are actually coming from mobile devices, with UK businesses estimating that over 1 in 3 inbound calls now comes from a mobile device. This means that businesses are themselves more likely to be able to switch channels if appropriate: for example, an agent can now say within a conversation that they will send an SMS message to a customer with a link to an appropriate website: it is not only the customer that has the option to choose the most appropriate channel to their needs.

More information on the role of the mobile channel in self-service strategy can be found later in the report.

[1] http://www.emarketer.com/Article/Nearly-Half-of-UK-Consumers-Will-Use-Smartphones-This-Year/1009956

THE KNOWLEDGE BASE

Probably the most central and critical element to a company's self-service capability is the knowledge base, which is vital to the accuracy and consistency of the self-service experience for both agent and customer across channels.

For many organisations, a knowledge base started off as a list of useful documents and files, which quickly grew into a wider, less coherent collection of information sources, requiring increased levels of expert management, amendments, editing, and deletion. However, the resources required to keep these knowledge bases up-to-date are very scarce, as the people within the business that have the capabilities and expertise to do so also have their own jobs to do. Very quickly, what started off as a useful and highly-tailored information resource has mushroomed into an expensive, out-of-date and increasingly less-useful collection of information of wildly-varying quality.

Organisations that wish to create a knowledge management system for the first time, or to make swingeing changes to their existing knowledge base, must accept that there will probably be a significant upfront cost in terms of time and money:

- In the planning and assessment stage, determine what a successful knowledge base implementation will look like, including the specific reasons and goals that you are aiming to achieve (for example a specific figure for call avoidance)

- It is vital to understand where knowledge is held and sourced within your organisation, and to gain buy-in from all relevant stakeholders, including committing specific resources to creating and updating knowledge

- When considering which knowledge-base solution provider to use, it is important to agree which features are vital, and which simply nice-to-have. Functionality could include natural language search; automated document organisation; the ability to rate the accuracy of articles; document retention; dynamic FAQ production; the availability of specific information based on user profiles; defined editorial and approval processes; and the ability to access the knowledge base across multiple channels

- Costs of implementation will include the choice of deployment model (whether via cloud, hybrid or CPE); the level of customisation; changes to the look-and-feel and graphical user interface; database design; any hardware or infrastructure upgrades required; integration with CRM / back-office systems, websites and mobile apps. Once the content sources have been identified, the time required to migrate these into your knowledge base should also be considered

- On an ongoing basis, feedback from agents and customers will identify gaps in the knowledge base which will need to be filled by product experts. Some knowledge bases will require full-time, dedicated resource to manage them, whereas others will rely on automated systems making dynamic changes depending on callers' and agents' requirements. It is often the case that large businesses with many products and services to maintain will have numerous editors across many departments who can make suggestions, although it may only be a small handful of people who will verify and publish this information.

While many solution providers state that 80% of questions can be answered by 20% of content, it'll be each business's decision to decide how the remaining 20% of queries will be handled (but of course, even these 20% of documents will change over time as customers' requirements and the businesses' products will not stay static). Some will consider that this is a reasonable proportion to be handled by more traditional means, such as the contact centre, whereas others will leverage expert internal resource, as well as customer communities and forums to fill these knowledge gaps.

In all cases however, one of the keys to successful knowledge management is continually monitoring, updating and publishing the most accurate and in-demand information. Businesses should consider setting internal service levels for the knowledge base, for example only returning documents and suggested answers that have over a specific score for relevancy, and no more than a small number of answers per enquiry. If customers are trained to expect a self-service experience that returns pages and pages of documents that bear little relevance to their original query, they will very soon abandon self-service entirely.

Before the knowledge base goes live, it is crucial to have a content management strategy in place that will support the aims of the project. Without a clear understanding and appreciation of who requires the content, and what this content should be, there is little possibility of a successful implementation, or one where the cost is managed. The performance of the knowledge base can be measured by metrics such as reduced training time for agents (particularly relevant for greenfield or rapidly upscaling operations, such as outsourcers or seasonal retailers), and improvement in first-contact resolution, lower call escalation rates and the reusability of content.

It is not just the publishing of information that is vital: it is feedback on its accuracy and success from the wider user community which will help the business to fine-tune the knowledge base. Processes together this feedback should be put in place, and continually revisited to check their effectiveness, and it is possible to add successful answers to the knowledge base very quickly if a response from an agent (for example, via email or web chat) has been marked to be successful. Those who contribute timely and useful information - whether a customer or an employee - can be rewarded and recognised accordingly. People **want** to share their knowledge with others, and enabling them to do so easily is beneficial for all parties concerned. Businesses could measure the success of the knowledge management system by measuring the return on investment from call avoidance, by the rating or score given by readers of recommended articles, or by the number of times an article was read, for example.

INTEGRATION, SILOS AND MULTICHANNEL SELF-SERVICE

The reality for many businesses is that due to historical, operational and technological reasons, each customer contact channel has been added and managed separately. Until recently, one of the main problems that a multichannel contact centre had was that customers would call in to see why no one had answered their email. In many cases, the agent could not even access the email, so the frustrated customer explained once again what they wanted while on a call. The next time they needed to contact the business, the customer would have learned which channel to use, and simply picked up the phone.

These days, general email response times have decreased to an extent that it is now a credible channel, and the rise in new media has meant that most businesses are offering five or six channels: phone (often both live and IVR), email, letter and fax are standard - if not all used to the same extent - with web chat and especially social media entirely possible too.

Unless integration has taken place, these siloed interactions can't be leveraged by the rest of the contact centre in order to learn more about the customer journey, any issues that might have impacts on other channels, or to get a fuller picture of the customer. Businesses considering the integration of interaction channels have many elements to consider:

- All interactions that require specific information about a customer's account, should be tied to a customer master record to get a full picture of what has happened already in that customer's journey. When no identity verification has been done (which often happens in the newer channels), this is not possible. It may be worth considering an implied alternative identity verification process, less rigorous than the usual procedure, which trusts that the customer is who they say they are, based on a Twitter ID or email address, for example, purely for the purpose of tagging all interactions as coming from the customer so as to associate them with the customer's master record. No account-specific actions could be undertaken at this level of identification, but the questions and issues raised would be available for agents to view and act upon through a secure channel if appropriate (e.g. call-back).

- A single, centrally-held knowledge base should be made available to all agents, regardless of channel, and updated in real time. Where possible, relevant elements of this should be made available to customers for self-service purposes. It should be updateable by all agents: for example, social media agents might pick up on a hot, breaking issue first, and feed the answer to phone agents or self-service applications.

- The universal queue allows the business to understand the changing demand for customer contact, regardless of initial channel, allowing resources to float to where they are most needed to achieve service levels.

- Cross-channel analytics can explain which issues and customers are likely to be handled by each channel, and to see if any processes are broken. For example, if the same self-service term is looked for constantly, followed by numerous web chats or phone conversations using the same search phrase (as identified by interaction analytics), it might be worth looking at improving areas of the self-service knowledge base.

- Businesses must remember that integration does not mean standardisation. The role of some channels differs from those of others, and that the metrics of success will be different in each case. For example, businesses may use web chat in order to close sales on a website, in which case sales conversion rate is a more important metric than average handle time to consider. The latter metric may be seen as being key to the email channel, in order to prevent stale emails from clogging up the system and frustrating customers.

Solution providers are increasingly moving away from the model of offering self-service applications simply for a single channel, recognising that this is no longer the way that businesses nor customers think about customer contact. For example, an automated e-parking solution might involve an inbound DTMF IVR session, followed by an outbound SMS confirmation, with another SMS sent to the customer before the parking ticket is up, so that the customer can reply by SMS or IVR in order to buy more time: an example of multiple channel, inbound/outbound self-service.

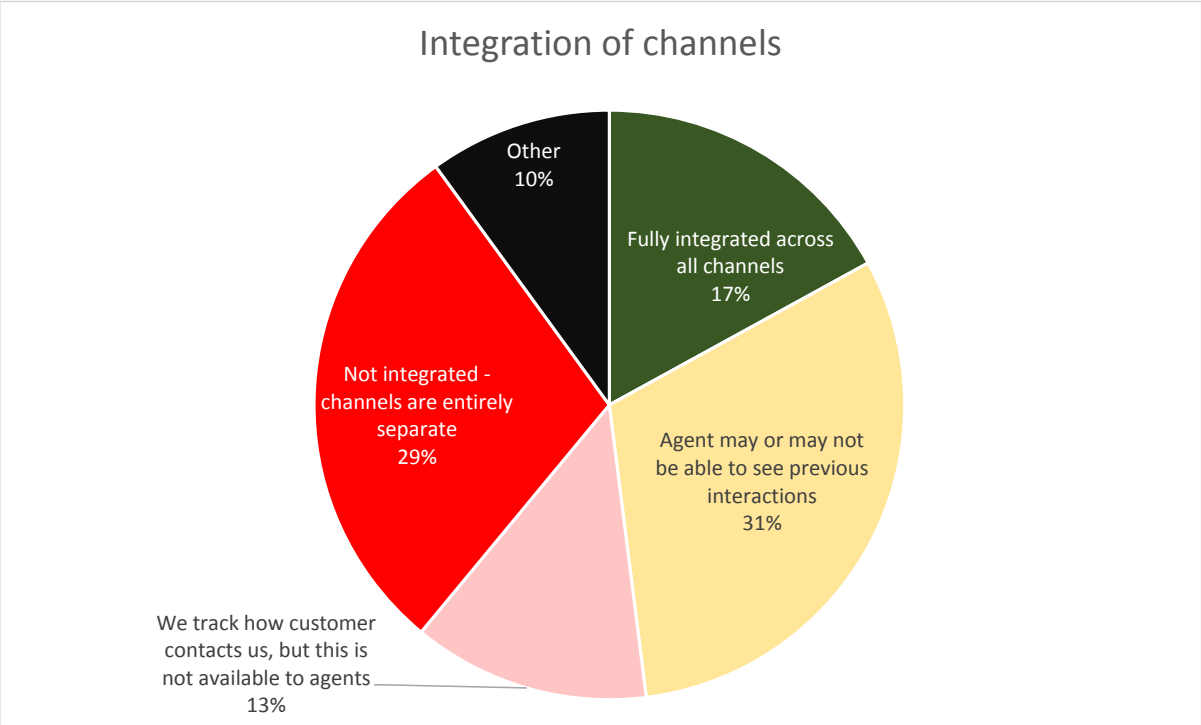
END-USER QUESTION #3: HOW CAN YOU MIGRATE CUSTOMERS FROM AUTOMATED SERVICE TO LIVE SERVICE AS REQUIRED, INCLUDING ANY CONTEXT OR HISTORY OF WHAT THEY HAVE TRIED TO DO ALREADY?

KPS Knowledge Management Software

This is key in providing a seamless customer experience; a user should be guided through a self-help process and in the event of no suitable answer being found, a single click to log a ticket should be provided within the application. A full history of all documents viewed should be passed through, so the contact centre agents do not provide a solution which has already been dismissed by the customer. The importance of knowledge management tools should not be overlooked and any contact centre should look for a best-of-breed knowledge management solution that can easily integrate with their existing call handling application or customer portal.

Recent research shows the extent to which channels are still in silos. The following diagram[2] shows that 29% of this survey's respondents stated that channels are not integrated at all, 13% track but don't share this with agents, and a further 31% admit the previous interactions may not be visible to the agent. Only one in six contact centre respondents claim a tightly integrated view of the customer, regardless of the channel.

Figure 8: Integration of channels (Vocalcom survey)

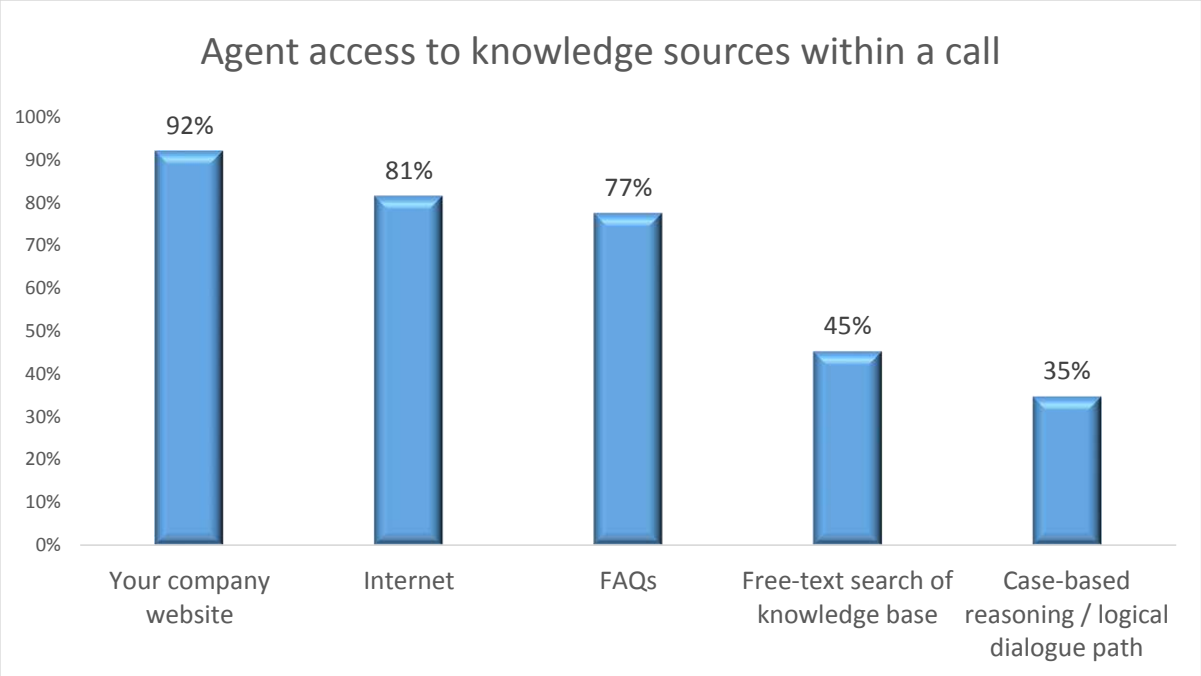


The non-integrated nature of most multichannel contact centres is often caused by the legacy systems in place. As a new channel came along, the temptation was to bolt on an application that would handle this, doing what integration was possible and necessary at a reasonable cost. With the proliferation of channels that has happened recently, it has been progressively more difficult for businesses to keep up. The recent movement away from a hardware-centric contact centre into an IP environment should have eased these integration issues somewhat, but this still requires understanding, commitment and budget from senior executives within the organisation.

[2] Source: http://www.vocalcom-software.com/images/Resources/files/TheMajorCallCenterTrendsfor2013TrendsAnalysis.pdf

The following table shows the knowledge resources that agents currently have within a call. Finding, reading, assimilating and using information actually within a call as very difficult and is rarely done seamlessly. An application such as case-based reasoning, which prompts the agent to ask specific questions, drilling down to find the right answer, is very useful but only 35% of agents have access to this sort of dynamic application. Most have to search around on a company website or FAQ page, or rely on a wide, unsupported search of knowledge bases or the wider Internet, hoping to get lucky. While it may seem that agents have access to a whole raft of various knowledge sources, the reality is that unfettered access to numerous pools and information is likely to lengthen the call considerably without necessarily providing the information required. Coupled with access to numerous, unstructured information sources, the typical agent has a huge number of potential inputs to consider, increasing the risk of longer, rambling conversations that do not result in first contact resolution.

Figure 9: In-call access to knowledge sources for agents



END-USER QUESTION #4: ONE OF THE BIGGEST CHALLENGES IS HOW TO GET A SELF-SERVICE SOLUTION TO WORK ALONGSIDE A NUMBER OF LEGACY SYSTEMS THAT REMAIN IN PLAY. SO HOW EASY/COSTLY ARE TODAY'S SOLUTIONS TO INTEGRATE COMPARED WITH 3-5 YEARS AGO?

KPS | Knowledge Management Software

The KPS knowledge management software has always been flexible in both its deployment options and use, taking the stance from day one to be system-agnostic. Therefore it offers a range of web services (SOAP- and JSON-based) to plug-in our application into other web applications using industry-recognised standards and methodologies. It is also possible to search content from legacy systems, by either migrating the content into the knowledge base or leaving *in situ* and indexing the content directly. Providing this flexibility ensures a quick-to-deploy and cost-effective solution.

SELF-SERVICE CHANNELS: IVR

Telephone self-service has been around since the 1970's, when the first IVR (interactive voice response) units became widely-used. DTMF IVR allows customers with a touchtone phone (also known as "DTMF" – dual-tone, multiple frequency) to access and provide information in a numerical format.

In recent years, there has been growth in the use of automated speech recognition (ASR), which allows customers to speak their requirements to the system, allowing greater flexibility and functionality.

IVR – whether through DTMF or speech recognition - has four main functions:

1. to route calls to the right person or department (e.g. "Press 1 for sales, or 2 for service…") in auto-attendant mode

2. to identify who's calling via either caller-line identity (where the caller's number is recognised, and their records brought up immediately), or through inputted information, such as account number. The caller's information is then "popped" onto the screen of an agent who then understands who the customer is and what they are likely to want

3. to segment and differentiate between customers, identifying the most important in order to deliver a premium standard of service to them (e.g. minimising time on-hold, spending longer on the phone with them, offering high-value services such as web collaboration, if required)

4. to deliver a total customer service interaction without having to use a human agent, saving the business money – our research suggests that around six self-service IVR calls cost the same as a single person-to-person call.

AUTO-ATTENDANT

Those contact centres which use IVR considerably more than average have traditionally been found in the telecoms, utilities and finance sectors: often high-volume environments where a few seconds shaved from a call or a reduction in misrouting can save considerable amounts of money. Most financial services companies have many products which require specific skills and product knowledge. As such, routing based upon selection criteria such as customer account numbers, sales/service and specific product choices can take place, supported by an IVR front-end, functionality which is often known as 'auto-attendant'.

Auto-attendant functionality is somewhat different from most other self-service techniques, in that the purpose is not to deal entirely with the customer's query without recourse to an agent. However, it can be included in the self-service canon as the initial process of learning what the customer wants and directing the call appropriately - after collecting relevant information - could otherwise be done by a first-line telephony receptionist.

Figure 10: Does your contact centre use DTMF IVR or speech recognition to route calls? (by vertical market)

Vertical market	Use of DTMF IVR or ASR for routing
Transport & Travel	100%
Utilities	100%
Finance	88%
Insurance	75%
Public Sector	74%
Outsourcing	61%
Services	44%
TMT	44%
Housing	40%
Retail & Distribution	38%
Manufacturing	13%
Average	**57%**

Less-automated or volume-based contact centres, such as manufacturing, and sales-focused operations, such as retail, show less of a demand for IVR call routing solutions. Larger contact centres, such as those found in the utilities and finance industries, will very frequently use IVR to improve their routing capability.

Automated speech recognition is in use by 13% of survey respondents, with the finance sector as usual being by far the greatest user of this. The vast majority in all sectors that use IVR/ASR for routing use DTMF IVR, possibly in addition to ASR.

Figure 11: Use of DTMF IVR and speech recognition to route calls, by vertical market (only respondents where calls are routed using these solutions)

Vertical market	DTMF IVR	Speech recognition
Finance	100%	29%
Retail & Distribution	100%	20%
Housing	100%	0%
Manufacturing	100%	0%
Transport & Travel	100%	0%
Insurance	89%	11%
Services	88%	13%
Outsourcing	86%	14%
Public Sector	86%	14%
Utilities	80%	20%
TMT	75%	25%
Average	**89%**	**13%**
NB: totals may add up to more than 100% if both DTMF IVR and ASR are used		

As auto-attendant is a solution which provides major cost savings in volume-based environments, we would expect to find more of the larger contact centres using it, and the figures support this idea. However, almost half of respondents in sub-50 seat contact centres report using DTMF IVR or ASR for routing, demonstrating that this is not just a technology for operations with lots of budget and in-house IT support, with hosted, cloud-based solutions opening up the market.

Figure 12: Does your contact centre use DTMF IVR or speech recognition to route calls? (by contact centre size)

Contact centre size	Use of DTMF IVR or ASR for routing
Small	45%
Medium	54%
Large	79%
Average	**57%**

More expensive automated speech recognition solutions are far more prevalent in large operations, where the correct automated routing of many thousands of calls each day can very quickly make a case for ROI.

Figure 13: Use of DTMF IVR and speech recognition to route calls, by contact centre size (only respondents where calls are routed using these solutions)

Contact centre size	DTMF IVR	Speech recognition
Small	95%	5%
Medium	92%	16%
Large	89%	19%
Average	**89%**	**13%**

Sophisticated call routing capabilities allow the business to put the right agent with the right skills in front of the customer to meet the business's strategic aims, keep costs low and improve the customer's experience. Obviously, a business will want to treat a delinquent account differently to a high-value customer, or a caller identified at risk of leaving the business. The former can be routed straight through to collections, and the latter two to highly-skilled agents who may have worked with the customer previously.

Figure 14: Capability of routing calls automatically depending on the customer history

Can you route calls automatically depending on...	Proportion of respondents	Main vertical markets	Difference by size band
Unpaid account	16%	Finance, Utilities, TMT	Large 7x more likely than small
High-value customer	21%	Manufacturing, Finance, TMT, Outsourcing	36% large, 13% small
Risk of defection / end of contract	13%	Outsourcing, TMT, Finance	Large 28%, small c. 0%
Specific language requirements	9%	Transport & Travel	Little difference across size bands

Relatively few contact centres use much in the way of value-added routing, despite the ability to route a delinquent account automatically through to credit control being of great value to any business which offers accounts in arrears to its customers (finance, retail, telecoms, utilities, for example). Finance, TMT and utilities respondents showed the most enthusiasm for this, with large contact centres being seven times more likely than smaller operations to do this. A somewhat smaller difference was noted when looking at whether a customer was likely to defect or churn.

Identifying a high-value customer (and presumably bumping them up the queue or sending them to a top agent) is somewhat more popular. Perhaps surprising, even high-churn sectors like utilities do little to route customers who are likely to defect through to an appropriately-skilled agent. 28% of respondents in large operations use this.

Only 9% of survey respondents route calls automatically based upon a caller's language requirements.

Currently, value-added routing is found in relatively few contact centres. The advent of languages based on open standards, such as VoiceXML and CCXML, which will be discussed later in the report, will allow businesses to personalise and contextualise telephony self-service sessions and the attendant routing options to the benefit of the business as well as the customer.

FULL INTERACTION VOICE SELF-SERVICE

Going beyond auto-attendant functionality, full interaction voice self-service gives customers the option to complete a transaction entirely without speaking to an agent.

The utilities sector is a leader in voice self-service technology, with automated meter readings, balances and payments having been used for many years, with the finance sector also using self-service, especially for balance-checking. Many of these types of company have also made very significant investments in web-based self-service, and the relatively low proportion of self-service calls handled (22%) shows that many customers are choosing online servicing ahead of telephony self-service.

Overall, 28% of UK contact centres offer a full self-service option through a voice channel, a figure which is growing slowly but steadily, although of course many more offer auto-attendant functionality, as well as a widespread and rapidly-growing use of web and mobile self-service.

Figure 15: Overall proportion of calls handled entire through self-service (only in respondents which offer telephony self-service)

Vertical market	Proportion of contact centre respondents offering a full self-service option	Overall proportion of calls handled entirely through self-service if offered
Utilities	100%	20%
Finance	70%	58%
Public Sector	50%	7%
TMT	30%	40%
Outsourcing	29%	9%
Transport & Travel	25%	5%
Housing	17%	5%
Retail & Distribution	15%	18%
Services	15%	29%
Insurance	7%	5%
Manufacturing	0%	n/a
Average	**28%**	**22%**

NB: proportion of calls handled through self-service refers **only** to the 28% of respondents offering a full self-service option.

On average, 17% of full voice self-service interactions are handled through automated speech recognition, rather than DTMF IVR, a figure which remains fairly steady. 91% of self-service interactions in small contact centres are through DTMF IVR, with automated speech recognition becoming increasingly widely-used in larger operations, with 25% of medium-sized contact centres' and 17% of large operations' self-service calls being dealt with using ASR.

This is an example not only of how the more expensive and complex ASR applications are more likely to be used by those with the resources to implement and support them, but also that these are operations that can really benefit from the power and flexibility that automated speech recognition can bring.

Figure 16: Proportion of self-service calls handled through DTMF IVR or automated speech recognition, by vertical market

Vertical market	Proportion of self-service calls handled by DTMF IVR	Proportion of self-service calls handled by automated speech recognition
Housing	100%	0%
Insurance	100%	0%
Transport & Travel	100%	0%
Services	98%	2%
Outsourcing	88%	12%
TMT	87%	13%
Public Sector	85%	15%
Retail & Distribution	83%	18%
Finance	69%	31%
Utilities	60%	40%
Average	**83%**	**17%**

STRENGTHS, WEAKNESSES AND ROLE IN THE CUSTOMER CONTACT MIX

Self-evidently, many calls are not suitable for self-service, as they may require multiple requests within the same call, be of a complex nature or be from a caller who feels that they need to speak with a human agent. Additionally, some small businesses may have such a low volume of calls that it is not cost-effective to implement self-service.

Although 72% of respondents do not offer any full self-service solution via telephony, only a minority believe that self-service is entirely unsuitable for the: a third of UK contact centres do not offer full transaction self-service to customers via telephony, but believe that some of their workload could be fully-automated. It may well be that these respondents have decided to skip the voice self-service option, preferring to focus upon web-based self-service.

Even amongst those which offer telephony self-service options to customers, there is a feeling that the majority of calls are not suitable for complete automation. However, some sectors strongly believe that self-service has a great untapped potential, with the recently cost-conscious public sector stating a potential usage several times greater than currently is used. The IT sector is particularly well-placed to take advantage of web self-service, through a technical knowledge base, which is a much better way of disseminating very complex information than doing so over the telephone. The IT sector in particular has embraced the concept of customer communities, which is explored in greater depth within the Social section of this report. Effectively, users of the technology or products act as a crowd-sourced self-service base, which can actually be more effective and quicker than contacting the company in the first place.

When considering telephony based self-service, customers need to be persuaded to use IVR, and businesses can measure success in two ways: through the “play” rate (the proportion of customers that try to use IVR), and the “completion” rate (how many can successfully interact with the company without having to involve a human agent by “zeroing-out”). Customers need to be motivated to use IVR (i.e. there must be something in it for them), and businesses need to design, maintain, promote and improve the self-service application to get them to keep using it.

Simply making IVR self-service available without too much thought or effort will result in perhaps fewer than 20% of appropriate calls being completed without human interaction. Designing the IVR self-service experience with customers’ needs in mind, marketing it as an aid for customers, rewarding the customer for using it and tuning the application to make it even better can mean up to 90% of relevant calls are dealt with automatically: a massive cost saving, an improvement in the customer service experience and a boost for the company’s reputation with its customers.

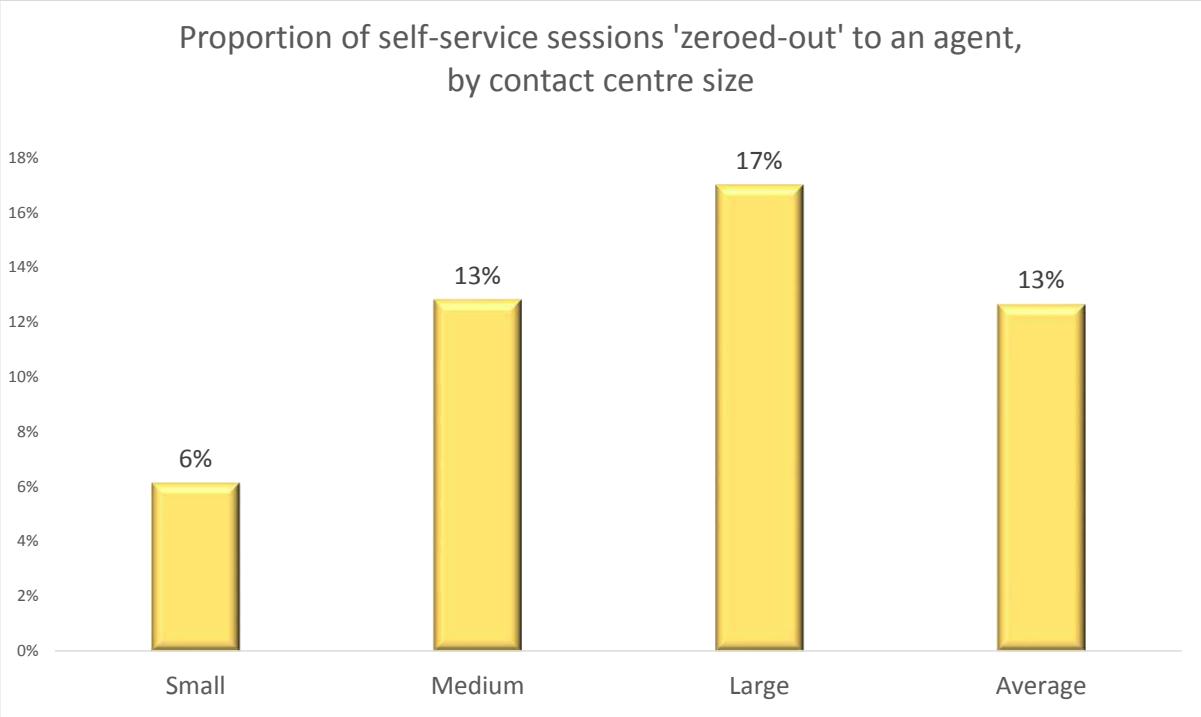
Figure 17: Advantages and disadvantages of DTMF IVR for self-service

Advantages	Disadvantages
Fantastic cost-cutter: 6 IVR calls cost less than a single person-to-person call (a live call is reported to cost an average of £3.87 with an IVR session costing 65p)	Can be inflexible to change IVR options, due to proprietary nature of many existing IVR solutions, although the increasing use of IP and open standards is going a long way to removing this as an issue
Captured customer data from an IVR enables personalisation, screen popping and skills-based routing to take place	IVR menus are difficult to visualise for customers, leading to stress and dissatisfaction. Users may feel "there is no end in sight" and become frustrated. Use of visual IVR or automated speech recognition can alleviate this
Frees agents from boring and repetitive work, reducing staff attrition and improving morale	Long-winded menus annoy customers, where shorter ones can reduce the options available, and thus, the functionality
Allows agents to spend more time doing high value-add work, like cross- and up-selling, and complex customer care and loyalty work	General negative perception of IVR: it is seen as a low-cost option aimed at helping the business, not the customer. Overuse of IVR makes customers feel as though the company does not value them
High level of familiarity of DTMF IVR as it has been in wide use for a long time	Although not a specific disadvantage of DTMF IVR, contact centres are likely to measure the customer queue time only once IVR has been passed through, whereas the reality for the customer is that the IVR session is part of the overall experience
Reduces queue times and call abandonment rates, improving customer satisfaction for those needing live agent help	Expensive, proprietary hardware has kept businesses locked into existing suppliers in the past, although VoiceXML and cloud-based solutions are now alleviating this

BEST PRACTICE

There is a wealth of information and research available on best practices for implementing DTMF IVR available through leading solution providers with many years - if not decades - of experience of what works and what does not. Despite these vast sources of information, there are still many implementations where the customer experience of using DTMF IVR is suboptimal, if not downright painful. It's no use trying to shift every customer service interaction onto IVR self-service, as if customers don't want to use IVR, they will "zero-out" (press 0 for a live agent) straightaway. If businesses don't offer a live agent option to an irate and frustrated caller, they won't need to worry about providing customer service to them in the future. It is worth reiterating that if callers agree to try a company's self-service system rather than insisting upon talking to an agent, there is an implied contract that if the self-service session is unsuitable, the caller should be allowed to speak with an agent. Few things can frustrate callers more than being hectored into using an unhelpful and irrelevant self-service system.

Figure 18: Proportion of self-service sessions 'zeroed-out' to an agent, by contact centre size



Overall, a mean average of 13% of calls that go into the DTMF IVR self-service option are "zeroed-out": instances where the customer decides that they in fact wish to speak with an operator, which is up slightly the 2012 figure of 11.7%. (NB, 1st quartile performance for 'zeroing-out' is 1%, the median is 5% and the 3rd quartile is 30%, which indicates that there are a relatively small number of contact centres where self-service failure rates are very high, which data indicate are more likely to be in the public, finance, insurance and TMT sectors).

There is a very noticeable positive correlation between the size of the contact centre and the proportion of self-service sessions that are abandoned in favour of speaking to an agent: the larger the contact centre, the more often customers 'zero-out'. One possible reason for this might be that larger operations are trying to do too much with their self-service. There is some circumstantial evidence to suggest that this is the case, as it is very noticeable that survey respondents from larger organisations tend to have far more options in the auto-attendant functionality of their IVR solution, and this tendency to offer a great deal of functionality and options may well also apply to IVR's self-service functionality as well. As an example, 25% of large contact centres have four or more options in their IVR routing menu, compared to only 5% amongst small respondents. Overly-complex or long-winded IVR functionality will tend to encourage session abandonment, and this may well be what we see here.

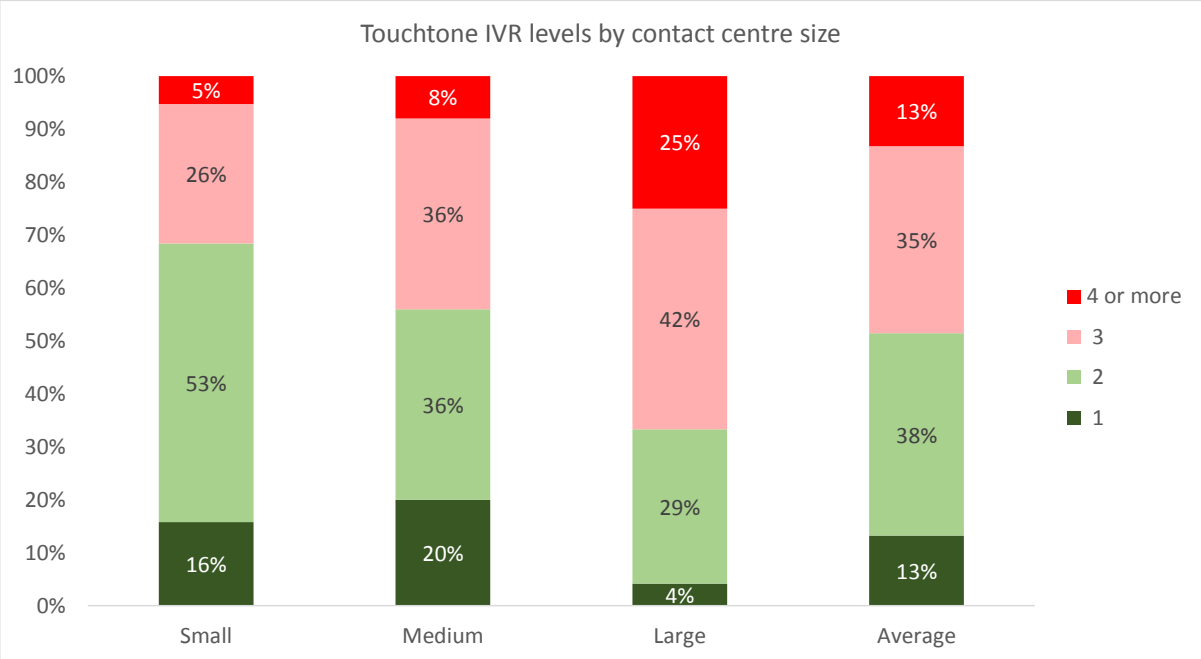
Due to the potential additional flexibility and functionality offered by automated speech recognition over DTMF IVR, we would expect the zeroing-out rate (which can be viewed as connected to customers' rejection of the self-service experience) to be lower for speech recognition than DTMF IVR. However, the opposite is the case:

- In contact centres where the majority of self-service is offered through speech recognition, the mean zero-out rate is 16.5%.
- In contact centres where the majority of self-service is offered through DTMF IVR, the mean zero-out rate is 10.2%.

Without interviewing these respondents in more depth, there is no certainty as to why this is happening. It is possible that customers are simply more used to DTMF IVR; that speech recognition often offers an option to speak to an agent early in the script (which is taken as the easy way out); or that customers do not know what to say to an automated system to make it work, so look to speak with a live agent. That customers may actually prefer a closed group of options is an interesting conundrum, and one which deserves more attention from the industry.

It is a well-reported fact that overly-complex and long-winded DTMF IVR menus are a frequent source of irritation to customers. Looking at the number of levels used on a DTMF IVR application (i.e. how many key-presses a caller must make to reach their destination), only 13% of respondents keep it simple with a single-level of options, e.g. "Press 1 for sales, 2 for Service, 3 for Accounts", with the same proportion having four or more levels. It seems the larger the contact centre, the more complex and granular the IVR menu.

Figure 19: DTMF IVR levels, by contact centre size



87% of survey respondents that use DTMF IVR use a multi-layer structure, making the caller choose at least two options. For example, after pressing 1 for sales, the customer may then have to choose a particular product or service to talk about.

35% of respondents using DTMF IVR to route calls have architected a three-level menu structure, where for example, the customer having chosen to talk about sales, then chosen Product X, may then have to choose whether they are a business or private customer.

13% of respondents take this at least one level further, and make our putative business customer who wants to buy product X then make yet another choice, for example, whether they are an account holder or a cash buyer.

It is not just the amount of levels in a DTMF IVR menu that can frustrate customers, but also the amount of options within each level. As the customer cannot see what the options are, but has to listen to each, it can be a very frustrating experience, and one which the movement to visual channels such as web self-service or Visual IVR via a smartphone can go a long way towards alleviating.

Figure 20: Touchtone IVR routing options, by vertical market

Vertical market	Mean average	Median average
Insurance	15	6
Retail & Distribution	14	9
Utilities	11	8
TMT	10	10
Transport & Travel	10	9
Outsourcing	9	7
Finance	9	10
Services	9	10
Public Sector	8	8
Housing	8	7
Manufacturing	5	5
TOTAL	**10**	**8**

NB: 1st quartile = 5; 3rd quartile = 11; High = 54; Low = 2. The median has been used as a small number of respondents report using 20 or more options in their DTMF IVR menu, which skews mean averages upwards and is less representative of the majority than the median.

Most respondents restrict themselves to a median of 8 options (e.g. 2 levels with 4 options on each), with the retail & distribution and insurance sectors - often home to multiple product sets, as well as service and sales in the same location – amongst those businesses offering the greatest numbers. Speech recognition removes the need for multi-level menus, as callers can be prompted to speak the service they require, and this will be investigated further in the following section.

Some recommendations for DTMF IVR implementation include:

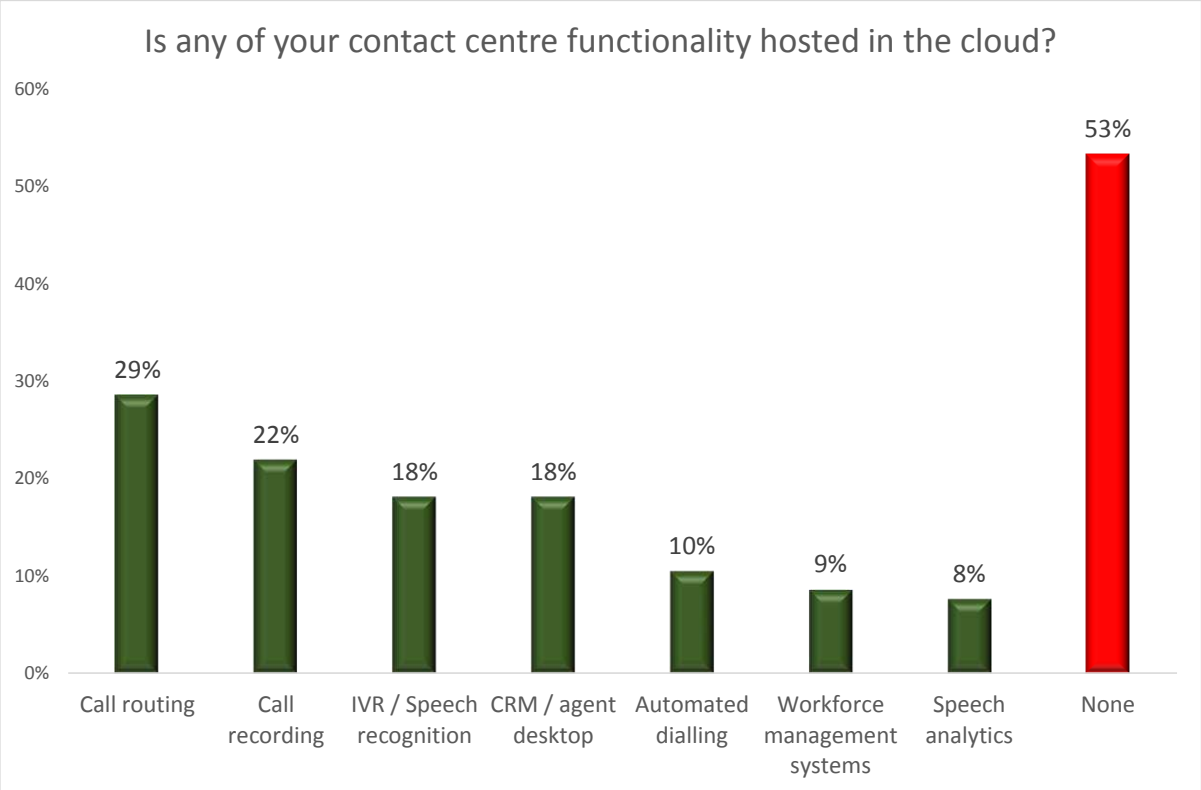
- offer the most popular option first
- offer zero out capability
- professional recording voice prompts
- giving customers more than one chance to select an option
- limiting the number of choices per menu: for example, no more than three or four per level and no more than two or three levels
- if possible, let the caller know where they are in the queue and update them at regular intervals (although not too often)
- make sure that the agent has access to any information entered by the caller, as repetition of this information is extremely frustrating.

DEVELOPMENTS IN DTMF IVR

The rise in VoIP and SIP (session initiation protocol) has allowed IVR to run on standard servers, rather than more expensive and proprietary telephony cards or specialist hardware, with media gateways and IP PBXs being supported within an open standard, commoditised telephony environment.

The pure software IVR platforms used today run on standard servers, reducing the restrictions that proprietary hardware placed upon functionality, scalability and flexibility, as well as the cost of purchasing and maintaining dedicated hardware. Some companies prefer to adopt the cloud-based method of providing IVR options to the customers, and a recent study of UK contact centres[3] shows that 18% of businesses are now using cloud-based IVR functionality.

Figure 21: Is any of your contact centre functionality hosted in the cloud?



[3] ContactBabel, "The UK Contact Centre Decision-Makers Guide, 2013"

As will be investigated in the next section, speech-enabling IVR increases the features available to the caller. Standards-based languages such as CCXML and VoiceXML support speech recognition and improved access to relevant corporate data, the integration of which into the IVR experience supports text-to-speech and the use of caller profiling to enable personalised IVR sessions based on who the caller is, their history, their contact preferences and any other relevant information that would further assist the self-service session.

With PCI compliance so much to the fore for many businesses, we would expect to see an increased use of IVR to take card payments, whether within a call or at the end of it. With the focus of many solution providers on achieving the relevant ISO security standards, it can be seen that the vendor community is very aware of what the market requires. DTMF has the advantage of extreme simplicity, which means that it may well have an important role to play on a sector-specific basis, even with the advent of newer and more sophisticated solutions. In situations where callers need the same piece of information on a recurring basis - such as checking the balance of prepaid credit cards - customers can access the information within a few seconds by typing in the DTMF digit sequence that they have learnt off-by-heart, and it may well be that this method of accessing information is the most convenient and quickest for customers. In addition, interactions that require a simple list of digits, such as e-parking, may be more suited to the unambiguous nature of DTMF (which, unlike speech recognition, is unaffected by background noise). Of course, by far the most common application for delivering long sequences of numbers is through making a payment via credit card, and dropping a customer into a DTMF session in order to do this has numerous advantages for businesses and customers in terms of convenience, familiarity and security.

The rapid take-up of cloud-based IVR solutions, particularly by small-medium sized companies, is driving growth within this sector. The ability to personalise IVR sessions, as well as the low initial start-up costs and limited in-house maintenance required, means that businesses that traditionally were unable or unwilling to see the benefits of IVR for their own company are now revisiting this.

Many solution providers state that they are actively increasing the power and range of the analytics solutions not just within live contact channels such as chat and voice, but also within automated IVR environments as well.

AUTOMATED SPEECH RECOGNITION

Despite the wider and more powerful functionality that speech recognition gives to an IVR system, significant inhibitors are present. It is generally acknowledged that speech recognition can be considerably more expensive to implement than DTMF IVR, and is also likely to require significant, highly-paid in-house resource to fine-tune and operate it going forward. Some solution providers note that the majority of businesses' interest in moving from DTMF to speech recognition comes when the existing telephony self-service legacy system is approaching end-of-life.

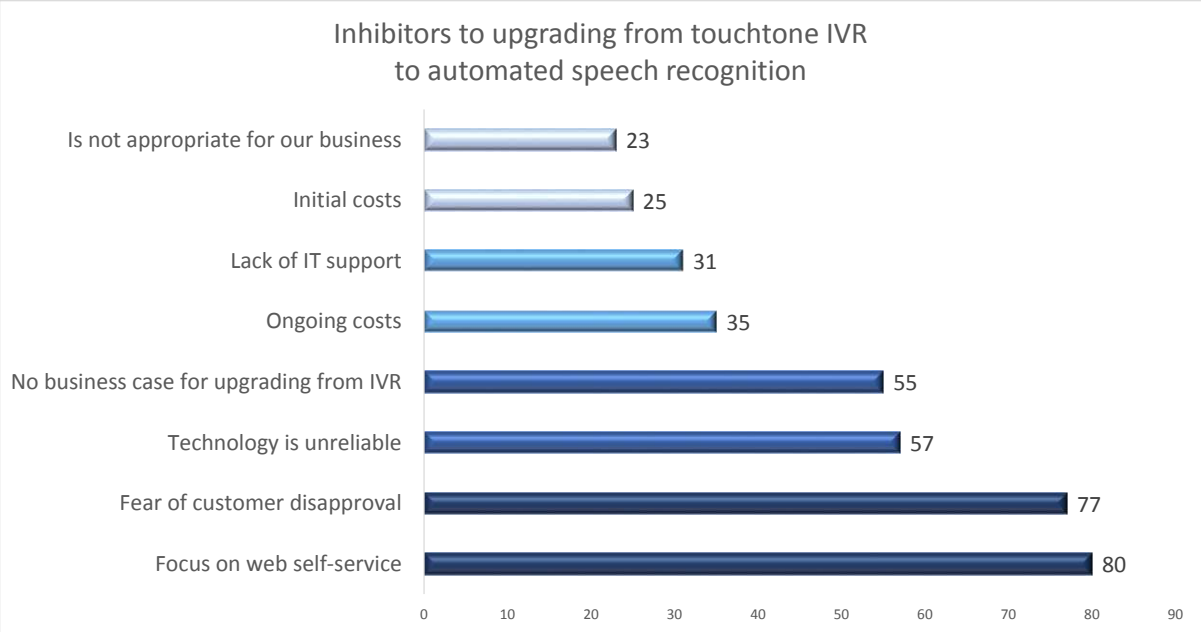
Speech-based IVR is particularly useful in cases where very long lists of items such as place names or surnames may be chosen, for which the more structured DTMF IVR is completely unsuited. The success or otherwise of speech-based IVRs is very affected by how callers are encouraged to use the service. It has been the case that some speech implementations have actually made life more difficult for the customer, who may not have the confidence that the system will understand their natural language request and provide very short, one-word answer; if nothing is given in the way of prompts or examples, callers may give too little or too much information as they are unsure of the sophistication or capabilities of the system. Using prompts such as "describe in a few words why you are calling us, for example 'to start a new mortgage application'" can be extremely useful in setting ground rules for the successful use of the system.

Some solution providers offer a semi-automated option for their speech recognition-driven IVR, whereby the agent has a chance to hear one or two pertinent words from within the speech recognition session before the live call is taken, giving the agent heads-up into the context, mindset and intent of the customer before the conversation actually begins.

Around 40% of calls made to contact centres are made from mobile phones and around half of these are function-rich smartphones. In such circumstances, it is far more convenient for callers to navigate their way through an IVR menu through the use of speech, rather than by having to constantly take the phone from the ear to press a key, which also carries the risk of not hearing the next option correctly.

The following diagram shows the net scores based on how survey respondents considered the importance of various inhibitors to upgrading from DTMF IVR to automated speech recognition. If a respondent strongly agrees that an inhibitor is important, it will score 2; if they agree, but not strongly, a score of 1 is given. Conversely, if a respondent strongly disagrees that this inhibitor is stopping them upgrading to automated speech recognition, a score of -2 is given; if they merely disagree, a score of -1. Neutral opinions score zero. The figures next to the bar refer to the overall net score, with the highest figures being the strongest inhibitors.

Figure 22: Inhibitors of movement from DTMF IVR to automated speech recognition



All of the eight potential inhibitors were seen by respondents as being relevant. In previous years, the main issue that was said to have held back speech-enabled self-service was that the respondents' businesses weren't really suited to automation and that their customers would not like it. Fear of customer disapproval is still a very strong inhibitor to moving towards speech recognition, but the most important inhibitor nowadays is that businesses feel that they should focus upon web-based self-service, rather than looking to move from DTMF IVR to speech recognition.

These are not the only inhibitors, there is still (perhaps misplaced) concern that technology is unreliable and that the additional expense may not be worth it. Inhibitors such as initial investment and ongoing costs could be alleviated through a cloud model, but the belief that customers would not like it is still a strong inhibitor: as DTMF IVR (when badly-implemented) is a major bugbear for customers, replacing it with a quicker and more powerful alternative (automated speech recognition) could be seen as a benefit, although the inflated zeroing-out rates associated with ASR seen in the previous section should be considered.

In all, there is still a great deal of work to be done by solution providers to deliver ASR solutions - either as a replacement for DTMF IVR, or as a new solution - through offering innovative payment and service delivery methods, and to create a greater market awareness of the success stories in this area. Businesses and solution providers should take note of the fact that self-service, in all of its many various guises and channels, is second only to telephony infrastructure upgrades in terms of the investment priorities of the contact centre within the next two years.

Against a background of potential inhibitors, there is some positivity coming from the consumer base. Because there are so many speech recognition applications now in use in daily life - for example Siri, PC-based voice recognition software, and voice-enabled hands-free dialling - consumers are now becoming more comfortable giving voice commands to an automated system. With every successful speech interaction, customers' confidence increases and speech enabled self-service becomes a little more firmly embedded in the customer base's psyche.

SPEECH TECHNOLOGY IN THE CLOUD

DTMF IVR has been a notable success for many businesses, but the added flexibility and power of speech recognition should also be considered, as well as looking at ways can enable to share the functionality that businesses have recently developed with their web self-service applications. Using natural language speech recognition to replace complex and lengthy DTMF menu structures should increase flexibility and functionality, but implementing and operating a speech-enabled IVR platform can be expensive, with designing and maintaining these complex applications requiring specialist resource. Outsourcing the hosting and management of speech services to proven solution providers enables businesses to focus upon developing their core business and improve their customer service experience.

One of the most consistently strong inhibitors against the uptake of speech recognition is the initial cost involved, as well as the expected ongoing support costs. The hosted or cloud proposition has a particular appeal to organisations who don't wish to invest or tie-up large sums of upfront capital investment on in-house systems or pay for the IT resource to run them. One advantage of hosting is that the need for significant upfront technology investment is lessened, providing on-tap access to extensive telephony resource, albeit of a third-party nature. Additionally, the use of hosted solutions means that businesses don't need continual ongoing investment to upgrade their own systems.

Like other self-service applications, automated speech has of course been more attractive for organisations with high volumes, where the cost of handling the call can even exceed the business value it represents. In this scenario, the need to reduce cost is imperative, but for speech-based self-service to work well, the technology infrastructure on which it depends must be robust enough, and the number of phone lines linked to it large enough to accommodate the maximum number of callers ever likely to contact the service, or run the risk of turning callers away, a cost which can be very high. Cloud-based speech services, where the telephony and technology infrastructure is centrally-owned and managed by a third party overcomes this capital investment hurdle, and the pay-as-you-go model adopted by most cloud suppliers means that ongoing operating costs are directly pegged to transaction volume, providing valuable operational flexibility.

VISUAL IVR AND IVVR

The audio-only nature of DTMF IVR places limitations upon how user-friendly the experience can be for a customer. There has always been a trade-off required between functionality and usability, which manifests itself in the number of menu options and levels that made available within the IVR system.

The rapid growth in smartphones has meant that it is now possible to offer a visual representation of IVR menus on a device which will then be used to call the business. Because it is far quicker to read text than to listen to text being spoken - some studies show that a caller can navigate a visual IVR menu between four and five times quicker than a DTMF IVR menu - the customer experience is improved without sacrificing any functionality or options. Furthermore, visual IVR can be used to send video presentations while waiting for an agent, for educational or marketing purposes, or to answer the self-service requirement (for example, pushing the relevant YouTube clip in order to show the caller how to do something).

Many businesses that use DTMF IVR have made long-term investments in this technology, and retiring the system entirely is not desirable. Giving existing IVR functionality a visual interface simply means that the IVR's path can be shown as a picture on a website or smartphone, with callers touching the selection that they require without having to listen to all of the options or to go up and down levels or branches. This has the dual benefit for the customer of being far quicker than listening to IVR menu options, and of being significantly more likely to get them the correct information or to be routed to the department most appropriate to their needs. Visual IVR menu systems integrate with existing DTMF structures and reuse the same VoiceXML scripts, meaning that any changes made to the existing DTMF IVR system will be automatically replicated regardless of channel or device.

Visual IVR offers companies the ability to develop value-added applications for their customers, rather than simply providing a visual representation of existing IVR menus. For example, in cases where very specific expertise is required, visual IVR can be used to help the caller self-diagnose where in the organisation they need to be going, rather than having to speak to a front-line agent who will then have to ask them the same questions in order to route the call to the appropriate resource.

It is worth noting that despite the huge uptake in smartphones and mobile apps, it is very unlikely that customers will find it convenient to have an app for every company with which they deal. Like apps, a visual IVR option provides businesses with a opportunity to display corporate branding and deliver an improved customer interaction experience.

Figure 23: Visual IVR: benefits for businesses and customers

Business	Customer
Cost reduction through improved call avoidance and more accurate routing, improving first contact resolution and decreasing call transfer rates	Greater granularity of routing, and improved functionality means that callers are more likely to arrive at the place where they need to be. Consistent functionality shared across IVR channels and customer devices means that customer engagement and confidence in using the system will be improved
Leveraged existing IVR investments, without having to rip and replace	Significant decrease in customer effort to access self-service or call routing capabilities
Reusability of existing scripts lowers development costs	If the agent has contextual information, there is less likelihood of the caller having to repeat information
Contextual information gathered within the visual IVR session can be popped to agents, giving an improved understanding of the customer's journey, reducing agent handle time and customer frustration	As more customers are finding the correct information without having to call the contact centre, this means lower wait times for the customer base in general

Building a business case for visual IVR may involve looking at the zero-out rate for your specific industry compared to your own statistics (industry averages are shown within the previous section on DTMF IVR), considering your call transfer rate (as shown below), and by listening to the voice of the customer via call recording or speech analytics as they comment upon their IVR experience. Carrying out a specific IVR customer experience survey is also a good way of gaining accurate insight into what might turn out to be a significantly negative experience for some of your customer base.

The call transfer metric can indicate a failure in the initial IVR routing, or a need to update FAQs or other information on a website (for example, a spike in this metric might be driven by a recent marketing campaign which has confused some customers, creating a high level of calls about the same issue), as well as training needs at the individual agent level.

Tracking, and call recording / speech analytics in cases of sudden high transfer rates could identify the issue.

Figure 24: Call transfers by vertical market

Vertical market	% of calls transferred (median)
Insurance	10%
Telecoms	10%
Public Sector	9%
Housing	8%
IT	8%
Services	5%
Finance	5%
Transport & Travel	4%
Retail & Distribution	4%
Outsourcing	3%
Utilities	3%
Manufacturing	3%
Average	**5.5%**

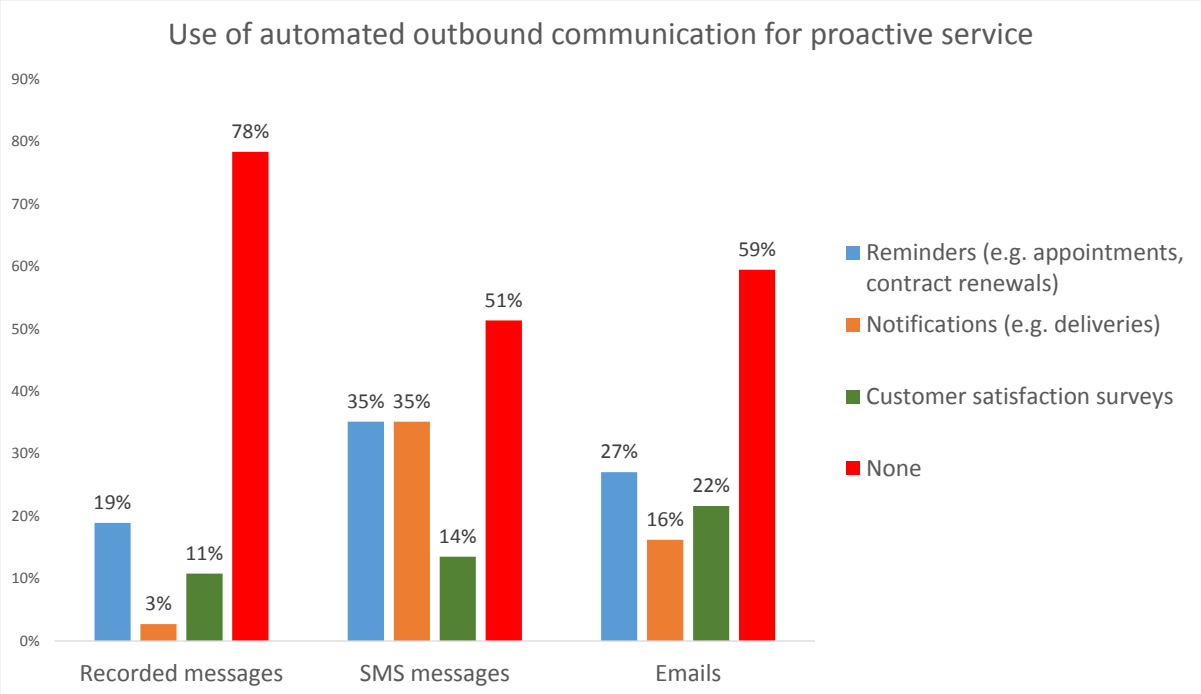
Visual IVR also represents an enormous opportunity for the hearing-impaired customer to be able to access far more functionality than was previously the case.

OUTBOUND IVR

Traditionally, outbound customer contact has been heavily sales-focused, and as it relies on a live agent communication, has tended to be expensive. Leading companies now carry out a reasonable amount of live proactive outbound customer service, which tends to account for around a quarter of their outbound activity, a figures which tends to grow each year. However, the same restrictions around the cost of using live agents to make calls apply to this process as well, particularly as there is no immediate return on investment from associated sales, although improved customer loyalty and satisfaction is certainly more likely.

The opportunity exists for what could be called 'outbound self-service' to expand, such as sending reminders and notifications to customers through an automated process, thus significantly reducing the cost to the business while improving the overall customer experience. We could define this as being an element of self-service, because it is part of a longer process that is driven by the customers' initial action, such as placing an order or making an appointment. In a significant number of these cases, a customer will choose to seek clarification or a status update at some point in the process through making an inbound interaction. By sending a pre-emptive outbound message, the business is proactively assisting the customer to manage their interaction, making this an element of self-service.

Figure 25: Use of automated outbound for proactive customer service



More than three-quarters of respondents do not use outbound recorded messages for any purpose, perhaps in part because of cultural negativity surrounding these, such as those pushing PPI compensation or personal injury claims. SMS messages are used much more widely, with reminders and notifications being particularly popular for this channel, particularly in the retail and finance industries. The simplicity of SMS provides a cheap and easy route to the customer, with all of the information that the customer requires able to be sent in a small number of characters. Although not strictly part of the self-service mix, outbound customer satisfaction surveys are also a popular activity for customers to be invited to take part in, via an automated outbound channel.

Drivers for outbound proactive IVR include inbound call deflection and improved customer satisfaction, as well as non-contact centre-related improvements, such fewer missed appointments or deliveries, for example.

Other uses of outbound IVR technology include:

- payment reminders
- outbound collections
- customer satisfaction surveys
- short-notice employee availability and scheduling (e.g. retail, fast-food)
- urgent information provision, such as school closures, weather updates, etc.
- delivery and order status updates.

SELF-SERVICE CHANNELS: VOICE BIOMETRICS

Customer security processes are about two factors: are you who you say you are, and are you allowed to do what you are trying to do?

Until a few years ago many businesses relied on trust that the caller was who they claimed to be – asking only for a name and address. Today, strong identity verification processes are now seen by virtually all businesses as critically important and most make some attempt to verify a caller's claimed identity by asking for additional information that only the real caller should know. The increasing focus upon fraud detection has meant that identity verification has become far more important, and this is unlikely to change.

Identity theft is a high-profile issue, and as such, businesses have had to tighten security and, as importantly, be seen to be doing so by their customers, as fraud prevention has now become a brand issue, as well as a regulatory one. While fraud certainly causes losses to a business, the risk of losing customers' confidence by being seen as lackadaisical about security is potentially a much greater negative. Criminals' methods have become more sophisticated and businesses have had to respond by introducing more complex identity verification processes.

However identity verification procedures have now become intrusive and inconvenient for the customer. Customers are expected to remember an increasing array of passwords, PINs, memorable information, information on their last transactions or to carry smart cards or tokens everywhere they go. Customers can undergo a 'Spanish Inquisition' before being permitted to make their enquiry or place their order – which reduces customer satisfaction, and also costs businesses time and money. It takes an average of 28 seconds to verify a customer's identity manually, and this mounts up considerably: the UK contact centre industry spends around £3bn each year, just to verify the caller is who they claim to be.

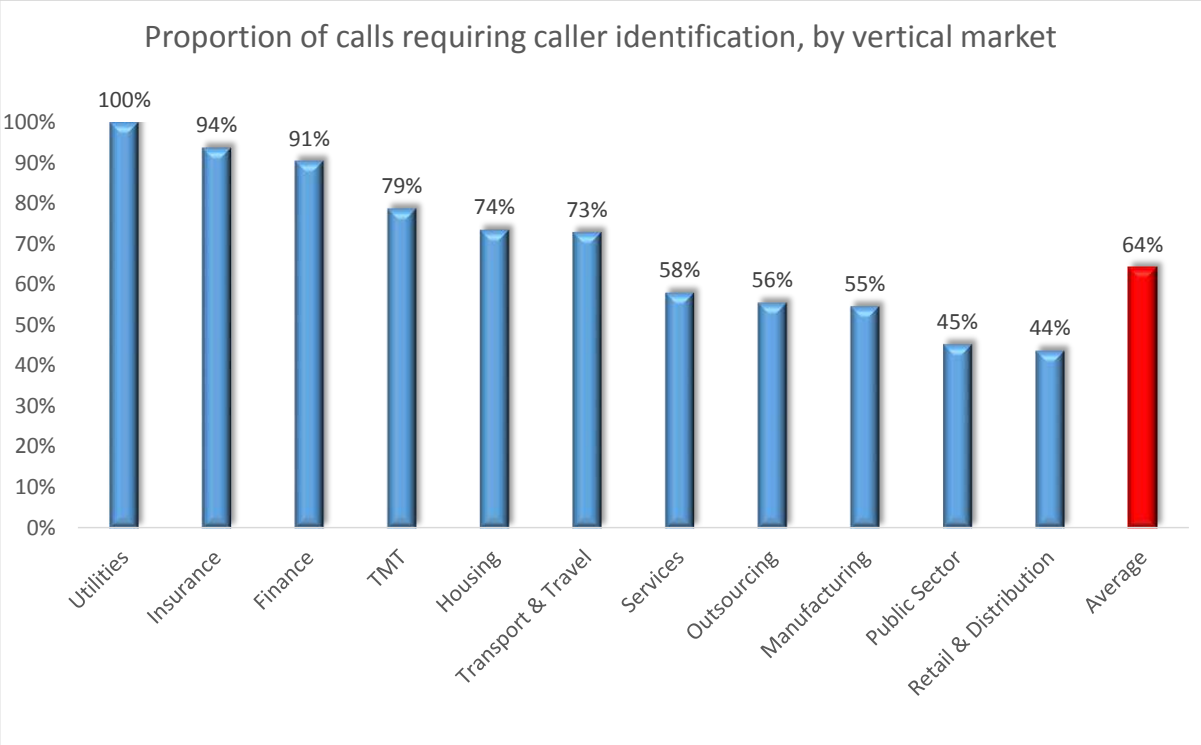
In fact, the cost of identity verification in the contact centre has increased by a factor of 3.5 since 2007, with more calls requiring identity checks, which now themselves take an average of 45% longer due to more stringent testing. With rising salaries and longer call times, cost-per-call has increased by well over £1 per call, and the overall number of all inbound calls has increased by around 15% since 2007. Although in-call efficiency has improved, manual identity verification is slower than ever before, all factors which drive up the cost of initial identification.

Identity verification processes are typically based on one or more authentication factors that fall into the following generally accepted categories

- something you **know** - e.g. password, PIN or memorable information
- something you **are** - a biometric such as a fingerprint, retina pattern or voice print
- something you **have** – a tangible object, e.g. a PIN-generating key fob, or the 3-digit code on the back of many credit cards.

Combining these factors creates a more complex, and potentially more secure two-factor or even three-factor authentication process. Increasingly, regulations are requiring two-factor authentication processes. Financial institutions' can no longer rely on simply passwords to protection web banking services. For example, in the US, FFIEC guidance indicates that financial institutions should implement similar stronger authentication processes in their contact centres and IVR systems. Businesses have to accept that there is often a high security versus high usability trade-off: the level of security depends on what the business needs to do, as lengthy procedures can impact seriously upon customer effort and satisfaction.

Figure 26: Proportion of calls requiring caller identification, by vertical market



In line with regulatory and commercial pressure to improve fraud detection and achieve compliance, businesses' identity checking procedures have become more stringent, with 64% of calls in 2013 requiring identity verification, compared to only 47% in 2007.

As might be expected, the financial, insurance and utilities sectors are amongst the sectors most often authenticating callers' identity. The more sales-oriented sectors do so the least, which is the same for the information-driven public sector respondents.

Figure 27: Caller identity authentication methods

Identification method (when required)	Proportion of contact centres using this method
Using **only** an agent	93%
Using **only** automation	0%
Using **both** human and automation	7%
Do not authenticate any calls	*10%*
Touchtone IVR	*6%*
Speech recognition	*1%*

93% of all respondents that identify callers do so through **purely** human means, taking an average of 28 seconds to do so. 7% use IVR or speech recognition to identify the caller (which itself takes around 20 seconds), but in all of these cases, first get the caller to use an IVR to collect their details, then also use the agent to double-check once the call is passed through, wasting the caller's time and increasing the contact centre's costs. The amount of time required to authenticate an identity through manual means (using an agent) differs significantly between vertical markets, with those in the utilities, financial, insurance and public sectors taking the longest, as legislation and the risk of fraud is perhaps the greatest here.

Figure 28: Time taken to authenticate caller identity, by vertical market

Vertical market	Time taken to authenticate caller's identity (seconds)
Utilities	50
Finance	40
Public Sector	30
Insurance	29
Retail & Distribution	28
Services	26
Manufacturing	25
Transport & Travel	25
Housing	23
TMT	21
Outsourcing	20
Average	**28**

The unnecessary cost of caller authentication in UK contact centres

64% of all calls require a security and identification process to be completed first. 100% of these will require some agent input even if IVR or speech recognition is also used. On average, it takes 28 seconds to go through security.

Using these statistics, it is possible to approximate how much UK contact centres spend each year on screening customers by using agents.

Inbound call minutes per year: 49bn[4]

Average inbound call length: c. 4.75 minutes

Inbound calls per year: 10.3bn

Proportion of inbound calls that require security and identification checks: 64%

Proportion of security and identification checks carried out using an agent: 100%

Average length of agent-handled security and identification check: 28 seconds

Mean average cost per inbound call: £4.63 (end-2012)

Cost of time spent on agent-handled security and identification check: 45p per call

Overall cost of agent-handled security and identification checking: **£3.0bn per year**

[4] From ContactBabel, "The UK Contact Centre Industry in 2013: The State of the Industry"

To recap, there are several factors to consider when trying to predict changes in the ways in which customers are identified:

- businesses want to reduce the cost of fraud
- customers want convenience but also their personal information and assets protected
- businesses need to comply with existing and new laws and regulations
- contact centres spend excessive amounts of money on identifying and verifying customer identities
- existing methods of identity verification (e.g. PIN, password, etc.) are not secure and are user-unfriendly.

The emergence of biometric technologies

Biometric technology uses physiological or behavioural characteristics to verify a person's claimed identity. Physiological biometrics includes fingerprints, iris, or retina recognition, and voice verification. Behavioural biometrics includes signature verification, gait and keystroke dynamics.

Of these, voice is the only biometric that can be used over the phone. In fact, a voice verification system's strength lies in its ability to work over the phone or web and mobile making it a viable identity verification solution for contact centres. Voice verification systems use spoken words to generate a voiceprint, and each call can be compared with a previously-enrolled voiceprint to verify a caller's identity. The most sophisticated systems generate a voiceprint by using spoken words to calculate vocal measurements of a caller's vocal tract, thereby creating a unique digital representation of an individual's voice. These systems are not affected by factors such as the caller having a cold, using different types of phones, or aging. Voice verification systems are now delivering levels of accuracy and security that have proven robust enough for use by banks and insurers.

A significant advantage of voice biometric verification is that it can be done unobtrusively – in the background during the natural course of customers' conversations with an agent – using text independent and language independent technology. Real-time authentication significantly reduces average handle time and improves the customer experience by utilising voice biometrics to authenticate customers in real time. With this advanced technology, contact centres can:

- Voiceprint the vast majority of customers for seamless passive enrolment: in the course of a conversation, a voiceprint is created for that customer which lies on record for them to be authenticated against on the next call
- Securely authenticate customers with no customer effort—significantly improving the customer experience: the first few seconds of a call will be enough to match the customers' voiceprint against those on record
- Help agents reduce time to service by cutting average handle time: customers don't answer numerous security questions as the voiceprint gives enough information to identify them
- Significantly reduce fraud risk for all customers, and deter fraudsters.

The customer's experience

Since speaking is natural and intuitive, a well-planned implementation can result in a better customer experience that eliminates the need for PINs or passwords. In the case of PINs, it is estimated that only fifty 4-digit numbers account for around 20% of all chosen combinations, meaning that the chances of a false acceptance are far higher than the theoretical 1 in 10,000 chance it would otherwise be.

For example:

- In the case of text- and language-independent authentication, the customer's voiceprint (collected on previous calls) is authenticated in the background during the natural course of conversation with an agent, while simply outlining their service request – minimising both customer effort and time-to-service. There is no need to remember PINs or passwords, which greatly improves the customer's experience
- 'Account Number' based voice verification – the caller is asked to speak their account number. The account number identifies the caller, and the spoken words are used to generate a voiceprint that verifies the caller is the account holder
- 'Challenge Response'. Typically the customer is asked to repeat a series of numbers , e.g. "Please say 'one seven three four'". The spoken words are used to generate a voiceprint. The numbers spoken are usually different each time the caller phones, which would rule out recordings being used fraudulently, no matter how accurate they were.

In cases where a two-factor authentication process is required, voice verification can be combined with a 'something you know' – such as an answer to a memorable question. Real-time agent guidance can prompt agents to ask a further security question within the call if the process requires it.

The business benefits

Businesses benefit from two types of savings. These can be illustrated in the following example:-

A contact centre receives 10 million inbound calls per annum with the existing identity verification procedure taking on average 28 seconds and being performed by an agent:

- Eliminating the time taken by an agent to verify a caller's identity can save 45p per call (£4.5m per annum)
- Secure automated identity verification enables a broader range of fully automated services to be offered, reducing agent cost.

The potential benefits for the business are huge, and the customer also gains through a better experience, longer opening hours and greater identity protection.

Similar savings will also be found in the case of text-independent authentication, where the caller's voiceprint is authenticated within the natural course of the conversation. The agent begins each call by immediately asking how they can help the customer, and the authentication process is carried out by voiceprint verification at the same time that the agent is listening to the caller and preparing to help them.

Voice verification can also be used to protect the enterprise against repudiation (where the customer says at a later date that they did not do it) as it can verify the physical presence of an individual at the other end of a phone line. Interestingly, this capability is already used by various US law enforcement agencies to check that released offenders are where they should be.

For procedures such as internet password resetting, the higher level of security achieved with voice verification can enable businesses to offer real-time password resets or reminders. This benefits both customer and business and can reduce up to 70% of helpdesk calls.

Voice verification has the advantages of near-ubiquity (the vast majority of people would be able to use it) as well as improving levels of security and reducing costs. The increasing demand of the public for identity protection, coupled with businesses' permanent desire to increase profits mean that voice verification is an option that any company concerned about identity authentication should now seriously consider.

SELF-SERVICE CHANNELS: WEB SELF-SERVICE

For businesses, by far the major advantage to having customers use web self-service is the fact that the cost per support session is estimated to be between 40 and 100 times cheaper than a live call to an agent.

There are numerous high-quality market research findings available on the importance of web self-service to the overall customer experience: the sheer breadth and volume of them is such that it is indisputable that web self-service is one of the most powerful and important technologies that a business can support. Just a bit one example, it has been stated that 58% of calls to the contact centre result from bad website service or a failure in another channel. Quite apart from the current importance of this application, research shows that as customers become more educated and experience many different qualities of online self-service, their expectations increase across the board which puts pressure on other organisations to keep up or even exceed the current benchmark performance.

Put basically, most customers will visit a website first; if they cannot find what they're looking for immediately they will try self-service; if the self-service experience does not give them what they want immediately and accurately, they will either call the business or go elsewhere. In cases where the customer is tied into an existing business, this will result (merely) in a higher cost of service and decreased customer satisfaction. In cases where the web visitor is only a potential customer, a failure in the self-service process on a website will mean the almost-certain loss of a sale.

In terms of pure self-service, the website can provide various options for the customer, ranging from the most basic search and static FAQ functionality, to personalised virtual agents and dynamic FAQs.

SEARCH

Since corporate websites first came into being, businesses have offered search tools for customers to look through indexed information, based on keywords found in these documents, in order to answer their questions without the need to call the business. While such functionality has the advantage of at least being familiar, indices grow, documents get old and out-of-date, and customers become educated that there are more sophisticated and effective self-service solutions available, with customers' opinions of standard search functionality suffering as a result.

With only a blank text entry box to guide them, the onus to search successfully is with the customer, who has to try to 'get into the mind of the business' and phrase the question or search terms in a way that fits the business and its internal jargon. However, this is not always possible, and customers have a limit to the maximum number of times that they will attempt to search, or how many pages they will read from the numerous documents that a wide keyword search can bring back, claiming that it has answered the query. The customer then has two possibilities: to engage the business through a high cost channel such as telephony or email, or worse, to find an alternative supplier that can help them without going through this high effort process.

Search functionality does have its place: for example, if a customer wanted to find out very specific information about a product that had an unambiguous name (for example, 'SDK36479 installation'), a search on this particular term would at least bring back documents that had a high level of relevance to this product and how to set it up. However, if the customer had a query that used keywords that were very popular and widely found elsewhere (for example, "What are your delivery times?"), typical search functionality might return every document that contains the word 'delivery', relying upon the customer's patience and goodwill to find the correct answer for themselves. In the case of very large companies, this could bring back potentially hundreds or thousands of documents, many of which could be out-of-date and have been superseded. The major problem with search functionality is that it pays close attention to the answers, but very little to understanding the question or the customer's thought processes.

It is one thing to be presented with a long list of documents while sitting in front of a large screen of a PC, where scrolling up and down the page is not an issue. For the same flawed search functionality to be placed onto a mobile website, expecting the user to zoom in and out, scrolling up and down, and then to potentially scan through numerous documents whose text is too small to read properly is probably a step too far even for the most enthusiastic and loyal of your customers.

FAQS

FAQs - frequently asked questions - are one of the most popular forms of Web self-service. At its simplest, an FAQ list can simply be a group of static documents and/or text, categorised under wider thematic headings, and kept up-to-date manually. Solution providers state that perhaps 80% of questions can be answered by 20% of documents, however for most businesses, customer requirements change on an ongoing basis so it is unlikely to be the same 20% of documents that are most useful as time progresses.

More complex applications can use techniques such as text mining and fuzzy search (approximate string matching) to return documents that are not just an exact or very close match to the search terms entered by the user. Sophisticated FAQ technology will leverage natural language processing to deliver more accuracy than standard search functionality.

It is possible to minimise the use of manual updates and supervision by making the FAQ list more dynamic and self-learning through using responses taken from emails to customers who have asked specific questions, which will then dynamically enter the FAQ list at an appropriately high level. Being able to restructure the knowledge base on a regular and ongoing basis through automation is key to maintaining the usefulness and relevance of the FAQs. Unlike the virtual agent (below), FAQs by their nature provide the user with a list of alternatives, asking them to judge and choose the correct most relevant answer for themselves. While this process takes longer for the customer than the provision of a single answer, it is currently more closely aligned with the typical user experience, and thus has the advantage of familiarity.

Providers of FAQ technology report that the typical reduction seen by customers in inbound live contact (such as email or telephony) is in the region of 25%.

VIRTUAL AGENTS

Virtual agents, otherwise known as virtual assistants, are software applications that engage customers in conversations in order to provide them with an answer to their queries. They may be personalised to reflect the company's branding, and often act as the first point of contact between the website visitor and the business.

Most virtual agents encourage the visitor to engage with them using natural language, rather than keywords. The virtual agent will parse, analyse and search for the answer which is deemed to be most suitable, returning this to the customer instantly. Many virtual agent applications will allow customers to give all sorts of information in any order, and either work with what it has been given, or ask the user for more detail about what they actually meant. It is probable that customers, having been unconsciously trained over the years to provide their queries in a way which standard search functionality is more likely to be able to handle (for example, a couple of quite specific keywords), will have to be encouraged and educated to use natural language queries in order for virtual agents to be able to deliver to their potential.

The virtual agent application is quite different from standard search functionality. It may be able to ignore bad punctuation or grammar, and certainly be able to use longer phrases rather than just searching on keywords. More sophisticated applications attempt to look for the actual intent behind the customer's question, trying to deliver a single correct answer (or at least a relatively small number of possible answers), rather than a list of dozens of potential answers contained in documents which may happen to contain some of the keywords that the customer has used. The virtual agent application may also try to exceed its brief by providing a list of related questions and answers to the original question, as it is well known that one question can lead to another. Solution providers and users train the system to pattern-match the right words or association of words with the correct result: the application, unlike older forms of web search techniques, does not simply guess what the customer wants, or how they will express themselves. It listens to what the customers actually say - perhaps through a mixture of large quantities of audio and text - which enables the initial set-up configuration to achieve a good accuracy rate, but which can really benefit over time as a positive feedback loop is established. Solutions that can gather and differentiate customer requests and results from multiple channels, noting the difference between them, have an even better success rate.

Virtual agent functionality 'understands' the context of what the customer is asking. Although of course it is still just a piece of software, the result will be much more akin to that of an empathetic human who also has had access to what the customer has been trying to do previously. For example, if a customer asks "When can I expect my delivery?", the context and the required answer will be different depending on whether the customer has placed an order already and is enquiring about its status, or has an as-yet hypothetical interest in turnaround times in case they decide to place an order.

When the virtual agent application has low confidence that it has returned the correct result, it is able to escalate the customers query seamlessly to a live chat agent, who then has access to the self-service session history, enabling a greater chance of a successful resolution without repetition. (It is generally considered best practice that escalations to real agents are not hidden from customers). The eventual correct response can be fed back to the automated virtual agent (and the knowledge base underlying it), which will make it more likely that future similar requests can be handled successfully through automated agents.

Some solutions offer chat agents the opportunity to see what the customer is typing in real time, and enabling the agent to get a head start, while at the same time linking to the contact centre knowledge base in order to provide a list of most likely answers, which will increase the accuracy of response and decrease the overall time to serve.

Solution providers indicate that virtual agent functionality is of interest to most sectors, however they point out that the commercial reasoning and business drivers differ greatly. Banks have an appreciation that they need to understand their customers to keep them loyal in a highly commoditised and competitive environment, and as such there is considerable interest in using virtual agent functionality within Voice of the Customer initiatives. For example, using real-time analytics, such organisations can learn that customers are talking about a specific issue, which can feed into wider commercial decisions in business areas unconnected to customer service. On the other hand, the utility sector in some countries is regulated and has a geographical area of customers which is the same, meaning the level of competition varies widely by country. As such, this sector can be heavily focused on cost reduction, and business cases will focus on contact avoidance, which is different from the online retailer, who wants to cross-sell and reduce their shopping cart abandonment rates.

RETURN ON INVESTMENT

The main element for calculating return on investment on self-service has traditionally been cost reduction, due to call avoidance. Even today, with the increasing sophistication and functionality available, this cost reduction is still perhaps the most closely-considered metric for calculating return on investment, especially for those of a more traditional mindset.

However, the reduction or avoidance in live agent support costs is only one part of self-service that has a potential benefit to the business. Perhaps the focus upon call avoidance is due to it being relatively easy to predict and measure the quantitative effect that self-service has on live channels. Businesses should also be aware that self-service now offers strong and growing opportunities for increasing revenue as well. By identifying a customer within a self-service process, and by personalising and contextualising offers that they may be interested in based upon their profile, history and what they are searching for now, businesses stand a very good chance of improving their cross-selling and up-selling rate accordingly. There are also wider and longer-term benefits to be had by understanding more about the customer mindset.

When considering the cost savings possible from call avoidance, perhaps the simplest metric to consider is the number of live contacts that are no longer made because the queries have been dealt with through self-service. If the knowledge base and self-service application is available to agents as well, there is also the opportunity to improve first contact resolution rates, and to decrease average handle time in the cases of those queries which were not handled by online self-service (for example, the customer may not have attempted to self-service before picking up the phone), but which the knowledge base has effectively answered for the agent.

For many businesses, having an automated application that can deliver tightly aligned, highly targeted and welcomed cross-selling and up-selling offers to customers is perhaps too good to be true. Yet after the virtual agent has successfully answered the initial query, it will earn an opportunity - just as a contact centre agent does after the successful resolution of customers call - to suggest relevant products or services related to the customer's profile and on a subject to which they have just been referring. The marketing offer can be delivered to the customer at the same time as the answer to the query: leaving this until after a successful answer has been provided means that the customer is far more likely to have left the website without seeing it. Of course, it is not possible to deliver relevant marketing offers to every customer, for every query, in every instance. Businesses must decide what the threshold of confidence that the customer's initial query has been answered successfully before the marketing offer is put in front of the customer. However, this method of automated cross-selling and up-selling off the back of successful service provision is one which should excite businesses, and in particular, their marketing departments.

Although it is perhaps currently more difficult to quantify accurately than cost avoidance and revenue generation, the ability to analyse the voice of the customer as they interact with your business through automated virtual agents provides organisations with potentially vital data and insight. Being able to capture what the customer is asking, and understanding how queries and comments are actually being expressed provides marketers with the information to identify customer trends and gives them the ability to understand exactly how customers choose to make themselves understood. Once businesses can confidently assess what customers are thinking and how they express themselves, it has the opportunity to talk to them in the language that they prefer.

Solution providers state that virtual agent applications should be able to deflect around 20-30% of telephone calls, and a higher proportion of emails (possibly as much as 50%). They further commented that the key performance indicator for accuracy should be around 80 to 90% (i.e. the application recognises the question and gets an answer 80-90% of the time). For instances where it has a low confidence that it has returned the correct answer, the application recommends an escalation strategy, carrying the history into the new application and putting it in front of the live agent.

BEST PRACTICE FOR IMPLEMENTING VIRTUAL AGENTS

- By using natural language, linked with information about the profile and the history of the customer, the virtual agent should be able to create cross-selling and up-selling opportunities. The accuracy and relevance of the answer is directly positively correlated to the opportunity of offering tightly aligned, highly focused marketing offers that will be of interest to the customer., Firstly, inaccurate and irrelevant answers mean that associated marketing opportunities are far less likely to be of interest to the customer

- Making a virtual agent easy to see on your website will encourage a greater number of questions to be asked of it, and conversely, fewer questions will be directed at live agents (whether through chat, email or telephone)

- Placing a virtual agent option close to other contact methods will encourage take-up. Some businesses will not allow escalation to a live agent until the web visitor has attempted to use the virtual agent. While this may appear to be a rather heavy-handed approach, it will certainly maximise use of virtual agents, assuming one's customers are of a forgiving nature

- It is important to tailor the functionality, and look and feel of the virtual agent application depending upon the channel through which it is being accessed. A typical website will allow a business far more space to display large amounts of information clearly, compared to a mobile website or at which is necessarily limited by screen size. Virtual agents may also be deployed in social media sites such as Facebook, accessing the same underlying knowledge base

- Virtual assistants often have a persona - a virtual personality, complete with image - that is easily recognisable to return customers, and which encourages visitors to interact as if they were talking to a real person. The persona may be represented as a static image or photograph, or maybe a moving avatar (animated character) and voice options may also be added, either through automated text-to-speech, or through professional recording

- It is of vital importance to allow customers to rate the quality of the answer which they have received from the virtual agent. Only through implementing a closed feedback loop can high-quality answers be shared more widely, and knowledge gaps and inaccurate information be flagged for quick improvement.

- The popularity and usefulness of FAQs is likely to change very quickly depending on changes in the business, customer requirements or other external factors. Being able to replace a static list with dynamic questions based on real visitor requirements and feedback has two benefits: there will be less need for dedicated internal resource to keep the FAQ list up-to-date, and customers are far more likely to have a successful self-service experience

- Solutions which use natural language rather than simple keywords are more likely to be able to return the correct response. Users should be encouraged to type full sentences rather than only a couple of words, which will give the system more information about the customer's actual intent

- If the answer received by the web visitor from the virtual assistant is incorrect, an option should then be given to escalate to a live agent, or if the visitor prefers, to revisit the virtual agent functionality, perhaps this time expressing their requirements in a slightly different fashion. It is important to businesses to understand and accept that virtual agent technology is not an alternative to live customer support, but a complementary option.

CONSIDERATIONS FOR WEB SELF-SERVICE

- Many customers are willing to experiment with new ways of contacting the company and trying to get answers to their queries with less effort. It is stated as a truism that contact centres are successful because people like talking to people. Our own view is somewhat different: contact centres are successful because they have proven over a long period of time that they are the most efficient, effective and confidence-inspiring way for customers to do what they need to do. There is nothing intrinsically more valuable about the voice channel the, but the familiarity and confidence that customers have developed through using the voice channel must be matched or exceeded by the online variant. Consequently, businesses must offer customers an easy and effective way to escalate self-service issue to live contact, preferably keeping knowledge of the customer's history, profile, previous requests and any customer inputs that have already been made so that customer effort is minimised

- Before detailed web self-service developments are made, efforts must be made to understand the requirements of the typical customer, including the nature of the information that they will request, the devices from which they most often search for information and the relative technical sophistication of the user

- Businesses can encourage customers to use self-service through providing them with better service levels in cases where escalation is required. While this sounds like a good application of carrot and stick theory, it does run the risk of alienating those customers who for reasons of their own simply want to speak to an agent without going through a self-service option first

- There is not simply the binary decision to be made: self-service or live assistance? In certain cases, it may be appropriate to use collaboration to take the customer by the hand through the website, particularly in cases where they are confused by complex product comparisons, or in the process of trying to complete a web form. The use of decision trees and case-based reasoning is appropriate for guiding the web visitor towards certain predefined goal, and having a live agent available - perhaps via the chat medium - to explain the various product features or required information within the form can be the difference between closing a sale and having the potential customer abandon the whole experience

- Although the underlying knowledge base is the same regardless of whether it is the agent or the customer who is accessing it, different users will find different access methods work best for them. For example, a business might want to ask an agent one or two very quick questions while they are on the call in order to focus with a high level of confidence in getting exactly the right answer available within a couple of seconds. However, this rather brusque, "expert" approach may well not be suitable for a novice customer, who may prefer to use natural language with a virtual agent, or to use a more guided and structured question-and-answer approach

- While there are certainly benefits for businesses to publish information about themselves (such as typical delivery times, the processes for purchasing particular goods or services, or store locations), customers will also want access to their own personal, account-based information such as order status, invoicing or current tariff. While this does require access to back-office systems, the level of integration required to extract such information is far less than that required to give the customer the ability to alter their records, i.e. having to provide 'write access' to the underlying databases

- A well-designed and pleasant user interface can make the self-service experience a positive benefit for the customer, quite apart from the increased likelihood of getting a query answered accurately in a short space of time. Companies should give consideration to what value-added activities they can provide at the point of self-service that they could not do in a live channel. For example, accessing customer reviews; having video clips of models wearing clothes that they are considering buying; and providing relevant offers via cross-selling and up-selling

- It is of vital importance to include customer feedback loops within any web self-service application. Only in this way will businesses understand fully which content (and indeed, content providers) are most highly valued, and where any gaps in the knowledge base exist

- The success of self-service applications should not be judged entirely on the reduction in the volume of calls or emails received by the business after self-service has been implemented. A prospect or customer that has been thoroughly alienated by unsympathetic and ineffective self-service implementations will also demonstrate a low propensity to call the contact centre: because they have gone elsewhere. Sophisticated self-service solutions offer businesses an outstanding opportunity to analyse their customers' behaviour, and to ask and understand what customers are most concerned about, reacting dynamically to the market requirements and fine-tuning offers and information to make the customer experience even better

- While the headline cost figures for a web self-service or telephony self-service session are much lower than any live channel, customers must bear in mind that shifting customers away from one-to-one contact with an employee is a double-edged sword. Once the emotional investment that the customer has with the company is lessened, they are far more likely to lose loyalty and to look elsewhere for the best deal. Companies must resist the temptation to force customers to use self-service exclusively, particularly in cases where they have spent many years building up personal emotional investment capital with the customer. Self-service is part of the customer contact jigsaw: it is not the full picture.

SELF-SERVICE CHANNELS: MOBILE

Statistics that show the number of smartphone users, volume of apps downloaded, value of mobile transactions, etc. are rising so quickly that they would be out-of-date before this report is published. It is sufficient to note that with very few exceptions, the mobile customer is relevant to every organisation, in every vertical market, in every geography of the world.

The rapidly decreasing cost of mobile bandwidth, coupled with the huge improvements in mobile networks (e.g. 4G) is that businesses can be endlessly ambitious in what they are attempting within this channel, as they can have a high level of confidence that what they can imagine today will be technically possible within a couple of years, if not months.

One of the major issues to overcome within most organisations that offer self-service across multiple channels and devices is this: who actually owns the space? Telephony is established as a contact centre function, and other non-voice customer channels are also falling under its auspices, but social media is often still owned by marketing, and the mobile channel is often a remit of the wider IT function. This fragmented and inconsistent ownership of the customer contact function means that maintaining the same high and reliable standard of information and service across channels has become an even more considerable challenge.

It may not be possible or even desirable for a single unified group to take charge of all such functions. However, because the customer neither knows nor cares about the internal structure of the organisation, a bridge between the channels must be created to ensure that a multichannel customer experience does not break down if the initial channel cannot handle all the customer's requirements effectively. This capability is explored elsewhere in the section on silos and integration, and also within the recent ContactBabel report "The Inner Circle Guide to Multichannel".

The dual, mutually-supporting drivers of high-speed mobile networks and the proliferation of smartphones means that provision of services via a mobile channel offers businesses and consumers the opportunity to make a step-change in the way that they communicate with each other. This new world of communication allows businesses to consider whether functionality like multimedia streaming and videoconferencing could give them a competitive advantage in the customer service world.

However, the vast majority of service functionality available to the mobile consumer today is unsophisticated and divorced from the rest of the customer experience. Put simply, if the customer tries to use a mobile app or website but cannot successfully do what they want to, in many cases they will be forced to initiate a service request via another channel, such as email or phone, which will be treated by the business as a separate request without any understanding of the history, activity or context that the customer has already undertaken.

Gathering, understanding and using the contextual data that can surround the mobile consumer will be key to pushing the uptake and functionality of this channel forward. The plethora of channels immediately available to the mobile consumer - including voice, web browsing, SMS, social media, and web chat - encourages the customer to act immediately for all their service or information requirements, rather than waiting until they are in front of a desktop computer.

60% of UK mobile phone users have access to a smartphone, with this figure growing rapidly[5]. This means that a large proportion of customers will want to contact businesses through these devices, whether via the telephony element of the device, or via the company's website or mobile app. Taking into account the use of tablet computers and handheld games consoles to access the Internet, the 'mobile channel' may actually be the first port-of-call for many customers, especially those in the younger demographics.

Research from Limelight Networks[6] shows that 80% of customers who have a poor experience with shopping on a mobile site will abandon it: some may intend to return via a PC, but many others will search elsewhere. As the author of the blog astutely comments: "There is no mobile web as far as consumers are concerned. There is only the web. And it has to perform well." Furthermore, most businesses are currently failing in this attempt, with recent research[7] around the shopping experience showing the mobile channel lagging way behind online websites and bricks-and-mortar shops.

Currently, offering a mobile customer experience tends to mean offering a smartphone app and/or a mobile version of a website.

[5] http://www.emarketer.com/Article/Nearly-Half-of-UK-Consumers-Will-Use-Smartphones-This-Year/1009956

[6] http://blog.limelight.com/2011/11/new-stats-show-how-critical-the-mobile-experience-is-for-e-commerce/

[7] http://www.prweb.com/releases/2013/6/prweb10789229.htm

MOBILE WEBSITES

A mobile website differs from simply accessing a full website via a mobile browser, rather offering a mobile-optimised alternative which is easier to use and overcomes some of the constraints around using a mobile device to access the web, particularly around usability and the high cost of data.

Mobile websites should not try to offer every single item available on the full website, but rather just the information and processes that most users will want in order to act or make a decision. Ease of use is vital: text must be fully displayed on screen, buttons must be clickable, and consider minimising the use of graphics to achieve quicker load times in areas with poor mobile data services. Many devices do not support Flash, and video uses a lot of data in any case, meaning greater cost and time for the user, although mobile bandwidth is becoming considerably cheaper and faster.

Bearing in mind that a mobile site generally cannot support every type of interaction that a customer may want, businesses may consider that allowing mobile users to access the main website as an option is a good idea. Contact details should be clear, and offering a seamless route from self-service into supported service, via email, web chat or telephony is becoming increasingly expected, ensuring all of the data and information they have input, along with relevant contextual data, is passed across as well.

It is beneficial to understand why customers will use a mobile site rather than waiting until they are in front of a PC. Generally, they will be more task-focused on a mobile device than a PC, so the emphasis should be on delivering quick, simple, high-volume interactions. For example, by looking at the current use of their full website, a bank may discover that a high proportion of users want to check their bank balance or view recent transactions, rather than setting up automatic bill payments or ordering foreign currency. Consequently, the mobile version of the website may focus only on a small number of simple, high-volume interaction types.

SMARTPHONE APPS

A good app can often provide a superior user experience to that of a mobile website, due to the greater level of design. However, they tend to be much more expensive to build, and unlike a mobile website, a new one has to be developed for each smartphone platform. As company apps will tend to be free to download, there is little opportunity to recoup this investment directly from them.

Recent years have seen the smartphone platform market change considerably. In 2013, Google Android had slightly more than 50% of the market, with Apple iOS at around 35%. BlackBerry and Microsoft each have less than 10%, so businesses could decide to produce only two flavours of app, which would actually support over 85% of the smartphone user market. (Of course, the downside is that you could be alienating 15% of your customer base).

A native application developed for a mobile device can use some of the device's capabilities to enhance the customer experience. For example, a smartphone app[8] can prompt drivers at the scene of a car accident to provide and capture the correct information, including photos. Such an app could also use GPS to give the exact location of the accident for use by the insurance company.

Industry estimates for building an app vary considerably depending on what they are trying to do, but many sources indicate that a cost of £20,000 upwards (per platform) is very feasible. The cost of developing a mobile website is less, and only needs to be done once. Whether an app is suitable for a company depends on their budget, and their customer base. It may be that the superior branding associated with apps is seen as being well worth the expense, even before factors like increased conversion rates are taken into account.

Solution providers mention that there can be a slight hurdle to overcome for customers who want a call-back via a mobile app, particularly for iPhone users. Apple's iOS stores the device's telephone number, but that cannot be accessed automatically by an app, for security reasons. This means that iPhone users may have to type in their telephone number rather than get a call-back automatically.

[8] http://www.naic.org/Releases/2012_docs/wreckcheck_mobile_app_auto_accidents.htm

Tips on building successful apps

- Understand what the most popular self-service transactions are that your customers wish to do, and focus initially on providing the means to do this via a mobile app. This will give you a quick win, familiarise your customers with this channel, and encourage them to think positively about it.
- If any interactions require knowledge of a customer's location, the GPS capabilities within a smartphone may make this particularly suitable to put onto a mobile app.
- An app should be able to divert a large number of simple calls away from the contact centre. Businesses may find that mobile apps are able to replace or augment telephony IVR, with the visual element allowing a greater depth of functionality and a quicker self-service experience for the customer.
- Consider the demographics of your customer base. Do your younger customers wish to carry out different transactions or interactions than your older customer base? If so, focus mobile functionality on the demographic that will use it most.
- If there is a problem with the app, or the customer cannot do what they wish to do, it is vital to offer a clear route into live customer service. This may be via a 'call me' button on the website, which can put the customer into a virtual queue, and can provide all the transaction-based information that the customer has already input, along with any of the other relevant customer details so that the agent does not have to start from scratch. A call-back option also means that the customer does not have to spend their own mobile minutes waiting in a queue.
- Businesses may use apps to encourage customer behaviour proactively. For example, an SMS message may be sent to a customer prompting them to take an action such as providing a meter reading, which can be done within the app. In this way, the only incremental cost to the business is through sending the original SMS.

CONTEXTUAL DATA: THE GREAT MOBILE OPPORTUNITY

The nature of mobile devices means that businesses potentially have the opportunity to know more about their customers and their specific requirements and preferences than ever before.

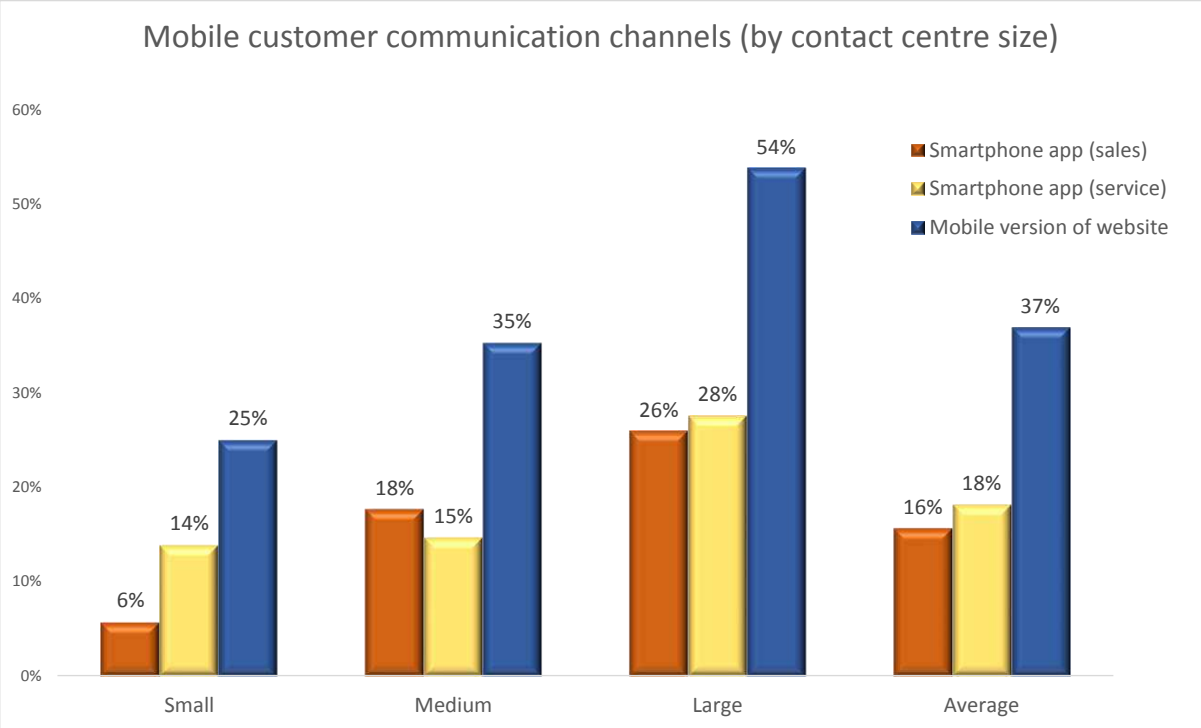
This includes:

- Customer identity: once the customer has identified themselves, such as by logging on, or through the mobile phone number, this allows the agent to access their existing customer history in the same way that would be done so on a phone call into the contact centre
- Geographical information: smartphones are GPS-enabled, allowing agents to see where customers are, and to direct them to the nearest store, for example
- Historical activity: if the customer has been browsing a mobile website or app beforehand, this information may be useful for the contact centre agent to have to hand, in order to see and understand what the customer has already tried to do
- Stored data: the mobile device may have data stored that identifies the customer, such as account number, that can speed up the interaction and make it more effective
- Collected information: the mobile device may also be used to capture and share information with the business such as photographs or videos. It may be possible to automate a two-way interaction: for example, a customer may use their mobile phone to scan a QR (quick response) code on a product. Using the information on the code, as well as the customer's input into the app about what they are trying to do, the customer may be directed to the correct place within business's self-service function in order to solve the issue that they have. This can take the contact centre out of the equation altogether, resulting in reduced costs for the business and a quicker and more effective customer experience.

CURRENT USAGE

As the following chart shows, only 37% of survey respondents provide their website in a 'mobile-friendly' format, for example by having the most popular elements available, speeding load times, optimising graphics, improving readability and scrolling, etc. This figure is 54% for larger operations.

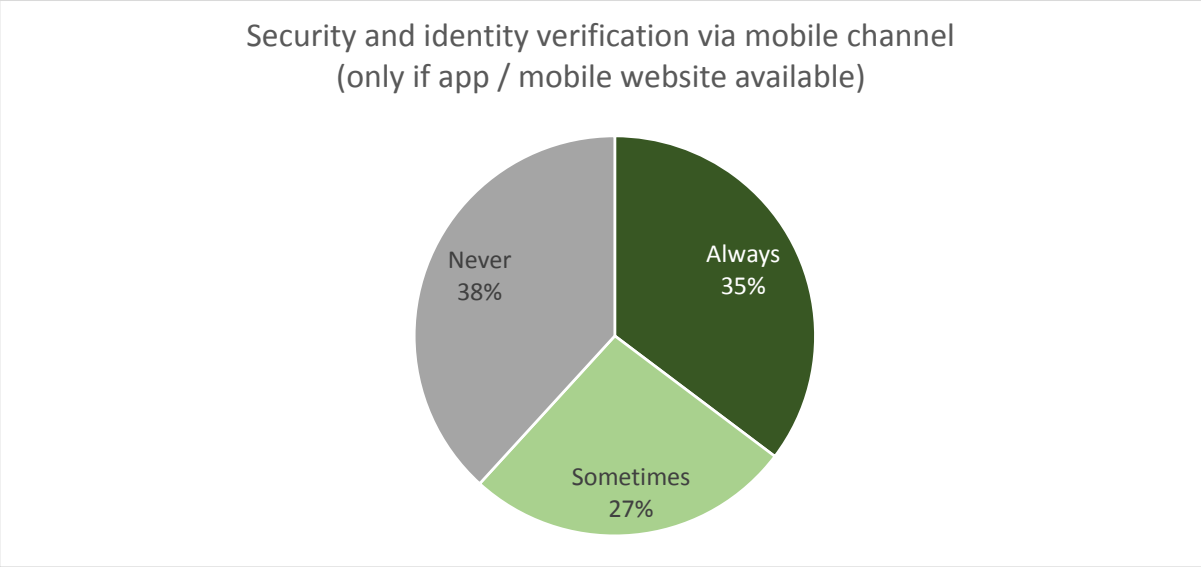
Figure 29: Mobile customer communication channels (by contact centre size)



However, fewer than 1 in 5 respondents have a dedicated smartphone app, either for sales or for service, although larger businesses were more likely to have both. This is likely to be a function of cost and budget, and also because smaller companies are less likely to get the numbers of app downloads necessary to make this an economic success for them.

64% of inbound calls require some form of customer identification and verification process to happen, as the phone and mobile identity verification questions are differently-phrased, it is not possible to compare the two exactly. However, the figure for mobile interactions appears to somewhat similar, with 35% of respondents that offer a mobile channel stating that users **always** have to identify themselves, with 27% requiring this only for some interaction types, and 38% never doing so.

Figure 30: Security and identity verification via mobile channel (only if app / mobile website available)



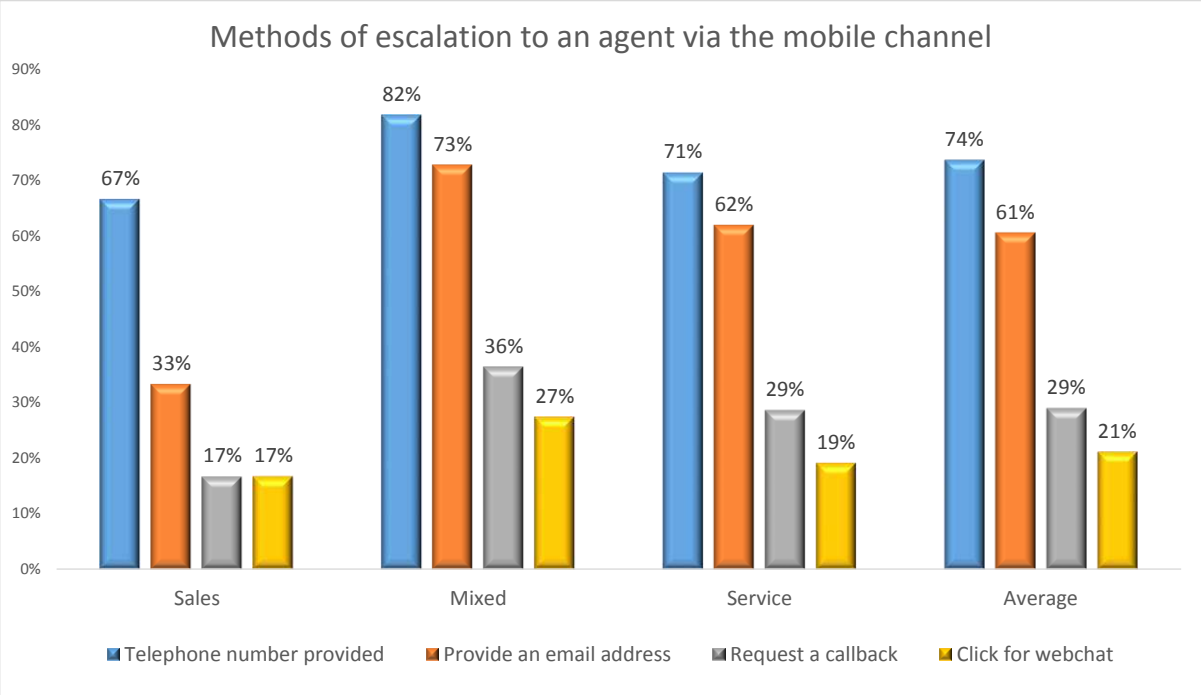
Because of the frequent requirement for customers to pass through security, and the fact that typing text into a mobile phone screen is inherently fiddly, businesses should consider whether voice biometric security might be a more usable and secure method for both customer and business. Voice biometrics is studied in depth elsewhere within this report.

Solution providers of mobile self-service solutions that were interviewed for this report stated that the financial services sector (particularly banking), higher education and retail sectors are currently (early 2014) those that are most interested in developing the mobile self-service channel.

CROSS-CHANNEL ESCALATION

In cases where the user cannot complete their interaction solely through mobile browsing or using an app, businesses should consider how they will keep the customer or prospect engaged with the business if the customer has to change channel.

Figure 31: Methods of escalation to an agent via the mobile channel



The easiest way to support cross-channel contact is to offer a telephone number on the mobile website or inside the app, but only 74% of respondents that offer a mobile channel even do such a basic action. In the vast majority of cases where the customer breaks from a mobile session to initiate a live contact, they must start again from the beginning, as even if security has been passed through on the mobile channel, most contact centres do not credit this security and identification process, nor will the browsing history be passed onto the agent. Effectively, the customer may as well not have used the mobile channel at all, which is a negative for them and their attitude towards this channel in future: not just for this business, but for all mobile customer experiences. There is also the opportunity within the mobile self-service experience to integrate and gather information from the telephony queue: for example, providing mobile customers with up-to-date wait times if they decide to escalate to a telephony queue, but this is currently rarely done.

Providing an email address is the second most popular escalation method, which in theory does allow the pre-population of fields in an email form (user details, account details, type of issue etc.) although only a few respondents do this. However, email is a slow medium even when done correctly, and the user will not get an answer in real time.

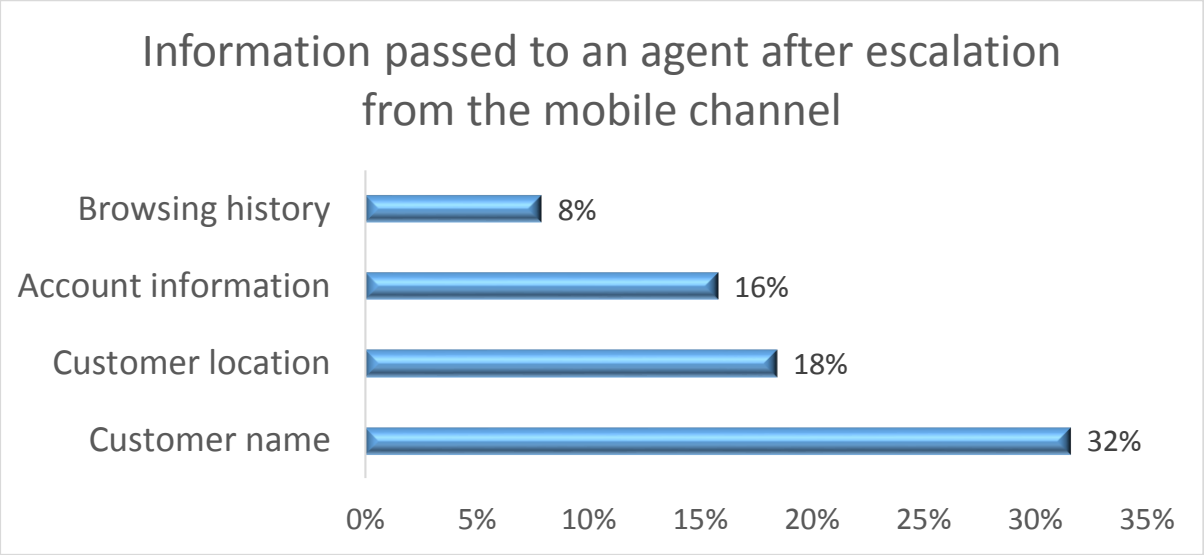
29% of respondents using the mobile channel state that they offer scheduled call-backs to customers. While this is a positive and proactive response, the user is often left in the same situation as if they had called in the first place, as the agent will often have to take them through security and establish what the problem is. However, it should be a more real-time experience for the customer than sending an email.

21% of respondents using the mobile channel offered a web chat option within the mobile site or app, despite this being the channel most closely resembling the activity the user is already undertaking (i.e. using the mobile device to look for information, but typing rather than speaking). Web chat is more immediate than email, and offers a chance to move between self-service and assisted service seamlessly, with the agent being able to push links and video to the user in real-time. Typing on a mobile device can often be quite a frustrating experience, many smartphone devices now support speech recognition.

The opportunity exists for businesses to choose - in real-time - the most appropriate channel to offer to the customer. This can be based upon the customer's importance to the business, their recent history or the activity they are trying to carry out on the mobile app, as well as the organisation's own availability of live agent resources across various channels. This allows the organisation to optimise contact handling by moving customers to areas where there requests will be handled more quickly, rather than having to shift internal resource to match customer demand.

A minority of respondents state that, upon escalation, an agent is provided with some information about the customer. This is most often the customer's name and account information, rather than anything more contextually relevant to what the customer was trying to do, and where they are currently located. In reality, this information is currently rarely used to provide a quicker customer experience (for example, by jumping a call queue or by having details of the mobile session already undertaken screen-popped onto the agent's desktop).

Figure 32: What information is passed to an agent after escalation from the mobile channel?



LIKELY FUTURE DEVELOPMENTS

Looking to the future, solution providers are keen to offer technology that ties the mobile channel more tightly in with the existing voice and data customer support channels, providing a single integrated use experience regardless of initial channel choice, and any cross-channel movement by the customer. One of the key ways to do this is to offer live agent support more easily (for example, through clicking an icon within an app), which provides a context-relevant, geographically-supported and personalised customer experience. The movement between self-service and live service is currently very difficult for many customers – it is certainly not seamless - and actually may involve abandoning the mobile channel entirely as a failure in order to start afresh with another channel. As the customer has chosen originally to use a mobile channel, even a successful outcome with another channel will risk leaving the customer dissatisfied with the company, and less likely to use the mobile channel in future. There is also the danger that because the organisation is unaware that a failed mobile session has been the root cause of a live contact, it will underestimate the reality of cross-channel interaction failures.

On moving from self-service to assisted service, mobile service applications should gather the browsing history, customer information and the context of the session in order to pass this to a live agent. Smartphones are enabled with GPS tracking, so businesses should look to leverage this capability to deliver better customer experiences where possible and desirable. In fact, the inherent capabilities of the mobile device offer businesses huge opportunities to impress their customers, including location-specific information, such as local broadband outages, or the ability to leverage photo-taking functionality on the phone to provide the agent with a clearer picture of the situation (which may be particularly useful for insurance claims, for example).

SMS and outbound calling also offer opportunities for businesses to deliver proactive customer service through the mobile channel, creating a positive attitude. Furthermore, location-specific device information also allows businesses to deliver timely service and relevant marketing messages which can be positives for the customer at that specific place and time.

It is not just the customer interaction points that will become more integrated. Brick-and-mortar stores are also becoming more integrated with their digital component, in order to provide correct inventory levels at store- and company-wide levels, thus matching the capabilities of their dot-com competitors while being able to take advantage of being able to provide in-store services to customers.

Like any technology, application or channel, mobile service has to be seen to pay its way. Quite apart from the importance of fulfilling a customer demand, there are numerous elements to consider when looking at return on investment:

- Call avoidance due to increased use of self-service, although the difference made to the number of IVR sessions should be taken into account: customers may simply be swapping one self-service method for another, rather than avoiding expensive live calls
- Increasing the accuracy of routing by leveraging mobile and customer data means that calls are more likely to go to an agent that can resolve them first-time, impacting positively upon first-contact resolution, call transfer rates, average handle time and customer satisfaction
- Decreased call handling time in cases where mobile browsing information and other contextual data is passed to an agent, enabling them to reduce effort duplication
- Improved customer satisfaction, and decreased customer effort is likely to lead to improved loyalty, revenue and customer advocacy
- Contextual information, such as geographical location, enables greater cross-selling and up-selling opportunities based on improved knowledge about the customer and their circumstances.

SELF-SERVICE CHANNELS: SOCIAL

For many people, the phrase "social media" refers to Facebook, Twitter and possibly Linked-In. At first glance therefore, social contact would seem to have little relevance within a self-service report. However, businesses are increasingly looking to maximise the opportunity that their expanding social media footprint has with customers in order to offer innovative ways of serving the customer, while keeping costs down, and as such, some of these methods should be introduced to give a fuller picture of the whole customer contact mix[9].

A great deal of social service actually takes place away from a contact centre environment, and may even have minimal input from knowledge workers within the organisation. Customer communities and user forums offer a massive resource to customers who perhaps have very detailed and specific questions about a product or service, often along technical lines. Unlike many businesses' technical customer helplines, such customer communities are available 24×7, do not have any wait time, and are usually completely free. Crowdsourcing information tends to be at a product-specific level and is perhaps most useful for very specific, technical queries that fall outside the traditional 80/20 knowledge base model.

Businesses can also benefit from closely tracking the community's views, extracting high-quality, unbiased feedback about products, services and competitors, with an unsolicited opinion being far more likely to be honest and useful than asking someone directly what they think. Independent and objective customer service review websites are emerging into the mainstream, whereby benchmarking of performance metrics and experiences means that potential customers can check out how good a company is to deal with before they use them.

Businesses such as giffgaff (www.giffgaff.com) have a great deal of their customer service strategy based around customer communities. Customers of the mobile phone network are encouraged to find their own solution via the web self-service application, with the next step being to ask the customer community to help. giffgaff's agents are there to help with confidential account information, but this is via email with a published 24-hour turnaround target.

More information about the practicalities of using crowdsourced information within a company's internal knowledge base environment can be found in the section relating to knowledge bases.

[9] For further reading about social customer service, we would recommend the book "Delivering Effective Social Customer Service" by Carolyn Blunt and Martin Hill-Wilson. Wiley - ISBN 978-1-118-66267-0.

Customer communities - effects on brand perception and loyalty

A major academic study of eBay community participants[10] studied how such membership of online communities altered behaviour, psychology and attachment to the eBay brand. Groups of active participants ('enthusiasts', who post messages to forums), and passive members ('lurkers', who may read posts, but do not enter into conversations) were considered.

Customer communities on eBay exist in the form of clubs for people with similar interests, such as specific car types, Barbie dolls or other special interests. There are also live chat rooms, and conversations exist both on-topic and off-topic.

The results of the research, which encouraged people to use communities, and then tracked behaviour, found that "with increasing community participation, customers bid more, won more auctions, paid higher final prices, spent more money for buying items and were more motivated to make purchases if they didn't do so before." The same positive effects were witnessed on the sales side, where community members sold more, made higher revenues and received better feedback than non-community members.

The researchers suggest several reasons why this should be:

- Community membership means that a person is more likely to identify themselves with the brand, using it and recommending it more often
- Members gain educationally from the experience, receiving tangible benefits
- The shared goals and values of the group reinforce member identity
- Trust emerges as a result of asking for, and receiving help and advice, making the member more likely to give back in return
- This trust means that members are less likely to fear fraud, and to hold back from purchasing behaviours
- Continual positive experiences within the community mean that the supporting brand is considered positively, even if it is peripheral to what is happening within the community

The researchers estimate that the increased use of customer communities within eBay that were created by this experiment produced a rise in revenues of £59m over the course of a year. The costs of encouraging greater community participation was around £7,000, a return on investment of almost £8,500 for every £1 spent.

[10] "The Long Term Effects of Joining and Participating in Customer Communities", Algesheimer and Dholakia (Zurich / Rice Universities)

The study's researchers, Algesheimer and Dholakia, identify three types of business which would most benefit from supporting customer communities:

- Those with complex products and services, to offer educational services and to enable rapid peer assistance with technical issues, which can work out extremely expensive otherwise
- Firms with already strong brands and customer identity (e.g. Ducati and Apple iPod are noted by as having positive experiences from running customer communities) where customer communities further strengthen the brand
- Those companies with rapidly-evolving products and services, especially "objects of desire", such as the latest mobile phones or games consoles. Customer communities can offer the most up-to-date information to customers and browsers, who will react by checking the community more frequently so as not to miss anything.

The current prevalence of more orthodox forms of self-service via the social channel are relatively limited, although companies with large numbers of Facebook or Twitter followers have been actively looking for methods to serve this segment of the customer base in an automated fashion, thus reducing costs and providing their customers with greater functionality.

In late 2013, O2, the UK mobile phone operator, made customer account information accessible via Twitter through use of the hashtag #TweetServe. Using one of nine different hashtag commands, customers can now request a range of account information, updates and special offers from the company. Users follow @O2 on Twitter, and after requesting to be followed back, are sent a verification code for security purposes. Upon successful completion of security, the user is sent the information which they have requested.

The credit card company, American Express, allows customers to synchronise their Amex card with Twitter, and to purchase special offers publicised by the company, with the customer then confirming purchase through a specific hashtag tweet without having to login or call the customer representative.

Leading providers of self-service solutions now offer the ability for businesses to provide access to their knowledge base to customers on Facebook without the customer having to visit the company's actual website.

Despite businesses' previous insistence that social media was generally not the primary channel for unhappy customers to use to make a complaint, the following table suggests that things have changed somewhat. 44% of respondents that offer social media as a customer service channel consider it to be extremely useful for acting directly on negative comments and complaints picked up from customers. In fact, this ability to address unhappy customers immediately supplants 'monitoring what is being said about the company' as the most useful business activity for social media.

Positively, for both businesses and customers, there seems to be increased confidence that social media can actually provide customers with a fully-supported customer service channel. 26% of survey respondents in 2013 felt strongly that they were doing so, compared to only 12% in 2012.

Figure 33: Usefulness of social media for business activities

Vertical market	Average score / 10	% scoring 1 or 2/10	% scoring 9 or 10/10
Acting directly on negative comments and complaints	7.7	5%	44%
Monitoring what is being said about the company, products and marketing campaigns	7.3	3%	34%
Delivering product and marketing information to the customer	6.8	8%	28%
Offering customers a fully-supported customer service channel	6.4	9%	26%
Learning more about our competition	5.5	15%	18%

From the options above that were provided to survey respondents, it would seem at first glance as though "offering customers a fully supported customer service channel" would be most relevant to social self-service. However, the passive listening capability that is being built into social applications supports the monitoring of what is being said about the company and its products, as well as learning more about competition, providing the business with valuable, dynamic, real-time information about what the customers are concerned with, and are likely to be asking about next, and allowing them to dynamically realign their FAQs and knowledge bases. This functionality also offers the opportunity for crowdsourced answers - after the requisite quality assurance processes have taken place - to be fed into the wider knowledge base which is accessible across all channels.

SELF-SERVICE CHANNELS: E2E AND 'VIPA'S

it seems that businesses' interactions with the customers of the future will be a highly-polarised mixture of the automated and the personalised.

Moving a large proportion of interactions onto self-service will work for businesses, and having a VIPA (see below) or other third-party seek out the best deals on offer will appeal to many customers. This leads to the conclusion that many customer-agent interactions will be exceptional, such as a complaint, an urgent or complex issue or a technical query that an FAQ or customer community couldn't solve. It is also likely that whole segments of the customer base who don't want automation will be handled directly by live agents in many cases.

The VIPA is something which isn't yet widely available, but which is inexorably on its way, being driven by improvements in technology and the desire of the customer of the future to get the best deal with the least effort. Perhaps the most widely-used (albeit very basic) version of the VIPA is the iPhone's "Siri", which provides basic web search functionality based on speech recognition. It is still a very long way from being a VIPA.

'VIRTUAL INTELLIGENT PERSONAL ASSISTANTS'

Most self-service scenarios suggest a world in which customers speak directly to 'intelligent' systems. The world of the 'virtual intelligent personal assistant' (VIPA) - turns this idea on its head, postulating an e2e world where the customer delegates many business interactions to a pseudo-intelligent device.

Storing information on a VIPA device - such as personal preferences, financial details and individuals' physical profiles - is the first step, and one which is possible to do today. Customers of the future will then instruct the device to research the best deals for products and services, and to come back to the device's owner with the best selection. The VIPA would 'call' the relevant contact centre (which would in fact be either a number of back-office company systems or possibly a live agent in some cases) and could even purchase the best deal without having to involve the owner in any way.

VIPAs may be used in association with knowbots and smart assistants (also called intelligent agents), which roam the web for answers to questions or situations, and could act as a third-party broker between the customer and a business. Price comparison sites act today as a type of first-generation smart assistant, but are entirely reliant on accurate and complete data inputs being provided by suppliers and the site's owners.

If VIPA technology could be relied upon to work, and standards of interoperability between VIPA and businesses were implemented, then this immediate and extensive market knowledge could create a 'perfect market' for commoditised products and services, with major impacts on existing businesses.

SUPPLIER PROFILE

KPS Knowledge Management Software

Knowledge Powered Solutions (KPS) offers knowledge management software to improve customer service and deliver operational efficiencies. KPS's solutions are used by contact centres, helpdesks, and through web-based self-service.

KPS has over 100 client organisations worldwide, including Credit Suisse, Serco, United HealthCare, BT, Stanford University Hospital & Clinics, Contact 121, Department of Health (Australia) together with many others via their partner network (including Network Rail, City of Minneapolis, City of Ottawa, Aberdeenshire Council, Devon and Cornwall Police, Surrey Police and Lexus).

KPS's knowledge management software has five strands of functionality:

Search: natural language search allows users to ask questions using normal speech, rather than by typing in keywords that may be found in the documents required. These are often written formally, using terms which do not reflect the language used when asking a question: the problem for the customer can be not knowing how to phrase the question. The initial indexing process automatically creates key words and patterns for each document, removing the need for manual meta-tagging of content. Content support is available in 10 European languages, with customers able to view documents in alternative languages at the click of a button.

Capture: the system searches multiple knowledge sources, indexing and listing as it goes, gathering information automatically from other applications, websites, and shared documents and writing content directly into the system. Those employees with the relevant permissions may edit documents directly within the search results, handling quick edits and document reviews instantly if information has been flagged as needing such.

Share: Hot topics can be displayed to users as soon as they access the knowledge base, ensuring no-one misses important updates, which is useful for making sure that contact centre staff are aware of important new information. The system generates a list of top documents that are most successfully used to resolve searches, making this available to both internal employees and external customers. The list is constantly updated by the knowledge base, based on actual usage.

Manage: leverage existing knowledge sources, without the need to move or duplicate files or information. The automatic index process determines patterns/concepts within document sets, and automatically extracts the keywords, reducing set-up time and ongoing maintenance effort, and enhanced content management helps to handle data expiry, document formatting and other critical and potentially time-consuming tasks.

Measure: identifies user behaviour, document usage, search success rates and knowledge gaps, allowing businesses to identify successful data sources, fill knowledge gaps and act upon user training needs.

KPS notes that while there is an increase in interest in mobile self-service, most of its customers are more interested in improving the self-service functionality on their own website, as well as avoiding calls and emails, the latter of which can be very lengthy queries. KPS notes that it is possible to publish answers to the knowledge base very quickly if the answer that was e-mailed out by an agent was found to be successful, and marked as such.

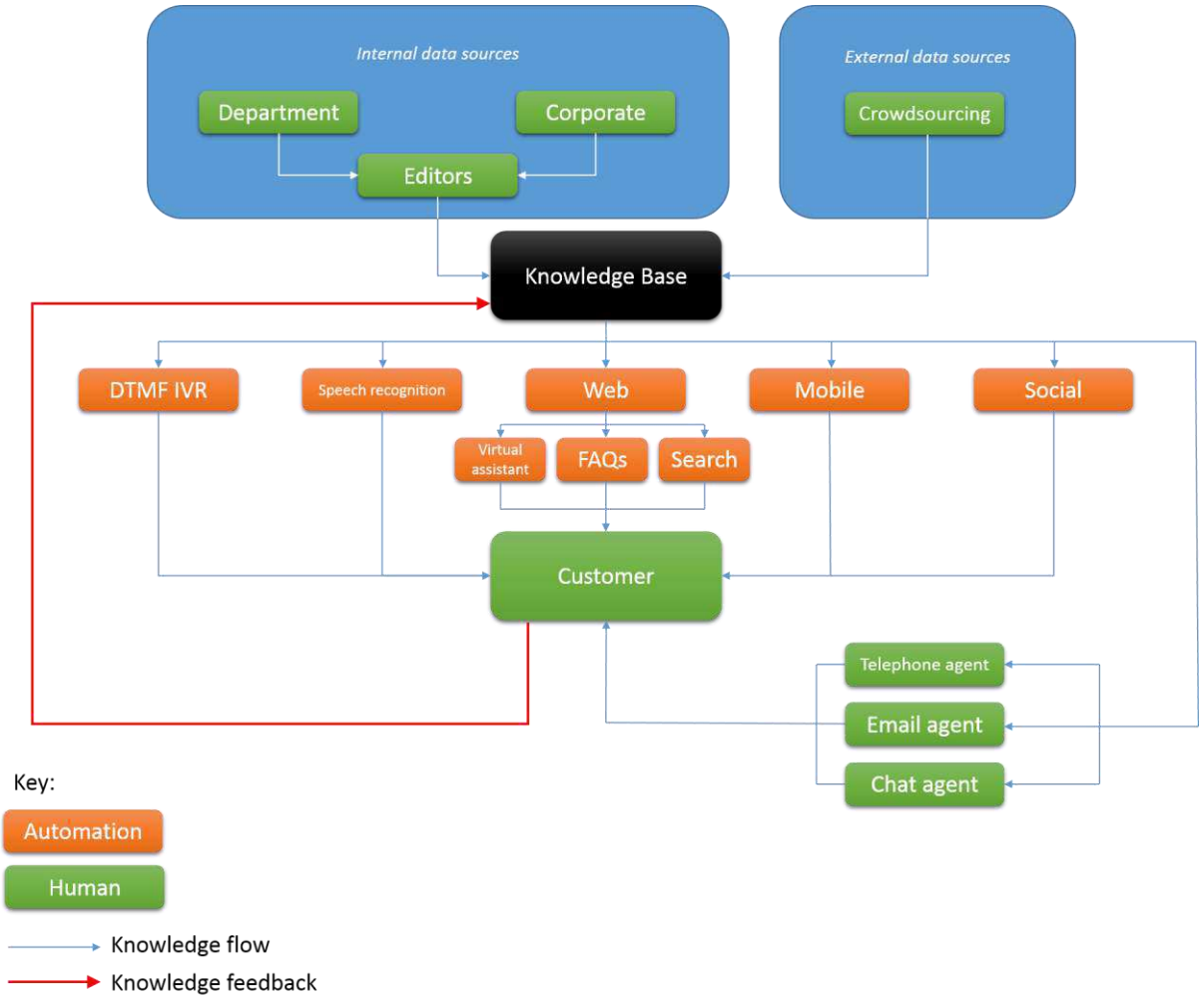
Looking to the future, KPS Development are currently focused on user interface personalisation, with end-users and administration staff setting the look and feel of the system, and the system being made more configurable depending on the type of user.

Return on investment comes from reduced training time (especially in the outsourcing sector), call or email avoidance, reduced escalation and reduced average handle time, as well as the improvement in customer experience and effort.

CONCLUSIONS

While the future of customer contact will involve extremes of personalised live service on the one hand, and the increasing use of automated systems on the other, the following diagram shows the synergies and cooperative processes that should exist within a sophisticated, integrated self-service and live contact customer environment.

Figure 34: Automation and human roles in knowledge flow and feedback



The automated self-service applications, whether accessed via voice or web, draw from the single, centralised knowledge base. If this proves insufficient to answer the customer's query, live agents can be brought into play, through the most appropriate channel. The vital importance to the success of the overall system is the feedback loop initiated by the customer: by marking and rating the answers they have been provided, whether directly through the self-service application, or via an agent, the knowledge base can be fine-tuned. On an ongoing basis, internal and external data sources improve the quality of answers, plugging any gaps that have been identified within the feedback process.

The last word on self-service should be left to the market itself. Recent ContactBabel research shows that investment in self-service applications runs a very close second only to the necessary - almost involuntary - upgrades that are required on an ongoing basis to the telephony infrastructure within the contact centre environment.

Figure 35: Most important areas of IT expenditure in 2014-2015

Ranking	Expenditure type	1st	2nd	3rd
1st	ACD / IP / telephony infrastructure	21%	9%	13%
2nd	Self-service	19%	9%	11%
3rd	Web chat	9%	2%	5%
4th	CRM	8%	9%	3%
5th	Workforce management	7%	7%	12%
6th	Multichannel	6%	11%	2%
7th	Integration	6%	10%	7%
8th	Interaction recording	5%	2%	3%
9th	Cloud / hosted	4%	2%	0%
10th	Social media	2%	10%	5%

Self-service is one of those rare examples of a technology, application or business process that can truly be said to be 'win-win' for customers as well as businesses. Perhaps a case can be made that some past implementations have been more about cutting businesses' costs than providing improved customer service. However, the joined-up thinking now being shown both by businesses and solution providers, and the increasing acceptance that it's now an omnichannel world shows a coherent strategy emerging that also has the customer experience very much in mind.

ABOUT CONTACTBABEL

ContactBabel is the contact centre industry expert. If you have a question about how the industry works, or where it's heading, the chances are we have the answer.

The coverage provided by our massive and ongoing primary research projects is matched by our experience analysing the contact centre industry. We understand how technology, people and process best fit together, and how they will work collectively in the future.

We help the biggest and most successful vendors develop their contact centre strategies and talk to the right prospects. We have shown the UK government how the global contact centre industry will develop and change. We help contact centres compare themselves to their closest competitors so they can understand what they are doing well and what needs to improve.

If you have a question about your company's place in the contact centre industry, perhaps we can help you.

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