CONTACTBABEL

The Inner Circle Guide to Cloud-Based Contact Centre Solutions

Sponsored by

Enghouse Interactive

"The Inner Circle Guide to Cloud-based Contact Centre Solutions (4th edition)"

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There are easier ways to migrate to the Cloud!

Enghouse Interactive provide **Cloud Contact Centre** software for your profitable, customer-centric business.

CONTENTS

LIST OF TABLES

Enghouse Interactive is the world's most reliable contact centre technology provider. Our global brand is built on our track-record of consistently honouring our commitments – to our customers, our staff and our shareholders.

Enghouse Interactive, a subsidiary of Enghouse Systems Limited (TSX:ENGH), is a leading global provider of contact centre software and service solutions that deliver enhanced customer service and transform the contact centre from a cost centre into a powerful growth engine. Our practices and solutions enable businesses to leverage meaningful daily customer interactions to extract key insights used to deepen customer loyalty and uncover new opportunities to add value and profitability.

Our comprehensive portfolio of interaction management solutions spans omni-channel contact centres, computer telephony integration (CTI), self-service, knowledge management, operator consoles, call recording and quality monitoring, media voice services, outbound diallers and real-time video collaboration.

Supporting over 10,000 customers, in 120+ countries, Enghouse Interactive works within any local regulatory environment and supports any telephony technology, whether deployed on premise or in the cloud, ensuring that our customers can be reached by their customers – anytime, anywhere and via any channel.

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INTRODUCTION

"The Inner Circle Guide to Cloud-based Contact Centre Solutions (4th edition)" is one of the Inner Circle series of ContactBabel reports. Other subjects include The Inner Circle Guides to:

- AI, Chatbots & Machine Learning
- AI-Enabled Self-Service
- Contact Centre Remote Working Solutions
- Fraud Reduction & PCI DSS Compliance
- Interaction Analytics
- Multichannel Workforce Optimisation
- Omnichannel
- Outbound & Call Blending.

These can be downloaded free of charge from www.contactbabel.com.

The Inner Circle Guides are a series of analyst reports investigating key customer contact solutions. The Guides aim to give a detailed and definitive view of the reality of the implementing and using these technologies, an appraisal of the vendors and products available and a view on what the future holds.

The Inner Circle Guides are free of charge to readers. Research and analysis costs are borne by sponsors - solution providers in the specific area of study - whose advertisements, case studies and thought leadership pieces are included within these Guides.

Solutions providers have **not** had influence over editorial content or analyst opinion, and readers can be assured of objectivity throughout. Any vendor views are clearly marked as such within the report.

As well as explaining these solutions to the readers, we have also asked the potential users of these solutions whether they have any questions or comments to put directly to the report's sponsor, and we have selected six of the most popular to ask. These branded Q&A elements are distributed throughout the report and give interesting insight into real-life issues.

Please note that statistics within this report refer to the UK industry, unless stated otherwise. There is a version of this report available for download from www.contactbabel.com with equivalent US statistics.

CLOUD: WHAT IS IT AND WHO'S USING IT?

CLOUD: TERMS & DEFINITIONS

Having technology provided and managed by a third-party away from a customer's premises is not a new idea, with service bureaux and ASPs (application service providers) being around for many years. PBX functionality through Centrex has been available since the 1960s, with IVR and ACD functionality often being offered through a network provider too. In the past few years, the success of SaaS (Software-as-a-Service) solutions, especially for CRM, have paved the way for widespread creation and adoption of cloud-based solutions, both from incumbent vendors and solution providers new to the industry, with the take-up of IP and movement towards more open systems also driving the use of cloud. The recent requirement for mass homeworking has further strengthened the hand of those who say that the argument for cloud has been won.

The economic downturn's negative effect on capital investment made businesses demand more flexible pricing alternatives, which made the pay-as-you-go, operating expense of cloud-based solutions an attractive proposition. Many CPE (customer premise equipment) vendors have reacted to this demand by offering rental-based options similar to their cloud competitors, although CPE provision will still require payment for hardware, testing and other items.

The modern contact centre has a multitude of applications supporting it, with hardware, middleware and networking equipment around and inside it. The traditional method of deploying these resources has been on a CPE basis, with the business's IT resource implementing and maintaining it. Now, the vast majority of this equipment, functionality and supporting resource is available in a third-party hosted environment, through one of the various types of cloud-based delivery.

Broadly, there are five types of functionality that contact centres use:

- Contact centre functionality: ACD/PBX-type functionality (including interaction routing and queuing), CTI, IVR (routing and self-service), outbound dialling
- Desktop applications: CRM, customer management systems, helpdesk applications, agent desktop, access to knowledge bases, multichannel handling applications, scripting, web chat & collaboration
- Management applications: workforce management, QA/QM, call recording, interaction analytics, reporting, MIS and business intelligence, eLearning, workforce optimisation, customer experience feedback
- Enabling technology: security, databases, payment technology, middleware, IP networks and other common architecture or hardware infrastructure
- Other hardware: IP phones, PCs or desktop terminals, headsets, etc.

Cloud-based solutions are the latest in a line of alternatives for businesses to owning and running their own technology. Here are explanations of some of the terms that readers may have encountered in researching cloud-based contact centres.

- **Cloud** is the delivery of computing and storage capacity as a service to different business, organisations and individuals over a network. The acronym CCaaS (Contact Centre as a Service) is now widely used, and may consist of Infrastructure as a Service (IaaS) - servers and storage space, Platform as a Service (PaaS) - operating systems and web servers, and Software as a Service (SaaS) - the functionality of software available on demand without the need to own or maintain it. The cloud is characterised by huge scalability and flexibility, (often, but not always) shared resources, a utilities approach to billing (pay for what you use, for example) and an abstraction of obvious on-site infrastructure.

  There are various deployment models:

  - Public cloud: applications, storage, and other resources are made available by a service provider, often offered on a pay-per-use model. Public cloud service providers own and operate the infrastructure and offer access via the Internet

  - Private cloud: infrastructure operated solely for a single organisation, whether managed internally or by a third-party and hosted internally or externally. They require management by the organisation or its third-party

  - Virtual private cloud: a deployment model that pulls in public cloud infrastructure-as-a-service (IaaS) while running the application on-premise or in a private cloud, in order to improve disaster recovery, flexibility and scalability and to benefit from Opex-based costing while avoiding expensive hardware purchases

  - Community cloud shares infrastructure between several organisations from a specific community with common concerns (security, compliance, jurisdiction, etc.), whether managed internally or by a third-party and hosted internally or externally. The costs are spread over fewer users than a public cloud (but more than a private cloud), so do not gain as much from cost reductions. It may be a more appropriate deployment model for departments within government or public sector bodies, than within commercial organisations, for example a department offering Contact Centre as a Service to other departments or agencies within their network

  - Hybrid cloud is a composition of two or more clouds (private, community, public or a linked cloud/CPE solution) that remain unique entities but are bound together, offering the benefits of multiple deployment models. By utilizing "hybrid cloud" architecture, companies and individuals are able to obtain degrees of fault tolerance combined with locally immediate usability without dependency on internet connectivity. Hybrid Cloud architecture requires both on-premises resources and off-site (remote) server based cloud infrastructure.

- **SaaS (Software as a Service)** is a model of software deployment whereby a provider licenses an application to customers for use as a service on demand. SaaS software vendors may host the application on their own web servers or download the application to the consumer device, disabling it after use or after the on-demand contract expires. The on-demand function may be handled internally to share licenses within a firm or by a third-party service provider sharing licenses between firms.

  On-demand licensing and use alleviates the customer's burden of equipping a device with every conceivable application. It also reduces traditional End User License Agreement (EULA) software maintenance, ongoing operation patches, and patch support complexity in an organisation. On-demand licensing enables software to become an operating expense, rather than a fixed cost at the time of purchase. It also enables licensing only the amount of software needed versus traditional licences per device. SaaS also enables the buyer to share licences across their organisation and between organisations, to reduce the cost of acquiring EULAs for every device in their firm.

  Using SaaS can also conceivably reduce the upfront expense of software purchases, through less costly, on-demand pricing from cloud providers. SaaS lets software vendors control and limit use, prohibits copies and distribution, and facilitates the control of all derivative versions of their software.

- **CPaaS (Communications Platform as a Service)** is a cloud-based platform that allows the embedding of real-time communication functions into a business's own applications and workflows: voice, video and SMS can be integrated into mobile or web-based applications by way of APIs, eliminating the need to build infrastructure or individual interfaces.

- **CCaaS (Contact Centre as a Service)** is a wide description of contact centre software that is hosted or built natively in the cloud instead of on client premises, and will usually include ACD routing functionality, IVR and often analytics, dialling functionality etc.

- **Hosted** solutions have similarities to SaaS in that the application is hosted off the customer's premises, but may not actually be managed by the service provider. A hosted solution may be an individual instance of an application running on a single server dedicated to the customer, restricted in scalability by its finite nature. Although this may allow greater control and flexibility, it can be more expensive and there is less redundancy. It may be thought that all SaaS solutions are hosted, but not all hosted applications are SaaS.

- **Network-based solutions** are marketed as solutions with equipment physically located in multiple locations, permitting users to access the various services via a combination of the contact centre's internet connection and the standard PSTN networks. This allows complete geographic independence and disaster recovery (DR) solutions.

- **Multi-tenancy** refers to where a single instance of the software runs on a server, but serves many customer organisations. Clients' data and configuration are separated virtually but the same actual hardware, software versions and databases are used. This deployment model is likely to be able to offer functionality at a lower cost due to the economies of scale possible.

- **Multi-instance** occurs where separate software instances or versions (and possibly actual physical hardware) are provided for each individual business. This deployment option is considered effective for complex and deep integration, but is unlikely to be offered at a similar cost to a multi-tenant option.

- **Hardware virtualisation** masks from users the physical characteristics of the platform, hosting multiple isolated instances of an application on one or more servers. The same image can be used on multiple sites, whether customer-owned or hosted.

WHAT'S CHANGED SINCE 2012?

In the first edition of this report, written in 2012, it is probably fair to say that the main driver for cloud was that of Opex payments, rather than capital expenditure. While the pay-as-you-go, or monthly rental model is still an attractive proposition, it is far less important now. Solution providers point out that CPE deployments can now often be paid for in an Opex model, and that the movement to cloud is more about the functionality, agility and scalability that this model offers.

It is also the case that operations have generally become more complex, certainly in the number of channels offered and the proportion of interactions going through them. It is no longer possible for many companies simply to focus upon voice, and the attendant need to provide a single view of customer regardless of channel acts as a inhibitor to the siloed approach. Quality monitoring, analytics, workforce management and the unified desktop are some of the tools used today that take all of the siloed data and try to put it into a holistic context, taking advantage of all the different data sources, and the expansive, open nature of cloud solutions encourages this outlook.

Looking at the inhibitors, while concern over data security is still a real inhibitor for some, the concerns that many reluctant potential customers hold seem to be much more specific to their business. The advent of GDPR has created a new infosec concern.

One of the main differences to have occurred is that cloud is now seen as a genuine alternative to CPE for even the largest of enterprises, not just smaller operations. Some state that they originally focused their product and marketing efforts on the small and medium contact centre sectors, but that many of their customers are now those with many hundreds (if not thousands) of agents. There is an increased familiarity and trust in cloud-based solutions, both in decision-makers' personal (i.e. non-business) lives, and in the prevalence of cloud-based enterprise applications, which is meant that cloud as a deployment model has widespread acceptance.

Solution providers note that there has been great growth in cloud solutions that support outbound sales activity, where the pay-as-you-go model allows outsourcers to have some control over their profit margins depending on the amount of work that they have, as well as benefiting from the immediate use of added functionality that cloud-based solutions provide. It is common for cloud providers to tightly integrate with CRM and contact management packages, and adding dialling functionality supports the consultative style of selling, giving agents the opportunity to research their customers before they dial. This is not just the case for traditional contact centres, but also for organisations which may not see themselves as having a contact centre, but which carry out large amounts of sales communication with customers and prospects, albeit in perhaps a more informal environment. Cloud-based solutions offer such enterprises the benefit and efficiency of the contact centre world, without the high levels of sunk cost and operational and technical expertise that a CPE solution would demand.

Solution providers report that there is far less effort needed these days to explain the business benefits of cloud, noting that the widespread adoption of cloud-based CRM solutions has done a lot of the market education work for them. Almost unanimously, they note that while issues around cost and productivity are still important, organisations as a whole tend to be more concerned about the customer experience and service delivery, and that these are the messages that the market listens to.

Many solution providers' cloud customers had tended to come from CPE environments which have reached end of life - which may then choose to migrate to cloud using the same provider, or come from a competitor - rather than from competing cloud vendors, although we are now seeing second- and third-generation uses of cloud amongst the early adopters. It is noticeable in the next section that the actual overall use of mature technologies such as call recording has changed little in the past few years, but that the deployment method has moved strongly from CPE to cloud.

Once the dust settles, the largest boost to the widespread acceptance of cloud-based solutions will be seen through the successful rapid deployment of remote working contact centre agents as a reaction to the coronavirus crisis. The fact that so many operations moved within days to a cloud-based environment and still managed to support customers as effectively as possible in the circumstances is proof that cloud's disaster recovery and business continuity advantages cannot be overlooked or underestimated.

DRIVERS & INHIBITORS

The many factors influencing the uptake of cloud-based solutions can be grouped into several areas, and it is important to remember that a factor (e.g. security) can be both a driver and an inhibitor:

- **Financial**: how does cloud affect the investment and ongoing expenditure connected with technology and the operations of the contact centre?
- **Flexibility & Agility**: how can cloud-based solutions help businesses with changing interaction volumes and distributed operations?
- **Supporting Remote Working:** how does cloud support business continuity and work-at-home?
- **Functionality**: what is the effect of cloud-based solutions on the functionality available to the contact centre?
- **Security**: does cloud bring a greater risk to security, or the opposite?
- **Control**: can a contact centre change how it operates quickly enough?
- **Integration & Customisation**: while out-of-the-box functionality can be quick and cheap enough to get things moving, what if businesses need more a personalised approach?
- **Performance & Reliability**: how does cloud affect the contact centre's ability to deliver its service?

FINANCIAL

Cloud-based solutions are sometimes thought of as having a 'pay-as-you-go' financial model that allows business of all sizes to move away from high front-end expenditure, in favour of a more manageable operational expenditure approach without any overspending. While this is true in some cases, it is perhaps better to consider the financial opportunities of cloud as being related more to shifting expenditure from capital expenditure (Capex) to operational expenditure (Opex).

Small and mid-size companies in particular may not have the commitment or ready access to cash to make the necessary capital expenditures for expensive CPE. As a result, making the shift from Capex to Opex is especially relevant for these organisations, although the traditional CPE vendors have reacted by offering a lease/rental option as an alternative to the traditional lump sum plus maintenance fee pricing structure.

Cloud offers contact centres a way forward without relying on capital investment:

- Businesses can scale down future customer premises equipment (CPE) investment, with a resulting decrease in capital expenditure
- Services are bought using a per-concurrent-user or even per-hour/per-minute pricing model, which helps to keep operating expenses manageable and controllable
- Outright purchase of equipment isn't for everyone, perhaps for reasons of budget or the ability to maintain the systems
- There is the opportunity to scale up quickly as demand dictates, without purchasing lots of redundant licences or the hardware to support them
- Remote working becomes a much easier proposition
- Low-risk ability to start up, move, expand or trial new functionality without risking existing business plans
- Business retain the freedom to downscale, change targets and react to meet demand, rather than commit themselves to long-term arrangements needed to justify CPE investments.

Apart from the general, Opex-driven payment model, there are a number of specific scenarios which could impact cost positively for organisations:

- For outsourcers and telemarketers who may have call volumes that vary dramatically depending on campaign levels, solutions with a flexible pay-per-usage pricing structure are particularly important. When production levels are the highest, and agent time is being billed to clients, the cost will increase. When there is less work, the cost drops accordingly. This allows the outsourcer to reduce risk, being able to predict one of the elements involved in profitability with much greater accuracy

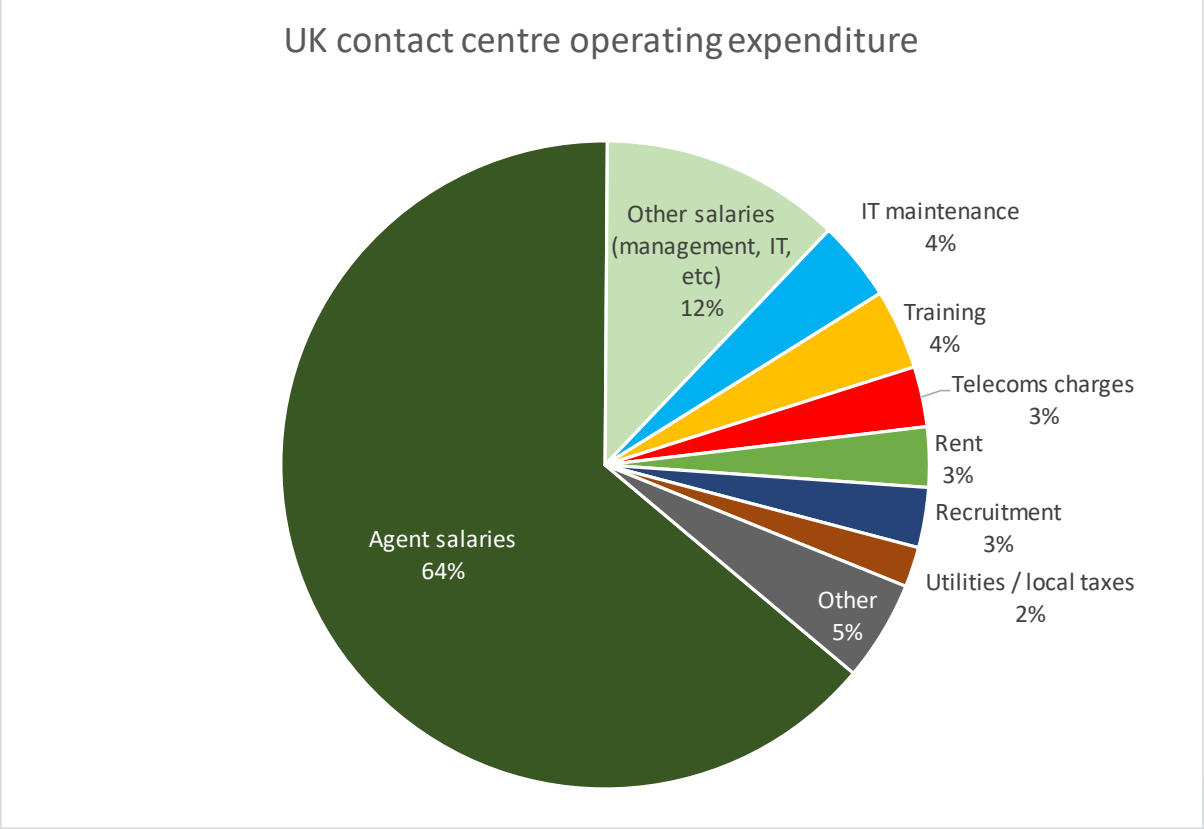
- Cloud offers the freedom to choose location(s) which can affect ongoing costs considerably in cases where property leases or excessive rental costs are an issue, as well as offshore. This will also support either full or partial remote agent working scenarios

- A cloud solution can offer organisations the opportunity to consolidate multiple suppliers into fewer (or even a single supplier), reducing the time spent on the supplier management role through having one point of contact and a single invoice.

One of the major triggers for the move to cloud has been that infrastructure and applications have reached the end of life, with vendors indicating that they will no longer provide maintenance or support. At such a point, organisations have no choice but to consider their options, one of which is almost always cloud. Solution providers note that the financial benefits of cloud are not simply related to the cost model, noting that the decision point for some businesses can be where they see going forward a loss in potential revenue caused by the existing contact centre's inability to deliver what is needed as it may be unaffordable or impractical in a CPE environment.

A contact centre's ongoing costs are mainly spent on staffing, with around three-quarters of operating cost spent on agents, IT staff and management. As cloud-based solutions are closely linked with moving from Capex to Opex, it is worth considering how a movement from CPE to cloud-based solutions could impact on expenditure in each of these Opex categories, thus reducing or substituting existing expenditure within the Opex budget and freeing up budget with which to pay the cloud provider.

Figure 1: UK contact centre operating expenditure



Agent salaries

At 64% of Opex, any small change in salaries will make a large impact on overall spend. Moving to cloud means that companies can be more flexible in their staffing arrangements, either through having agents in lower-cost locations (either onshore or offshore), and by supporting a more volume-driven staffing schedule (e.g. by having remote workers log on for short shifts when they are needed, rather than the full eight hours). It may also be the case that agents place an actual monetary value on the opportunity to work from home, reducing wage inflation pressure.

Seasonality is also addressed, through being able to add and shed agents as needed depending upon the needs of the business throughout the year, without having to purchase all of the licences needed outright.

Cloud offers various ways to reduce or otherwise manage overall salary costs, through contact centre virtualisation in all of its forms.

Other salaries (e.g. management & IT)

Businesses can experience a decrease in development & implementation costs and attendant IT management salaries, as cloud solution providers will already have solutions up and running. Moving physical hardware off-site also means that these maintenance requirements will no longer be an issue for the contact centre. As a general rule, cloud rarely makes a major impact on IT resourcing through staff number reduction, as most IT departments are overworked and have a backlog of projects that they are then able to dedicate themselves to.

For multisite operations, moving to the cloud will offer greater opportunities for having a single-cross-site management team in place, with call routing and self-service controlled at a single point, reducing management costs as well as improving consistency and increasing the available labour pool. Infrastructure and processes which are held in the cloud can avoid issues which CPE resources can experience, such as unnecessary duplication across multiple sites and a corresponding increase in management costs for configuration, administration and performance checking.

Rent, utilities & local taxes

Although businesses are usually tied into contracts for their premises, a cloud approach to technology means that a growing business can look for value elsewhere if a new operation is to open or a contract break occurs, without the upheaval and downtime associated with moving on-site hardware to another location. Moving equipment to the cloud will also reduce energy expenditure.

Additionally, as cloud supports a remote worker/home agent scenario more cheaply, this can reduce the need to find additional physical space at a central location if the operation is growing, as well as assisting with business continuity.

Telecoms charges

Call queuing at the network level also saves money. In multi-site operations - rather than pass a call down to a contact centre which may not have an agent immediately available to take the call – it makes sense to queue the call at the network level until an agent is capable and available to take it. The call is then passed – once – to the agent in the specific contact centre.

IT maintenance

Cloud-based solutions mean that the need for large server farms is reduced or removed, lowering the cost of hardware and maintenance. Software upgrades are carried out at network-level, reducing cost and upheaval.

Training & Recruitment

Cloud does not offer a great deal of opportunity for saving costs on training, although there may be some opportunity for recruitment savings based on having the ability to locate contact centres or homeworkers anywhere, including in lower cost areas, and through supporting the retention and attraction of high value agents by offering a homeworking option.

Other expenditure

Apart from these instances of reduced Opex, cloud offers other opportunities to cut down on unnecessary expenditure, including:

- Operations with fluctuating traffic (either on a seasonal or more frequent basis) do not have to buy sufficient software licences and telephone line capacity to cover the peaks, as many cloud providers offer the possibility of adding short-term licences on a pay-as-you-go basis

- The cloud allows users cost savings associated with not having to own or run their own hardware. Although servers may be a commodity purchase, the energy costs involved in running them can far outweigh the initial purchase and the majority of computing power generally sits idle in any case

- Disaster recovery may be offered as part of the cloud package, reducing the cost of purchasing this service elsewhere.

Shifting Capex to Opex provided options for small and medium contact centres when budgets were tight, and this is something that many businesses of all types now face. However, even those businesses that were amongst the most cost-sensitive of operations now consider the cloud to be at least as much about flexibility, functionality and freeing up resources as it is about cost.

However, in the interests of balance, we should also consider cost as being a potential inhibitor. While this may seem strange, using a cloud solution for a long time may end up costing more than purchasing the technology outright. The truth of this will be determined in the TCO/ROI study that will be undertaken before any decision is made about cloud, and will need to include related elements such as the cost of CPE system purchase and application updates, as well as the greater benefit and lower cost associated with more frequent upgrades and recent functionality inherent in the cloud model. The cost of terminating a contract should also be considered as a potential risk element in the cost equation, if the move to cloud does not work out.

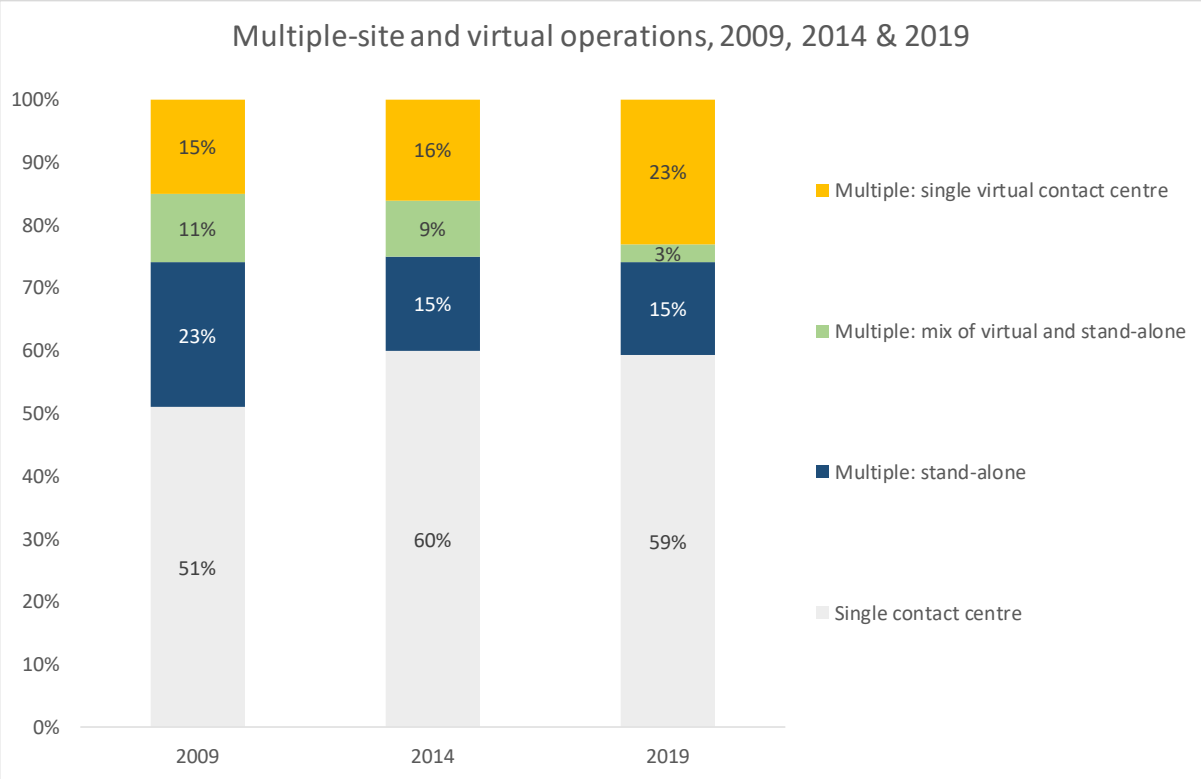
FLEXIBILITY & AGILITY

The maturity of Western contact centre markets, coupled with the high levels of mergers and acquisitions in industries such as utilities, telecoms, insurance and finance mean that many large companies are now in a position where they provide customer contact via multiple sites, often running on disparate technologies. Cloud-based contact centre solutions allow a way out of proprietary systems, lack of interoperability and the expense of maintaining many different systems without gaining from economies of scale.

Of the 41% of UK operations that are multisite operations, 56% run as a single virtual contact centre, with 7% a mixture of virtual and stand-alone operations, and 37% as separate operations.

One of the historically strongest reasons stated by respondents for staying non-virtualised was that there were too many different systems at each location to work together: a problem that cloud-based contact centre solutions address.

Figure 2: Multiple-site and virtual operations, 2009, 2014 & 2019

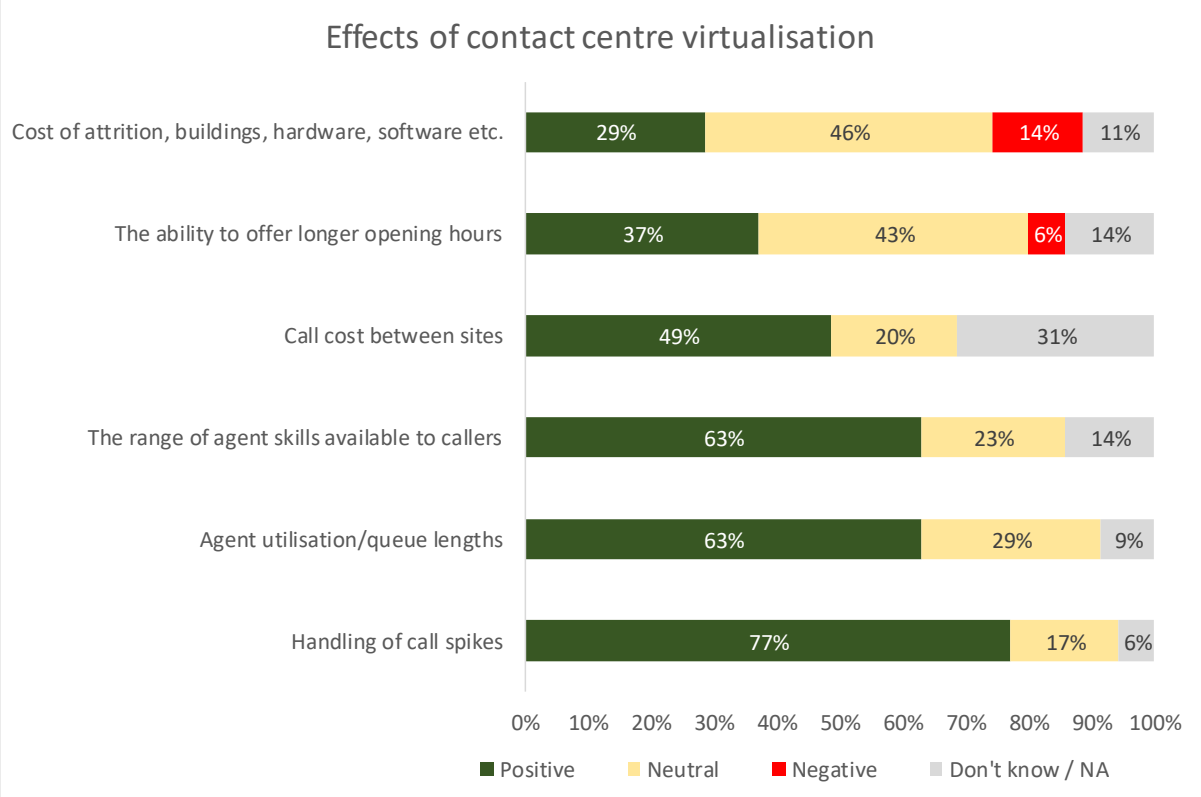


There has been a slight rise in stand-alone single contact centres, with a decrease in stand-alone multiple sites from 23% to 15% over the past 10 years. There has also been a significant drop in organisations with a mix of virtual and standalone operations, and a corresponding increase in the proportion of organisations with a single virtual contact centre.

While the reasons for this cannot be proven, it could be that organisations with multiple standalone operations have at least tried to become more virtual. There may have been technical, operational or budgetary issues preventing them originally having a single virtual site which have now been resolved, allowing more companies to use fully virtual operations. The rise in single contact centres may have come as a result of the closure of small operations and the desire to increase agent numbers under one roof, and over the past few years, the press has reported numerous contact centre closures in multisite organisations where the remaining site then increased its size.

Respondents with virtual contact centres have generally been very pleased with the gains in efficiency and service level that they have experienced. The ability to smooth out call spikes by moving them between contact centres, and the reduced wait times were particularly mentioned, although all of the potential virtual contact centre benefits mentioned were rated positively, showing a maturity and bedding-down of the technologies. However, there is some lack of unanimity amongst respondents about the effect of virtualisation on the net cost effect.

Figure 3: Effects of contact centre virtualisation



On a day-to-day basis, cloud-based contact centre solutions can theoretically offer a better service level and a simpler environment for businesses to operate in.

Reduced need for IT support and implementation

Having hardware and software based in the cloud means that ongoing system maintenance is significantly reduced, as it is the job of the cloud provider to handle such matters. This is also the case in terms of implementing new systems, with new users generally stated to be up and running in a matter of weeks. In a crisis, many cloud solution providers have found themselves delivering remote working solutions within a couple of days, although these would not necessarily be 100% voice.

However, the level of customisation may be less than that in a CPE environment with dedicated IT and business resource available, depending on the cloud deployment model, and potential cloud users should make sure that any bespoke functionality can be used or replicated in the new system.

Larger pool of agents to choose from

Treating multiple contact centres as a virtual contact centre allows great efficiencies can be made through economies of scale. This is especially true where businesses are using skills-based routing. All agent competencies are displayed to the scheduler – regardless of agent location – who can be more flexible, simply because the available resource pool is so much more deep.

Cloud enables advanced features to be deployed without complex and possibly unreliable call flows, while offering disaster recovery and risk minimisation. For example, queueing interactions in the cloud allows for the searching and identification of relevant agents based on skill and requirements before the call is routed. The distributed nature of cloud enables users to state where they are working from at a particular time, giving single number contactability as the cloud service will find them.

The support of contact centre virtualisation that cloud solutions provide is also applicable to homeworking. 26% of UK contact centres used homeworking in 2019, with a further 9% running a homeworking trial.

For more information about homeworking, see ContactBabel's report "The Inner Circle Guide to Contact Centre Remote Working Solutions", as well as the next section of this report, "Supporting Remote Working".

Short-term scalability

The cloud offers great flexibility in adding or shedding agents and user licences, of particular relevance to businesses which have substantial changes in call volumes over a year (such as the seasonality experienced by healthcare providers in the US, retailers and travel agents), the nature of outsourcing contracts or companies which have to react quickly to handle event-driven call spikes (e.g. an emergency weather situation affecting utilities companies).

Scalability is key: many contact centres want to be able to gear up and down to suit business demands and cope with peaks and troughs without unnecessary expenditure, and with cloud-based solutions they can do this on a daily or even intraday basis if necessary, instead of spending on capacity that they may not use for months.

Some solutions offer a hybrid model, a mixture of CPE and CCaaS, which allows them to instantly access extra capacity on demand, depending upon the needs of the business. This can help to break down traditional barriers around providing cost-effective handling of seasonal volume spikes, peak periods, new campaigns and homeworkers. Some solution providers report that hybrid is an effective and popular way of offering an elastic demand capability and disaster recovery, whereas others have found that in their experience, hybrid is more of a stepping stone to pure cloud implementation, used as reassurance and proof of concept by businesses that were not 100% convinced.

Centralised management

In a multi-site, cloud-based environment, self-service and call routing scripts can be held centrally to increase the speed to alter these as required, and also to maintain consistency across sites. Infrastructure and processes which are held in the cloud can avoid issues which CPE resources can experience, such as unnecessary duplication across multiple sites and a corresponding increase in management costs for configuration, administration and performance checking.

END-USER QUESTION 1: HOW CAN WE HAVE THE BACK-OFFICE, KNOWLEDGE WORKERS AND HOMEWORKERS TO ASSIST WITH CUSTOMER CONTACT?

As the Customer Experience (CX) becomes the key competitive differentiator for many organisations, it is important that enquiries are dealt with quickly and efficiently. To do this companies must reach beyond the front-line contact centre agents, drawing in experts from across the business or from third parties who can deliver the expertise to resolve issues the first time, every time.

At Enghouse this is something we recognise as we build our applications to meet our customers' needs and expectations. With our Enghouse Cloud SkypeforBusiness connector, agents can see the presence information of their colleagues and transfer/conference voice interactions across the organisation to the right resource so that difficult calls can be handled by skilled experts. As a long-standing partner of Microsoft we are working closely with them on developing our solutions so that when you move over to Teams you will be able to benefit from the same functionality.

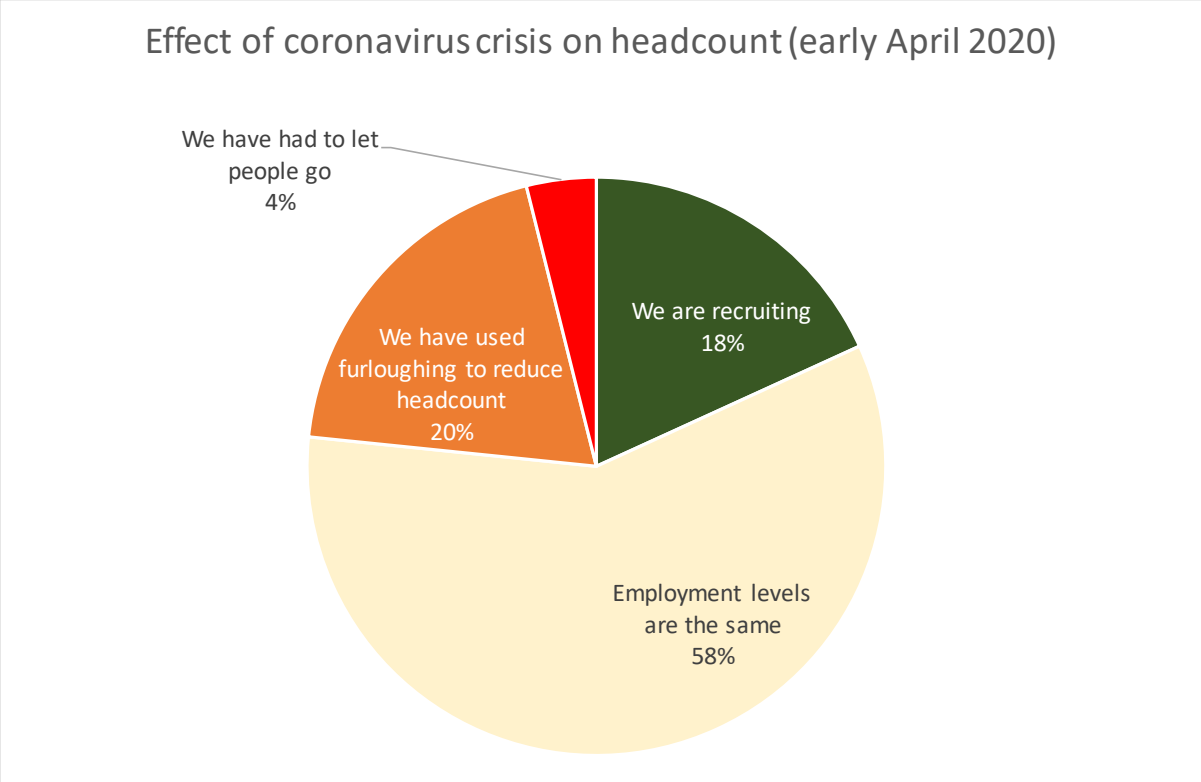
SUPPORTING REMOTE WORKING

The previous section referred to the benefits that cloud brings to workforce flexibility, and this is something that many businesses at the time of writing (April 2020) have had to manage very quickly through remote working in order to keep their staff safe while still managing their customers. This section of the report looks at the effect of the coronavirus crisis on the UK contact centre industry, in particular how it is bringing cloud to the fore.

In April 2020, Channel Doctors ran a short, rapid-response survey for UK contact centres to gauge some of the changes that were taking place in the industry due to coronavirus, including headcount, absence, remote working and customer contact levels. The following section provides the results of these questions: although the sample size is only 77 contact centres, the survey gives a flavour of what was happening in the industry at this time.

Survey respondents were slightly negative about the effect of coronavirus on their headcount: although 4% had made staff redundant, more than four times as many were planning to use the government's coronavirus job retention scheme, and had furloughed some or all of their staff. 18% of respondents were actively recruiting new staff. Whether growing or shrinking operations, having a scalable cloud-based solution which can add or shed licences very quickly will help to manage costs and get new agents on-board very quickly without having to be physically present to set up IT applications on their desktop.

Figure 4: The effect of the coronavirus crisis on headcount (early April 2020)

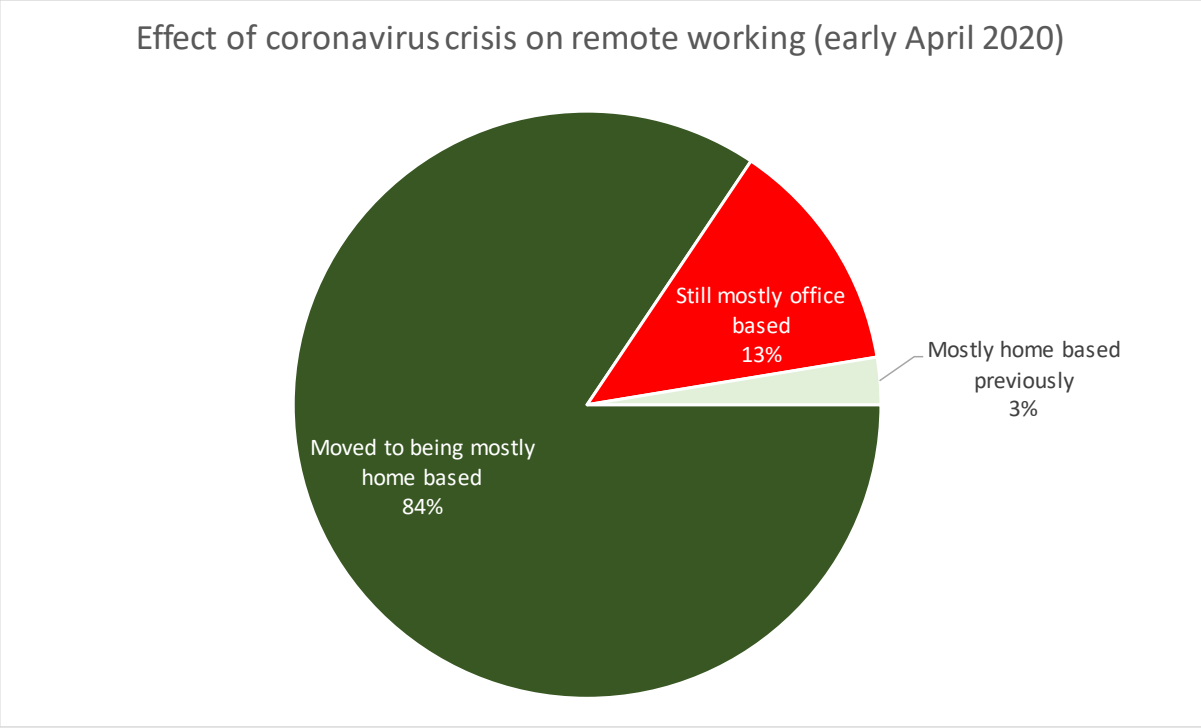


The greatest current effect of coronavirus on the contact centre industry is the enormous shift to home-based agents.

84% of survey respondents reported that they had moved from a centralised office environment to being mainly home-based, with 13% still mainly based within a contact centre, and 3% of respondents previously having a remote agent environment.

A 2019 ContactBabel survey of over 200 UK contact centres found that while 26% of operations had some homeworking capability, only 3.8% of UK agents were actually based at home. Clearly, there has been an extreme and dramatic move to a widespread remote working environment within the space of a few weeks, driven entirely by cloud. After the crisis, making a strong business case for having a non-cloud based solution is likely to be the exception.

Figure 5: The effect of the coronavirus crisis on remote working (early April 2020)



The final chart in the short survey is perhaps the most interesting. From a typical consumer's perspective, the difficulty in getting through to a contact centre in the time of the coronavirus crisis seems to prove that call volumes have increased hugely across the board. Digital channels also set very low customer expectations, with the typical quoted email response rate being measured in many days.

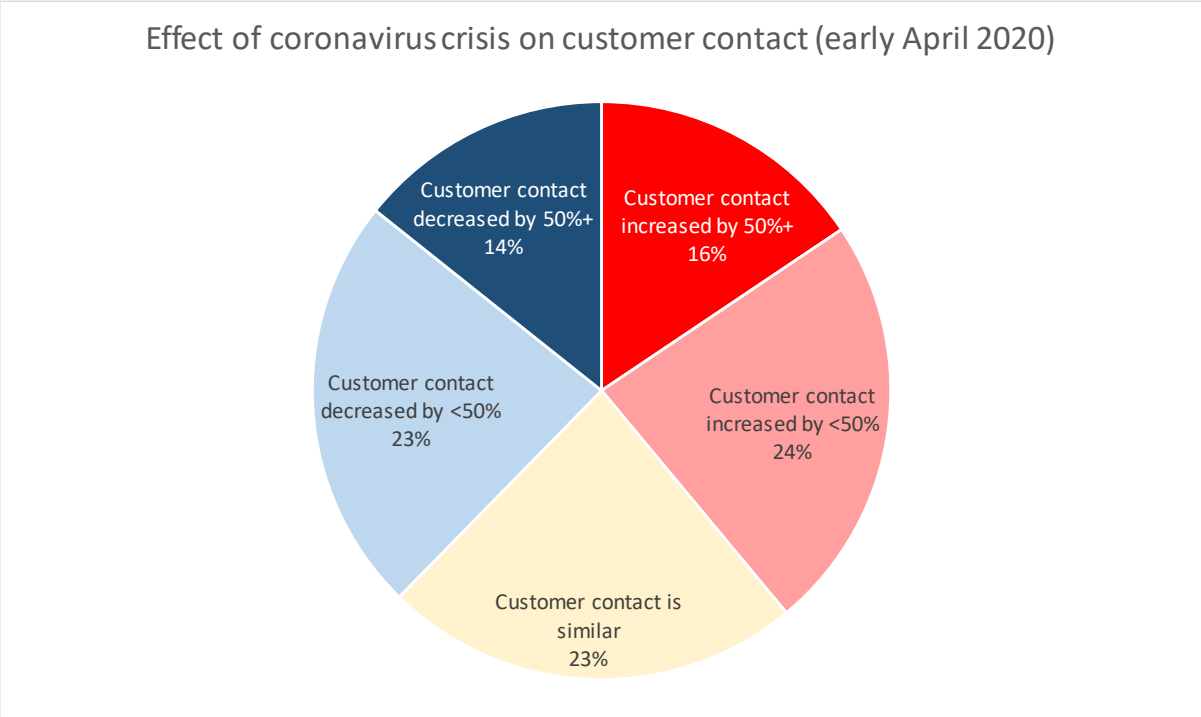
In fact, these data suggest something of a different picture: whereas businesses such as banks, supermarkets, travel and telecoms may well be experiencing increased call volumes, other sectors – for example, the claims department of car insurers, luxury goods retailers and public transportation providers – are likely to have far lower than normal contact volumes.

Additionally, there may well be other factors impacting upon poor customer contact outcomes, such as

- increased call lengths (due to very different types of query)
- longer after call wrap-up (due to lack of agent familiarity with remote systems)
- depleted resource (due to staff absence)
- shorter working hours.

Judging by the chart below, it seems fair to say that for every survey respondent whose customer contacts have increased, there are almost as many that have seen a corresponding decrease. The scalability of cloud solutions mean that any changes in volume or staffing can be managed far more easily and cost-effectively than in a CPE environment.

Figure 6: The effect of the coronavirus crisis on customer contact levels (early April 2020)



FUNCTIONALITY

Solution providers that offer both cloud and CPE solutions are at pains to point out that it is not the choice of deployment model that should come first, but rather how the operational requirements and functionality of any solution match the business's strategy.

Historically, hosted solutions were primarily tailored for SMEs, with a trade-off between low-cost of ownership and speed to deploy against less powerful functionality. These offerings would tend not to offer the full range or richness of functionality of their CPE equivalents, but recent years have seen concerted efforts by solution providers to be able to offer the same levels of functionality regardless of deployment model. This is not to say that today's cloud-based solution offered by a solution provider to a business with 20 seats will be the same as one with 500 seats: small operations are more likely to require a solution which is relatively easy to use as well as being cheaper, but any functionality which they do not have as part of the package is likely to be able to be switched on as and when they require it.

The levels of functionality available differ from provider to provider, and of course businesses need to decide which pieces of functionality are vital, and which are worth foregoing to gain the benefits of cloud-based solutions. Customisation in multi-tenancy environments is obviously far more limited than with a CPE delivery model and the cloud provider may not be able or willing to support unique customisation requests. This has tended to mean that there has been a balance between functionality, cost and flexibility, although solution providers have made great strides in offering similar levels of functionality to their CPE offerings. Having said that, the majority of functionality that contact centres require will be available through a cloud-based model, and the prevailing opinion is that with the level of competition in this area, cloud providers will be more likely to update and innovate to keep ahead of the game.

The issue of customisation and integration with existing legacy systems is of differing importance for every business. Many businesses may welcome the opportunity to revisit their old business processes, management information and general operations with a completely open mind. Others may have very specific requirements which are non-negotiable. For most businesses, there will need to be a balance between the way they are used to doing things, and the way the cloud solution works. Having said that, cloud providers are at pains to point out that legacy systems do not have to be replaced or abandoned, just that the levels of customisation and integration required may reduce a little of the advantage that moving to a cloud-based solution can bring: the rapid implementation of technology, with minimal requirements for IT resource and seamless integration between components. Vendors note that cloud-based solutions have often been architected from the ground up, so that various components work together seamlessly, requiring less time and effort to use.

Trial new applications quickly using a low-risk pilot

Contact centres can expand, move, increase size or try out new functionality without the high initial set-up costs. Using a pay-per-use model allows businesses to start a contact centre or move at low risk or increase for a temporary campaign or try out new functionality without having to spend excessive amounts of time and money first. This is especially true for applications such as speech recognition which can be a very expensive solution to implement at a CPE level, and also ones where the business wishes to trial a technology quickly, or simply use it in a specific business unit.

Amongst the biggest gainers from cloud technology are mid-sized contact centres, a market which many vendors had been failing to address in the terms which its size and importance deserved. Solution providers which have deep and rich CPE functionality aimed at the high-end of the market had historically been reluctant or unable to offer similar features to smaller operations at a price point that was acceptable to both parties. Cloud-based solutions mean that this market is becoming more important to vendors: for example, when using a multi-tenant deployment, the reduced implementation time and lower levels of integration and customisation means that more achievable price points can be offered than in a CPE environment, as vendors gain from the economies of scale associated with multi-tenancy (assuming a critical mass of customers).

Future-proof

A competitive, open cloud environment should mean that vendors will be motivated to innovate and provide better service. Cloud solution providers have continually to enhance and develop their services which bestows a competitive advantage to business users who can deploy the latest technology and the often inherent advantages of improved functionality, service and reduced costs, through their contact centres. In effect, a cloud solution removes the technology stranglehold experienced by many contact centres with CPE and allows them to concentrate on their core business as this release of frequent new functionality can be used to achieve a strategic service advantage. Some cloud offerings now are built using a microservices architecture, in which an application is made up of multiple loosely coupled and independent services, which allows code to be changed more easily and supports high availability and scalability, as when new features are added there is no need to take down the entire system.

In a CPE environment, upgrades to applications are carried out under ongoing maintenance contracts. Upgrading one element may cause a knock-on effect requiring other applications to be upgraded as well, a task which can be long and expensive. Cloud-based providers update applications on an ongoing, regular basis.

SECURITY

In the first market stage, security tended to be the greatest concern expressed around moving to a cloud-based solution, as – naturally – businesses will tend to think that they can look after their precious data better than anyone else, as they have the most to lose through any mistakes. Worries about attacks from outside or within the service providers' organisations, or through poorly designed security creating potential risks, mean that allowing a third-party to be in control of a businesses' data security is usually a major cultural and technological change to the way most businesses and IT departments have operated.

Cloud security is a shared responsibility, and cloud service providers have created the cloud shared responsibility model in order to show their customers who is responsible for what[1]. Basically, cloud service providers are responsible for the security of the cloud, while customers are responsible for the security their data in the cloud, but responsibility differs depending on the type of cloud service required (e.g. IaaS, PaaS, SaaS, etc.). With IaaS, the customer manages the guest operating system, applications and the firewall configuration, as well as their data, permissions, identities and access. The cloud providers handle physical, infrastructure and network security. With PaaS, cloud service providers also handle the operating systems, and with SaaS, the cloud service provider manages the infrastructure and applications. Customers are still responsible for managing their own data, as well as user access.

Yet cloud-based solution providers have invested very heavily in physical and logical security – which many organisations have not done themselves – as it is in the solution providers' own best interests to do so: fear of a substantial data breach, and the consequent damage to brand and any financial penalties means that taking security shortcuts creates great risk for the viability of the solution provider. For an enterprise to set up its operations with a similar level of security and disaster recovery is extremely expensive, and the increasing number and stringency of regulations means that this is unlikely to change at any time in the near future.

Organisations should expect that data should be **at least** as secure in a third-party environment that is dedicated solely to providing a high-quality cloud-based service, as this is one of the factors by which the solution provider will succeed or fail. Potential cloud clients should look for:

- multiple levels of firewall protection
- continuous intruder detection systems
- a two-person rule for changes to code or hardware
- frequent scheduled password changes
- external testing and audit trails
- data encryption used both in storage and in transit, under the control of the user
- additional layers of user authentication and privilege
- vetting of employees with access to sensitive information or hardware
- internal traffic and server monitoring.

[1] See: https://aws.amazon.com/compliance/shared-responsibility-model/

Businesses should make sure to ask their cloud provider what data encryption levels are operated, and whether the customer is given control of the data encryption key. Data should be encrypted at all stages, when travelling over the network between business and the database, and also when it is in the database and any back-up databases too. US organisations may wish to check that providers have the appropriate level of FIPS 140-3 certification[2], and are compliant with PCI-DSS[3], Sarbanes-Oxley[4], HIPAA[5] and any other regulatory requirements.

A cloud deployment may be more likely to be associated with security risks as there may be the assumption that the transmission of data will be over the public Internet, and that data from multiple customers may be held on shared hardware in place physically separate from the business. This is not necessarily the case: businesses may choose to have a private circuit such as an MPLS network, or to secure the Internet connections by using IPsec VPN tunnelling. In any case, the physical and logical security offered in an offsite, dedicated location may well be superior to the business's existing IT/IS environment.

Different architectural approaches may be appropriate: virtualisation offers a separate single customer, multi-instance environment in the data centre; the hybrid, local control model may offer the option to keep voice traffic and customer data (including recordings) locally within the business's own private network.

Agents working at distributed locations may require controls such as audit and fraud programs, functionality to control what agents can hear or view, strong and regularly updated protection of the PC environment (including anti-malware, anti-virus and firewalls), as well as screen and voice recording.

Some elements to ask about include:

- Security: the cloud provider must have a strong security management system based on an internationally-accepted security framework, to include physical security measures and secure data centre facilities. Relevant policies, certifications and standards include the ISO/IEC 27000 family[6], PCI-DSS Level 1 Service Provider, and ISAE 3402[7] (or SSAE 18 in North America). It should be noted that with the increased use of homeworkers, security controls should be data centric, rather than location centric. Potential customers should look for independent third-party accreditation, proof of investment above and beyond the minimum required by regulation and regular penetration testing. The GDPR concept of "Privacy by Design" means that organisations need to consider privacy both at the initial design stage and throughout the development of new products or services that involve the processing of personal data.

- Access: access to the service provided using industry standard encryption, or via a VPN. Data in transit should be encrypted using strong encryption

[2] https://csrc.nist.gov/publications/detail/fips/140/3/final
[3] https://www.pcisecuritystandards.org/pci_security/
[4] https://en.wikipedia.org/wiki/Sarbanes%E2%80%93Oxley_Act
[5] https://www.hhs.gov/hipaa/index.html
[6] https://www.iso.org/home.html
[7] https://en.wikipedia.org/wiki/ISAE_3402

- Usage: make sure customer data is used only as instructed or to fulfil the cloud service provider's legal requirements and that governance and role-based access management policies, and ongoing process testing procedures are in place. This should include user profile controls; all data having a unique key for its owner; authentication; deactivating unused accounts; automated alarms; logging; audit; penetration testing and regular changing of encrypted passwords
- Data ownership: make sure the cloud provider claims no ownership rights to customer data
- Payment functionality: see The Inner Circle Guide to Fraud Reduction and PCI Compliance for full details on the payment card solutions available in the cloud, as well as the next section of this report
- Disclosure: the cloud provider must only disclose customer data where required by law
- Geographical data location: the cloud provider must specify the locations and countries in which data will be stored. Physical protection of the data centre(s) should also be considered. Data centres in multiple physical locations will offer disaster recovery options if servers are fully mirrored
- Auditing: the cloud provider must use third-party auditors to ensure compliance, both physical and technological, and should submit to audits by their clients' IS teams as required.

Other interested parties include the Cloud Security Alliance, a not-for-profit organisation with a mission to promote the use of best practices for providing security assurance within cloud computing as a whole.

The General Data Protection Regulation (GDPR) came into effect in May 2018, and brought with it a host of new challenges for businesses and cloud providers, the latter of whom are now brought under the data protection umbrella as data processors. It would be the work of a whole separate report to cover the issues fully, but a good overview of the changes can be found here and here.

It is worth noting here that the greatest risk to security does not usually come from technical malfunctions or sinister attacks on a company's infrastructure, but rather through human error, failing business practices and a lack of understanding where the greatest risks are. For example, even if a cloud provider can demonstrate the highest levels of security, infosec is still at risk if the contact centre's agents are scribbling down customers' payment details on Post-It notes. As such, security can be less about technical elements, and more about the governance and processes in place within the organisation. Having said that, some solution providers note that while the business-level executives tend to believe the cloud security isn't a problem, the IT department is concerned about opening its firewall.

END-USER QUESTION 2: AS GDPR MAKES THE CLIENT AS RESPONSIBLE FOR DATA BREACHES AS THE CLOUD PROVIDER, HOW WOULD YOU PROVE TO US THAT YOUR SOLUTIONS ARE SECURE AND GDPR-COMPLIANT?

For Enghouse, cloud security is front of mind and thus the architecture complies with industry best practices including IBM Cloud's infrastructure layer and its standards.

Cloud contact centres generally receive only non-identifiable information with telephone-based interactions; this is typically the Calling Line Identification (CLI). The registered owner (person or business) of this CLI is usually unknown. If a cloud-based contact centre solution can also handle non-voice interactions, it is more likely identifiable information e.g. the sender's email address might contain personal information but not necessarily, and web chat might contain a name, account ID or Case ID and perhaps a social interaction might contain a WhatsApp ID, etc. Enghouse Cloud ensures that it complies with the GDPR requirements (for example, data needed to route these interactions is discarded immediately after use and any related systems log data is anonymised before analysis within the cloud platform). Any potential prospect will need to ensure their cloud provider can also accomplish the above.

THE ROLE OF THE CLOUD IN PCI COMPLIANCE

19% of UK survey respondents use third-party cloud-based payment solutions. Using a cloud-based solution to collect card data at the network level means that no cardholder data is passed into the contact centre environment, whether infrastructure, agents or storage. As such, this can be seen to de-scope the entire contact centre from PCI compliance.

Like any cloud solution, it relies heavily upon the security processes and operational effectiveness of the service provider, although the PCI DSS attestation of compliance and external audits, along with regular penetration testing may well show superior levels of security over what is present in-house. Some cloud-based solutions may require greater levels of integration or configuration than their on-site equivalents, but most seem to be engineered in such a way as to minimise changes to the contact centre systems, processes or agent activities.

Level 1 PCI DSS cloud-based payment service providers have to meet very specific standards on a regular and ongoing basis, which may well be in excess of what a merchant / organisation is set up to do:

- An annual Report on Compliance (ROC) by a Qualified Security Assessor (QSA)
- Quarterly network scan by an Approved Scanning Vendor (ASV)
- Penetration Test
- Internal Scan
- Attestation of Compliance (AOC) Form.

Cloud-based payment service providers offer the ability to scale up and down, depending on business requirements, and allows payments to be taken from any location (including homeworking) through a virtual terminal payments solution. This also means that the payments element of disaster recovery is covered.

A cloud-based payments provider can also offer a number of payment channels (e.g. web, IVR, SMS, live phone, etc.), and enable recurring payments to be made securely without having to repeat card entry, through tokenisation.

Some businesses, especially those with a large contact centre, use an **automated IVR process** to take card details from the customer, descoping the agent environment. Mid-call IVR (or agent-assisted IVR) is seen as a more customer-friendly approach than post-call IVR: the caller may have additional questions or the requirement for reassurance and confirmation after the payment process, perhaps around delivery times or other queries not related to the payment process.

Many businesses which use IVR for payment will use a cloud solution provider and this will take the card data out of the organisation altogether. If they do not, the card data will still be within the organisation's network, so although this approach takes the agent out of scope, it does not in itself ensure PCI compliance.

An increasing number of businesses are using **secure digital payment methods** to take card payment. The customer is sent a secure hyperlink via SMS, email, chat or social media which directs them to key in their card details, potentially treating this as a 3D Secure ecommerce payment rather than a MOTO payment (which are likely to be treated as non-secure payments by card brands),

attracting lower fees and protecting the merchant against fraud-related chargebacks. While this method takes the voice channel out of scope, this may not work for customers who do not have access to a device that allows them to pay online, who are prevented from doing so by disability, or who see online payments as insecure and refuse to use this option, and alternative measures should be put in place to handle these payment exceptions.

22% of survey respondents use **DTMF suppression** (also known as masking) in order to assist with card fraud reduction. DTMF suppression describes the practice of capturing DTMF tones and altering them in such a way that cardholder details cannot be identified either by the agent, the recording environment or any unauthorised person listening in. DTMF suppression aims to take the agent out of scope as well as the storage environment, as card details on the agent's screen may be masked as well as the DTMF tones being neutralised (thus removing any - albeit theoretically small - danger of a handheld recorder being used).

At the point in the conversation where payment is to be taken, the agent directs the customer to type in their card details using the telephone keypad. The DTMF tones are altered so that they no longer represent the card number or sensitive authentication details. The caller inputs their card data via a touchtone keypad in a similar way to an IVR session, keeping them in touch with the agent at any point in the transaction in case of difficulty, clarification or confirmation. The actual payment is sent directly to the payment provider, away from the contact centre.

The PCI SSC notes[8] that "some implementations of DTMF masking rely on DTMF-detection - this may introduce a delay in the masking, and the initial portion of the DTMF tones may not be masked (this is called "DTMF bleed"). It is important to ensure that all DTMF tones, including any initial small portions of 'DMTF bleed' that may be inadvertently allowed through a masking process, are not present in the environment. A properly designed and deployed DTMF-masking solution can take not only the telephony environment, but also the agent environment and CRM system out of scope. Entities should avoid solutions that leave agent environments in scope unless there is an unavoidable business requirement to do so."

[8] PCI SSC Information Supplement • Protecting Telephone-Based Payment Card Data • November 2018 p33

CONTROL

Control, visibility and reporting

For some businesses, loss of control is of as much concern as fears over integration. A service provider may not be as responsive as an in-house team, and it may take hours or even days to make changes to the system, so service level agreements should include response times. It is also the case that the solution provider upgrades or implements new functionality as and when they wish, in the case of the multi-tenancy model, and backing up the system is also something that the solution provider becomes responsible for. It is vital that these issues too form part of any agreement between the client and the cloud solution provider, with expectations of the provider's speed to react stated and agreed in writing before any contract is signed. Cloud vendors provide complete visibility of their service availability and performance through web-based dashboards, and cloud-based contact centre solutions are very likely to have an ongoing, real-time monitoring capability, often using a mobile app for management to view wherever they are.

Some solution providers note that some traditional BPOs and outsourcers, as well as large financial institutions prefer to own and control their own technology, which is a major hurdle to overcome for a cloud provider. These organisations also have significant resources and focus upon security and governance, which makes the cloud proposition a more difficult sell, although not impossible.

Having said that, multisite, global enterprises could benefit both in terms of cost and functionality by being able to consolidate their operations over a single platform, utilising a single supplier.

Cultural considerations

Making the move to cloud is seen as a far bigger proposition than deciding whether to implement or replace a particular contact centre application such as call recording or workforce management. The decision can be as much cultural and political within an organisation as it is technological or operational. Perceived security and data privacy issues around cloud are always present in any such discussion, and a lack of confidence or understanding of the reality around these issues, especially in the higher echelons of decision-makers, has on occasion vetoed or delayed the move to cloud, regardless of the financial or functional arguments put in its favour. The recent rapid enabling of remote working by cloud solutions should go a long way to alleviating these misgivings.

Solution providers note that it has also been the case that there has been a common perception that cloud is an all-or-nothing infrastructure decision, which is untrue. Many vendors offer options for customers to keep what they feel that they need on-site - for example call recordings and sensitive data - while moving offsite the elements of the contact centre solution that businesses are most comfortable with outsourcing.

The move to cloud has similarities to the decision-making process around IP that many contact centres have been through:

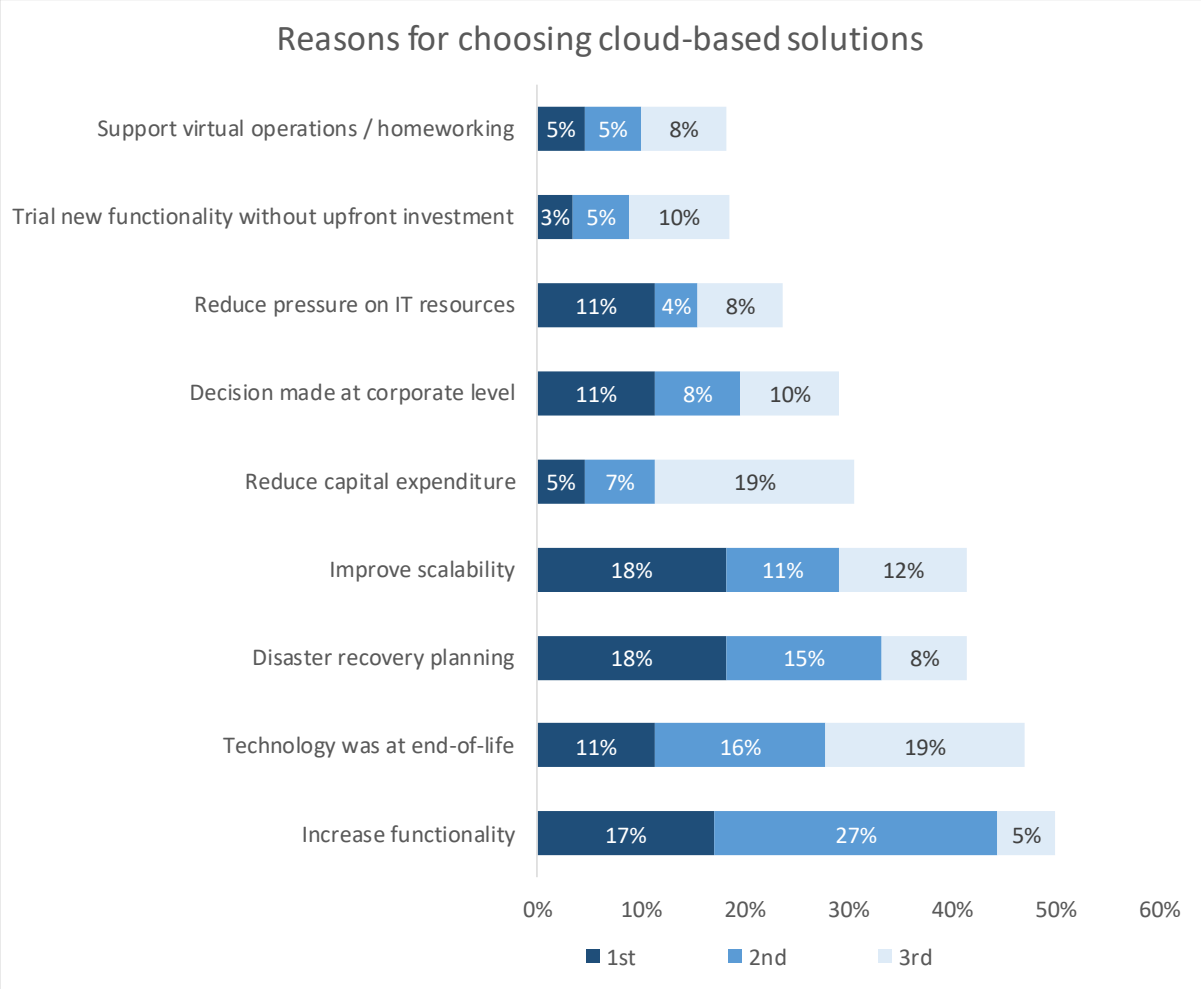
- it may not be related just to the contact centre, but other business areas too
- the technical elements of the decision may not be easily understood by business-focused executives
- concerns about security and reliability risks are frequently aired
- the general movement of control away from the enterprise to a third-party can cause uneasiness
- final decisions may not be made from within the contact centre environment.

THE RELATIVE IMPORTANCE OF DRIVERS AND INHIBITORS

The following figure shows that there is no single dominant reason to move to cloud, as much depends on the nature of the business and contact centre environment.

The ability to reduce capital expenditure was historically seen by respondents as the most important primary reason to move to the cloud, and while this is still seen as being somewhat important, increasing functionality is placed as a top 3 reason by almost half of respondents, with disaster recovery, improved scalability and the technology being at end-of-life also being viewed as more important factors than capex reduction.

Figure 7: Reasons for choosing cloud-based solutions



The real finding to take from the chart above is that there are not simply one or two reasons to move to cloud: there are considerable financial, operational and technical advantages for many organisations to do so.

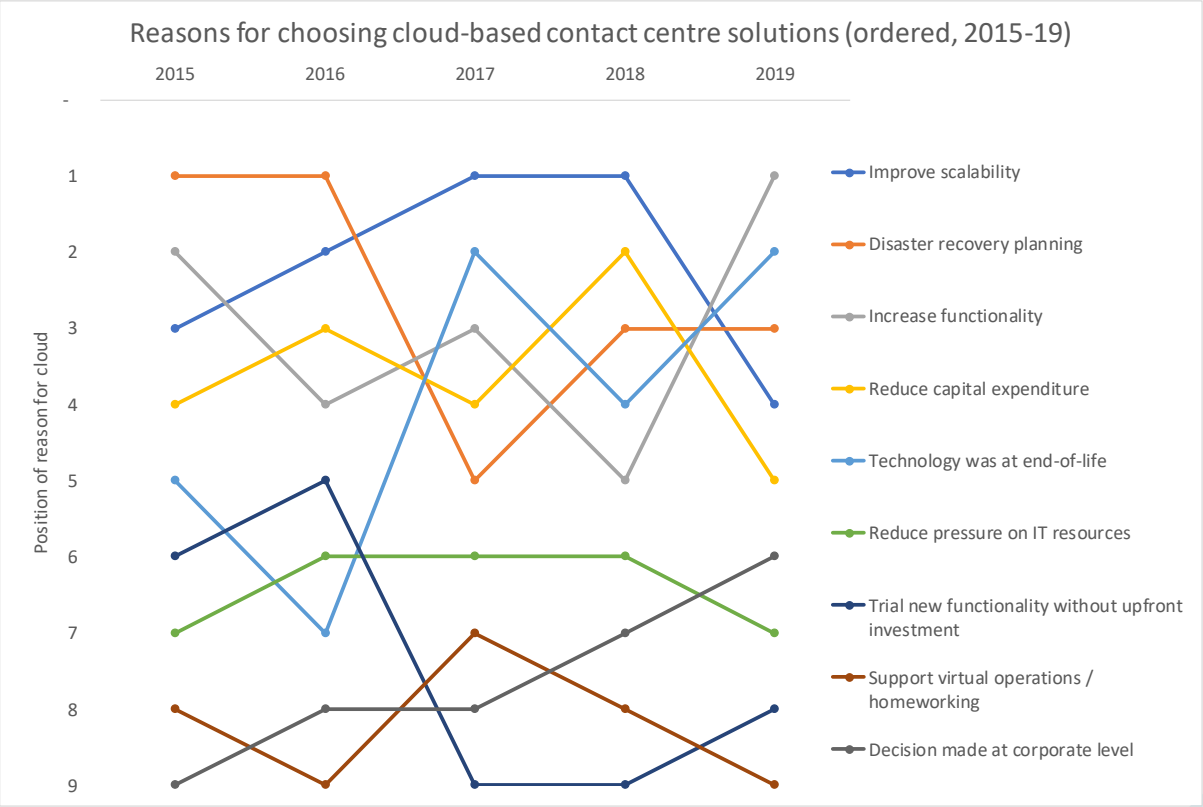
The next chart shows how the importance of these factors has changed.

Over the past five years, survey respondents were asked how important each of the nine reasons below was for choosing cloud-based contact centre solutions. In order to understand the changing view of the industry, these data were aggregated and ordered from 1 to 9 (where 1 is the most important and 9 is the least important), and are shown in the chart below.

After five years of data, some patterns are starting to emerge:

- the importance of scalability increased year on year, rising from 3rd place in 2015 to 1st place in 2017 & 2018. While this has fallen to 4th place this year, it is still seen as being very important
- although disaster recovery was rated as the most important reason for choosing cloud in 2015 and 2016, it dropped to 5th place in 2017. 2018's rebound to 3rd place suggests that this factor is still very significant, a finding supported by keeping this position in 2019. We would expect this factor to grow in importance in future.
- as time moves on, we may expect to see more decisions on cloud being driven by the fact that existing technologies are approaching their end-of-life. The big jump in the importance of this reason since 2015-16 may be signalling that obsolescent technology is increasingly driving people's decisions around cloud
- other reasons for moving to cloud that are relatively less important over many years include trialling new technology, supporting a decentralised structure and reducing pressure on IT resources. This is not to say that these factors are unimportant, as the previous chart has shown, just relatively so compared to others.

Figure 8: Reasons for choosing cloud-based solutions (ordered, 2015-19)



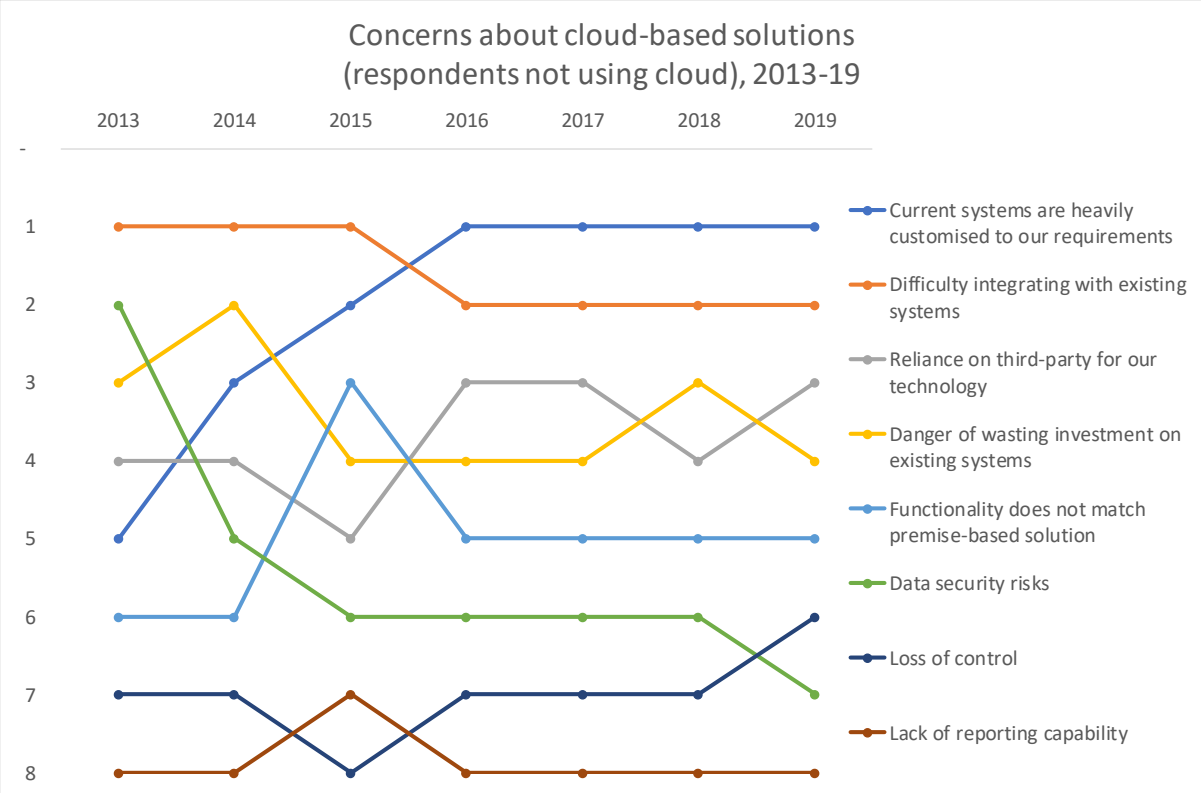
INHIBITORS

Despite the generally positive experiences that most users of cloud solutions have reported, there have been considerable barriers to implementation that have held back some potential users, connected with the greatest concerns around customisation, integration and investment. The following charts show the concerns that non-cloud users are worried about, and the issues that those actually using cloud have seen.

For non-cloud users, the historically major concern that data security will be compromised by allowing a third-party to control customer details is well down the list, dropping from the 2nd greatest concern in 2013 to the 6th highest from 2015 onwards, and 7th in 2019. Solution providers' efforts to provide greater education and understanding about risks and the reality of this – as well as striving to improve (and prove) the security and reliability of their own systems – seems to have paid off. Some cloud-based solutions allow clients to keep call recordings and sensitive customer information on their own site, whereas most others provide externally audited and accredited dedicated security that can usually surpass most on-premise offerings.

Non-cloud users' growing concerns are around whether the levels of existing CPE system customisation and functionality could be replicated in the cloud environment, and whether any new system would integrate fully with their existing environment. Those respondents with concerns that existing investments would be wasted if they were to move to cloud should be aware that many vendors offer a solution that can work alongside existing CPE elements, and in many cases, cloud functionality closely mirrors that available through the CPE model from the same solution provider.

Figure 9: Concerns about cloud-based solutions (respondents not using cloud), 2013-19

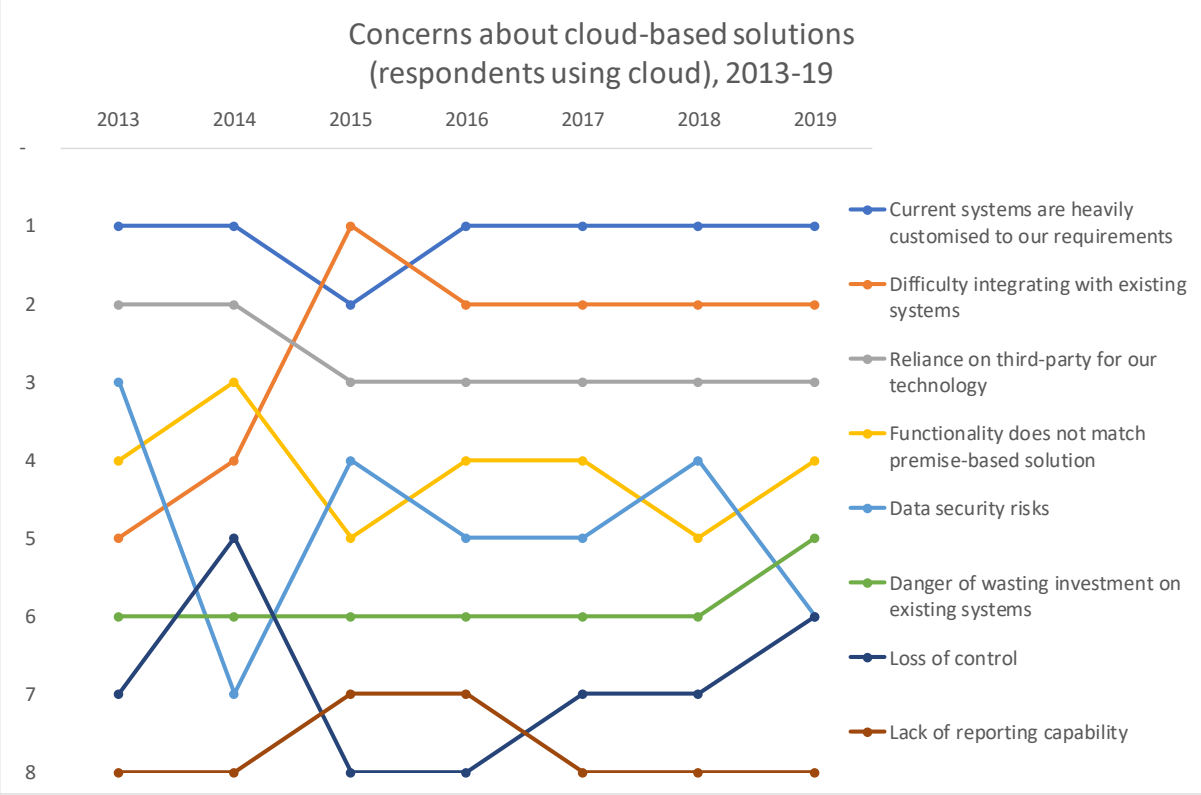


When considering only those respondents that actually use cloud, the difficulty in integrating with existing systems, and concerns over necessary customisation are of most concern. The need to rely on third parties also continues to be an issue for many, although concerns about a resulting loss of control is not a major problem for most.

The only major change seen for cloud users is their growing concern about integrating with existing systems, with this being one of the two major concerns for cloud users over the past few years.

In all, it seems that cloud-based solution providers need to focus on addressing customisation and integration issues to reassure both potential and actual cloud users, although the general positive experience of most cloud users lends an element of reassurance.

Figure 10: Concerns about cloud-based solutions (respondents using cloud), 2013-19



END-USER QUESTION 3: CONCERNS ABOUT CUSTOMISATION AND INTEGRATION ARE THE BIGGEST INHIBITORS TO CLOUD UPTAKE. CAN YOU REASSURE US THAT THIS WOULD NOT BE A PROBLEM?

When you move your contact centre from on-premise to the Cloud, you need to confirm that any interfaces to CRM or other third-party applications can move with you and that your chosen solutions provider can deliver the necessary integrations without significant costs or having to re-engineer these services.

Standard Connectors to mainstream applications will likely deliver 90% of your requirements. The Enghouse Cloud AppXchange includes pre-built connectors to leading CRM and WFM solutions (Salesforce, Microsoft Dynamics, Oracle Siebel, Verint, Nice, Teleopti), as well as a generic CRM Connector which enables the easy integration of home-grown back-office applications for screen pops and click-to-dial functionality. The functionality of the Enghouse Cloud user interface is extensible thanks to its integration framework that simplifies the development of custom Gadgets by end-customers (using HTML5, angularJS and/or vue.js).

Enghouse Interactive has significant Professional Services capabilities based on its 35 years of experience delivering all manner of integrations on and off-premise, including consulting, business analysis, solution architecture and design, API integration, fulfilment, managed services and solution optimisation. Our team of experts can also assist with, or develop highly complex, fully customised integrations.

BEST FIT

Not all businesses are ready for cloud-based solutions. Perhaps culturally there are too many concerns about security within various areas of the business to carry the argument. It may be that there has just been a major capital investment in CPE which fulfils the contact centre's need. Moving to cloud is not always a 'no-brainer'. Below are some of the characteristics that mean some businesses will choose CPE while others will migrate to cloud-based solutions.

Figure 11: Characteristics of businesses choosing cloud and CPE

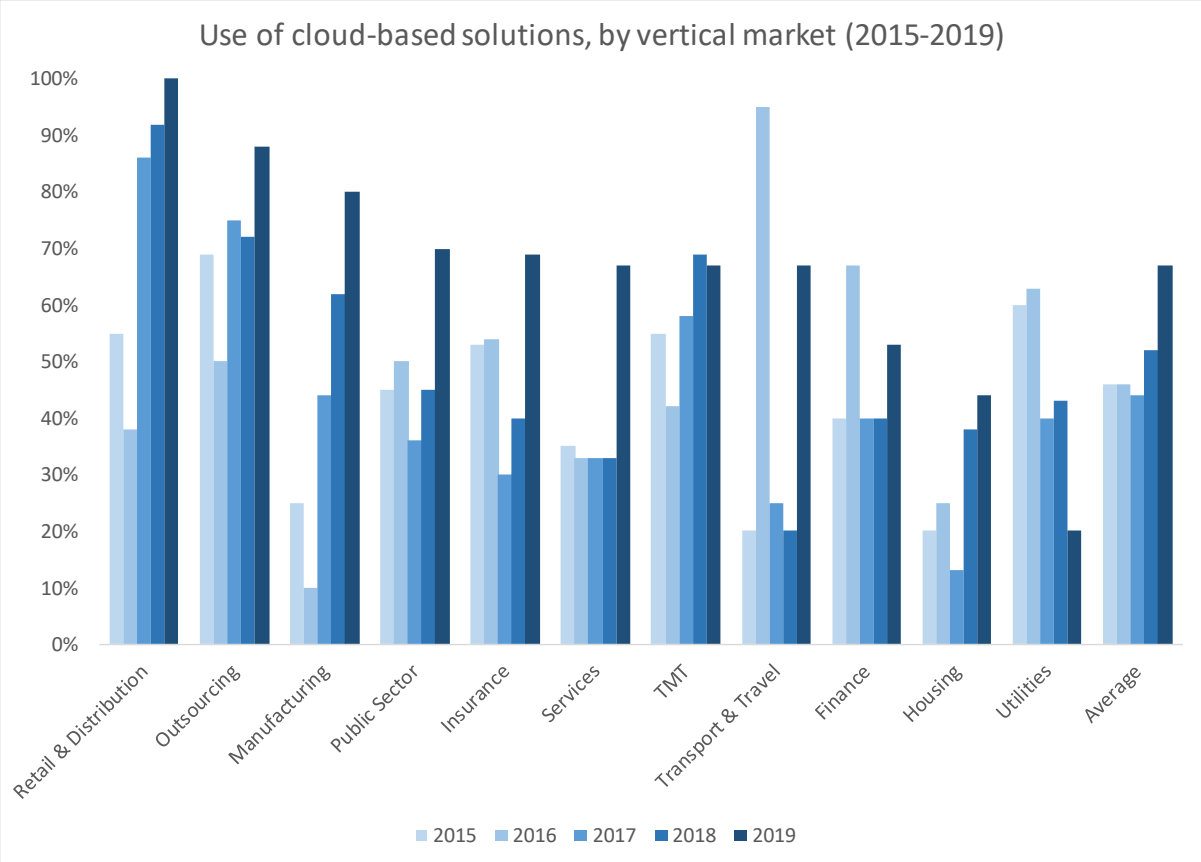
More suitable for Cloud	More suitable for CPE
Fluctuating call traffic (e.g. seasonality) that requires flexibility in adding & shedding agents	More predictable traffic that does not require changes in agent numbers
Planned addition of new sites and/or homeworkers	Stable contact centre environment in terms of headcount and location
Looking to add functionality and/or have technology at end-of-life	Have made substantial and recent investments in technology
Multi-site locations that could benefit from consistency of technology and management	Single-site location or no need to virtualise
Innovative and risk-taking culture aimed at gaining competitive edge	Conservative cultural approach to new technology and risk management
Simpler reporting & routing	Very complex routing & reporting requirements
More standardised back-office integration	Sophisticated and deep integration with back-office systems, developed over many years
Willing to look at Opex model of funding	More comfortable with Capex model
Do not have enough experienced IT staff to implement, support and maintain desired systems	Have a lot of experienced IT staff
Willing to cede some control over privacy and security to third-parties	Culturally unwilling to relinquish control over privacy and security

Many solution providers emphasis that cloud/premise decision is just as much about attitudes and commitment to internal IT as it is about cost. For many organisations, the IT department is freed from its role of ongoing maintenance and management, and can look at other projects of more strategic benefit to the business.

CLOUD USAGE: VERTICAL MARKETS AND CONTACT CENTRE SIZES

The suitability of cloud-based solutions by vertical market segmentation is perhaps less relevant than some other contact centre functionality, being more a factor of the individual organisation's requirements for flexibility, access to Capex funding, IT resourcing and the state of their existing systems.

Figure 12: Use of cloud-based contact centre solutions, by vertical market (2015-19)



Vertical market	2015	2016	2017	2018	2019
Retail & Distribution	55%	38%	86%	92%	100%
Outsourcing	69%	50%	75%	72%	88%
Manufacturing	25%	10%	44%	62%	80%
Public Sector	45%	50%	36%	45%	70%
Insurance	53%	54%	30%	40%	69%
Services	35%	33%	33%	33%	67%
TMT	55%	42%	58%	69%	67%
Transport & Travel	20%	95%	25%	20%	67%
Finance	40%	67%	40%	40%	53%
Housing	20%	25%	13%	38%	44%
Utilities	60%	63%	40%	43%	20%
Average	**46%**	**46%**	**44%**	**52%**	**67%**

As many of the respondents to our surveys are different each year, this may cause a fluctuation in the figures between years, especially in vertical markets where the number of respondents is relatively small. However, there is certainly enough historical data here from which to draw some conclusions.

The **outsourcing** sector has been quick to embrace cloud technology, with the very nature of their business is a cultural fit with the idea of letting a third-party take control of non-core activities. The ability to add and shed agents very quickly, coupled with the definite knowledge of the associated cost appeal to the way in which these organisations do business, which also enables them to produce rapid and detailed bids for new work without fear of long technology implementation times, and with certainty over costs. The movement away from high-volume outbound campaigns into more of a blended environment has also put pressure on certain types of outsourcer to include new functionality, and cloud offers a quick and integrated way to do this. The flexibility of billing (including per-minute billing from some cloud providers) is a major attraction for a contact centre where this impacts directly upon profitability.

Formerly a major growth pool in the industry, **public sector** contact centres have seen investment budgets slashed in recent years with little hope of a reversal in the near future. Many local government IT departments have been decimated in cost-cutting exercises. Cloud-based solutions offer a way to maintain a good level of functionality without having a large in-house IT operation, while keeping costs low and predictable. However, some vendors report that this is a very difficult market sector to sell into, with a high degree of inertia due to the defensive attitude towards any new expenditure and the potential shedding of knowledgeable and experienced IT resources.

Seasonal contact centres (such as **retail** and **travel**) are also a major target for cloud-based solution providers, who can add pay-as-you-go functionality almost immediately. Even paying a premium for a short-term usage contract will be far cheaper for a contact centre which would otherwise have to buy extra full licences at a far higher cost. The high level of competition in B2C, especially retail, means that the promise of a quick return and low impact on profitability make cloud of great interest to this vertical market.

Those businesses with a fixed, heavily-regulated environment such as **utilities** and **finance** are less likely to be early to the cloud, as they will want to maximise their existing infrastructure investment, and are likely to be risk-averse to allowing individual departments to buy what they want. Finance operations ae also more likely to have large infosec departments which will not easily cede control of data to a third-party.

However, cloud-based solutions are slowly finding their way into even the most risk-averse verticals, such as healthcare, for which the importance of customer/patient data security cannot be overestimated. Many cloud providers have made it part of their strategy to meet or exceed the prescribed levels of security and audit in order to be able to address these markets and take away one of the most pressing issues faced by these clients.

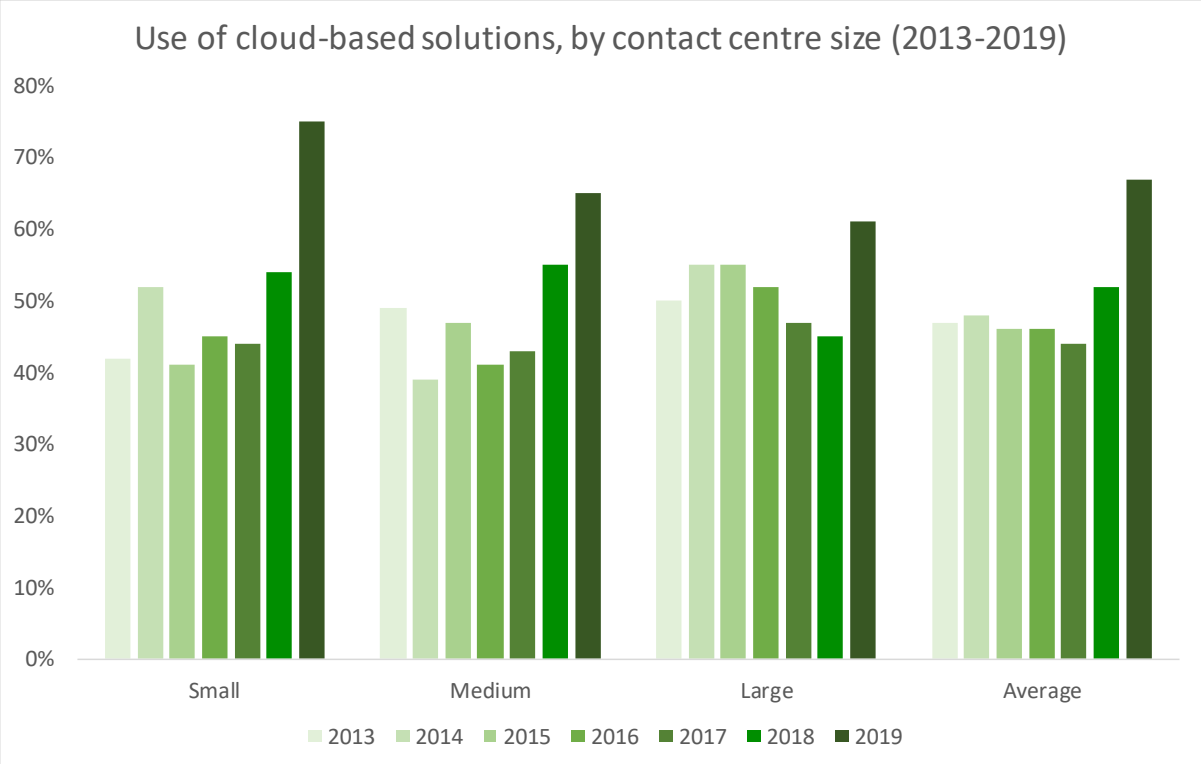
The rise in the use of cloud by the **manufacturing** sector shows the opportunity for this solution for smaller contact centres (the large majority of manufacturing contact centres are sub-50 seats), and while there may be some anomalous data caused by the relatively small sample size of this vertical market, there has certainly been substantial growth since 2015.

Departmental contact centres (in private companies rather then public sector organisations) have also been quick to consider cloud-based solutions, as their IT operations may not fit with the rest of the organisation and can be a burden rather than a strategic asset. Cloud offers them a chance to take control of their own destiny, rather than be a small part of a much larger whole that may be moving in another direction. Such departmental contact centres may be in the sales and marketing function, which means that outbound functionality is of great concern to them.

Looking at our survey respondents' use of cloud-based solutions by contact centre size over the past five years, it would seem that little changed between 2013 and 2017, with 45-50% of small and medium operations using cloud in some way, with larger operations perhaps a little more likely to be doing so.

However, the use of cloud solutions has jumped considerably since 2017, especially in smaller operations. 2019's usage figures are much higher than the previous year: while these figures may prove an anomaly – it is too early to say for sure – the general trend is certainly upward, especially in small and medium-sized contact centres.

Figure 13: Use of cloud-based contact centre solutions, by size (2013-19)



Contact centre size	2013	2014	2015	2016	2017	2018	2019
Small (<50 seats)	42%	52%	41%	45%	44%	54%	75%
Medium (51-200 seats)	49%	39%	47%	41%	43%	55%	65%
Large (200+ seats)	50%	55%	55%	52%	47%	45%	61%
Average	**47%**	**48%**	**46%**	**46%**	**44%**	**52%**	**67%**

The **SME (small-medium enterprise)** sector's theoretical desire for the rich functionality available to large enterprises has been dampened by the cost of implementation, as well as the general lack of IT in-house resource available to fine-tune and customise it so as to get the most of the solution. Cloud-based solutions can now alleviate much of the past requirement for in-house resource, as well as offering an Opex solution at a lower price point for sophisticated functionality, and is a hugely attractive option for this sector of the market. Many solution providers offer pre-built solutions tailored for the requirements of specific vertical markets and business processes, accelerating time to implement, and reducing any need for expensive customisation. The SME sector is far more likely to take up cloud-based solutions wholesale, whereas the data later in this report show that large enterprises are more likely to evolve into cloud piece-by-piece.

At an **enterprise** level, organisations that are young and rapidly growing that don't have the experience or incumbent team to run their own contact centre are prime candidates to consider cloud. Where the contact centre is dynamic – adding and shedding agents as required, whether contract-based, seasonal or multi-site/global – cloud is also a good fit. Organisations where finding Capex is difficult are of course also more likely to look at cloud-based solutions. Many solution providers report that enterprises have shown significant growth in interest in cloud-based solutions over the past few years, with many CPE/cloud providers now stating that the majority of new sales are for their cloud-based solution, even at the top-end of the market.

USE OF CLOUD-BASED CONTACT CENTRE FUNCTIONALITY

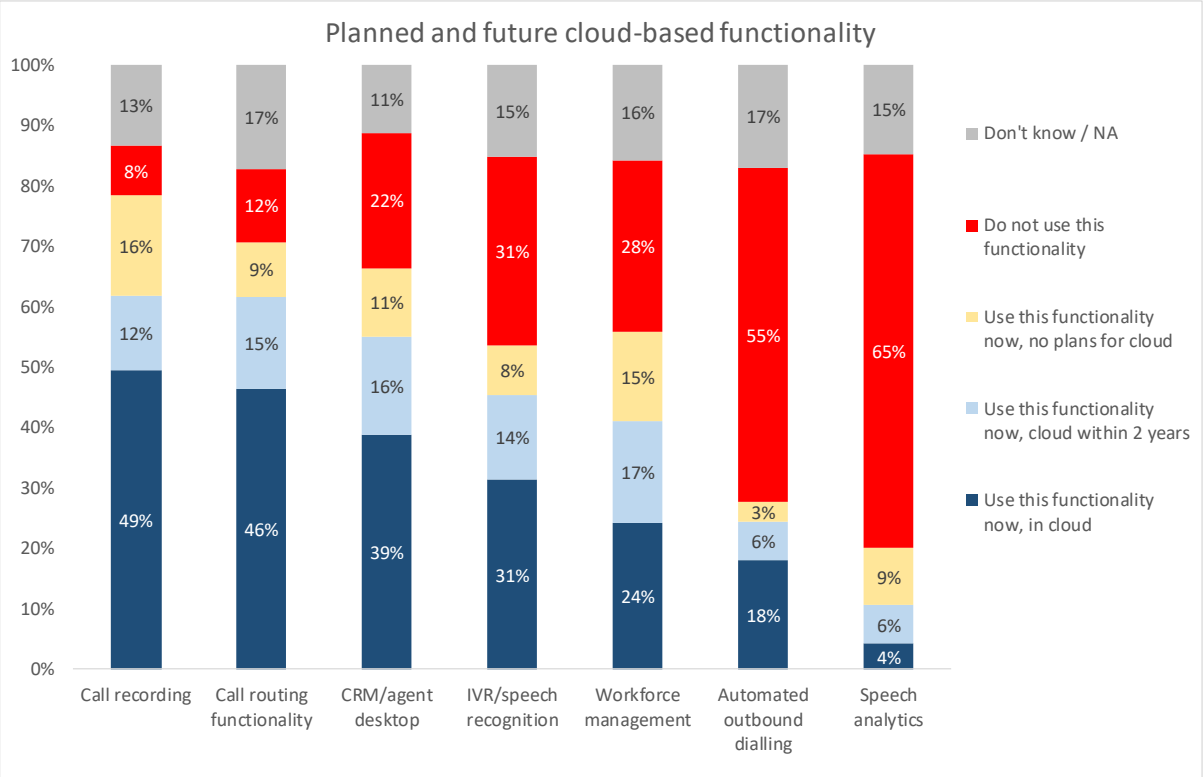
Survey respondents were asked about the contact centre functionality that they had within the cloud, and what their plans were for the next two years.

Call recording functionality is the most likely solution to be deployed through cloud-based solutions, with call routing and CRM/agent desktop also used extensively in the cloud. Most call recording, IVR/speech recognition, CRM/agent desktop, call routing and outbound dialling functionality is now delivered through the cloud.

Respondents expect to see significant extra amounts of their functionality being delivered in the cloud by 2021. Respondents indicate that their cloud-based deployment of workforce management and speech analytics will increase greatly within two years.

There is still a significant proportion of call recording users that have no plans to move to the cloud, perhaps as they wish to keep their recordings on-site for security reasons. A high proportion of current speech analytics users are also not planning to move to the cloud.

Figure 14: Planned and future cloud-based functionality (2019-2021)



Enghouse Interactive

Moving Your Contact Centre to the Cloud – Six Tips to Ensure Success

As you move your contact centre to the cloud, or implement cloud technologies, there are a wide range of issues you need to consider to make sure that the process is a success and that you maximise the opportunities that the cloud will bring. Here are some useful tips to ensure your journey to the cloud runs smoothly.

Think of your cloud contact centre as a differentiator helping you attract and retain employees

In the past, technology was viewed as a utility. Now with the move to digital and the enabling power of cloud, it has become a differentiator: a way to attract and retain talent. As you migrate to a cloud contact centre focus on how cloud can drive enhanced productivity by enabling remote and collaborative working and deliver operational efficiencies by providing the computing power to fuel new AI-driven and data analytics capabilities.

Engage fully with all the stakeholders before you start

Before you implement a new cloud contact centre or initiate any migration, ensure you engage fully with every stakeholder right from the start. You need to work out what business processes are associated with customer engagement and check that you can adapt or tweak the solution as required as business needs change.

Check that your provider can deliver integration cost-effectively

When you move your contact centre from on-premise to the cloud, you need to confirm that any interfaces to CRM or other third party applications can move with you and that your chosen solutions provider can deliver the necessary integration without significant costs or having to re-engineer services.

It's a mistake to assume most vendors can achieve this easily. It is therefore a good idea to seek proof points from your intended provider that they have the experience in carrying out low cost, high value integration that works successfully.

Provide an ergonomic user interface

Before you move your contact centre to the cloud, consider the importance of providing your distributed agents with an ergonomic graphical user interface (GUI). The GUI should be easy to install quickly as agent levels fluctuate, and also intuitive to use. One of the fundamental benefits of moving to the cloud is the reduction in IT burden and if the department needs to get involved to 'add an agent', that key benefit is compromised.

Choose a provider that offers a genuine multi-tenant environment

Many cloud contact centre providers claim to offer a multi-tenant environment. However, many simply virtualise an instance of what was traditionally deployed as an on-premise solution and offer a commercial subscription package around it. When that provider has 20 or so instances, they'll pass on the cost of ownership to their customers.

Also the provider will need to manage, operate and upgrade multiple instances with the associated cost overhead. Consistent and accurate communication of future roadmap features quickly goes 'out of sync' as different versions are implemented.

To avoid these difficulties you need to be confident that you are working with a provider who operates a genuinely multi-tenant solution.

Ensure your approach is future-proofed

Technology is evolving all the time and the business requirements of any cloud contact centre are likely to change rapidly too. You need to think about what future proofing really means for your business. Will you have to pay for and/or wait for long periods for any technological changes to be made? Does your provider track the market and make significant investments in new technology and in R&D? Will integration be easy with your existing and likely future infrastructure? Having these questions continuously in mind should help secure a successful outcome keeping you ahead of the competition.

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EVOLUTION OR REVOLUTION?

The contact centre industry is moving inexorably to a state where cloud-based functionality is the norm, and with every successful trial, proof of ROI or high-profile success, this becomes more of a reality. There is no correct answer as to whether moving to the cloud in stages or in a single step is the better option: solution providers state that there is likely to be only a minor difference in overall cost at the end of the overall process. Solution providers can run cloud discovery workshops to help identify which departments and parts of the enterprise would gain the most from moving to the cloud.

Implementing cloud-based solutions for most businesses is often an evolutionary journey, driven by a combination of decisions made elsewhere in the organisation, the need to upgrade equipment or improve functionality, and to avoid the financial pressures that come with capital investments. Vendors indicate that most customers will move to the cloud application by application or more often, group by group, although it is important to ensure that there is a long-term strategy and timescale in place. This method reduces the risk of changing systems and fits in with any specific need to upgrade or replace the functionality.

A revolutionary approach of rip-and-replace puts huge pressure on training and educating agents to use the new system. Moving everything to the cloud also risks wasting any sunk investment: businesses may well wish to look at running their CPE solution at capacity for as long as feasible, using new cloud-based resources to cover seasonality and any bursts or planned growth. This will allow the business to look at the best way to train agents and use the technology, moving a group at a time to the cloud. From the practical viewpoint, the benefits to migrating in small steps mean that allows users to build confidence of familiarity with the new system, as well as allowing more time for customisation and calibration. Businesses running a very large telephony system already are obviously much less likely to do rip-and-replace, rather moving to the cloud department by department, and piece by piece.

For organisations where the contact centre infrastructure is still not at the end of life, adding functionality for cloud-based deployments on an as-needed basis may be a good option, allowing the usage of new tools and techniques, and cloud certainly supports a channel-by-channel approach. It's important to use any movement to cloud as a way to address existing issues and suboptimal processes, rather than bringing across any bottlenecks or inefficient processes simply because that's the way it's always been done.

For new, smaller or rapidly growing contact centres, it would seem to make sense to use a fully integrated cloud-based solution with rich functionality and benefit from the Opex/pay-as-you-go model. The core components of the contact centre, including ACD, IVR and recording, may work well as a consolidated resource in the cloud, so businesses may deploy this cloud functionality together.

Some factors influencing organisations' movement to the cloud include:

- the requirement for a department or discrete part of the contact centre to have new functionality up and running quickly (for example, for the collections department to implement an outbound dialler)
- the level of depreciation that the current telephony infrastructure has experienced
- whether there is a suitable new campaign or new client (for outsourcers) where a cloud-based solution would be appropriate to trial, allowing the establishment of a template for success that can be repeated throughout the organisation at a wider scale at a later date.

While the need for internal IT resource to manage the contact centre platform is much lower once the business has migrated to the cloud platform, in practice it rarely means that the IT department is cut in size. Most businesses have a backlog of IT maintenance and improvement projects, as well as more strategic implementations that they would like to carry out if only they had the resources. Freeing up the IT department from the day-to-day running of the contact centre environment allows the redeployment of resource to more valuable projects. Some solution providers report that some cloud users' IT departments have been restructured to have fewer full-time employees, using consultants for any network/firewall, PBX or PC desktop issues.

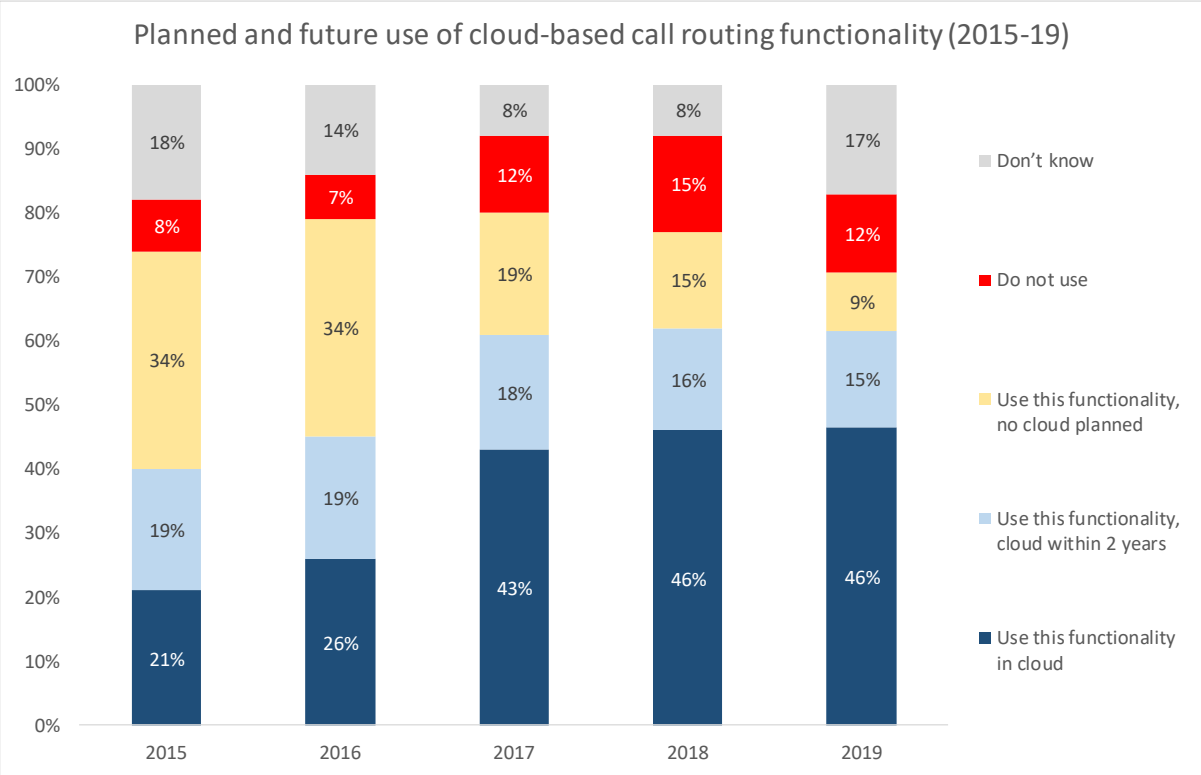
The next set of charts look at the change in how specific functionality has been delivered since 2015.

CALL ROUTING

The use of cloud-based call routing increased in 2017 to beyond what contact centres themselves were expecting in 2015, with the proportion of respondents using this deployment method growing from 21% to 43% in that time (their prediction was that 40% would be using this).

Since then, the figures have steadied somewhat, although it is worth noting that 2019's high 'don't know' figure means that the other figures for this year have been pulled down, and that it is very likely that cloud-based call routing increased in that year.

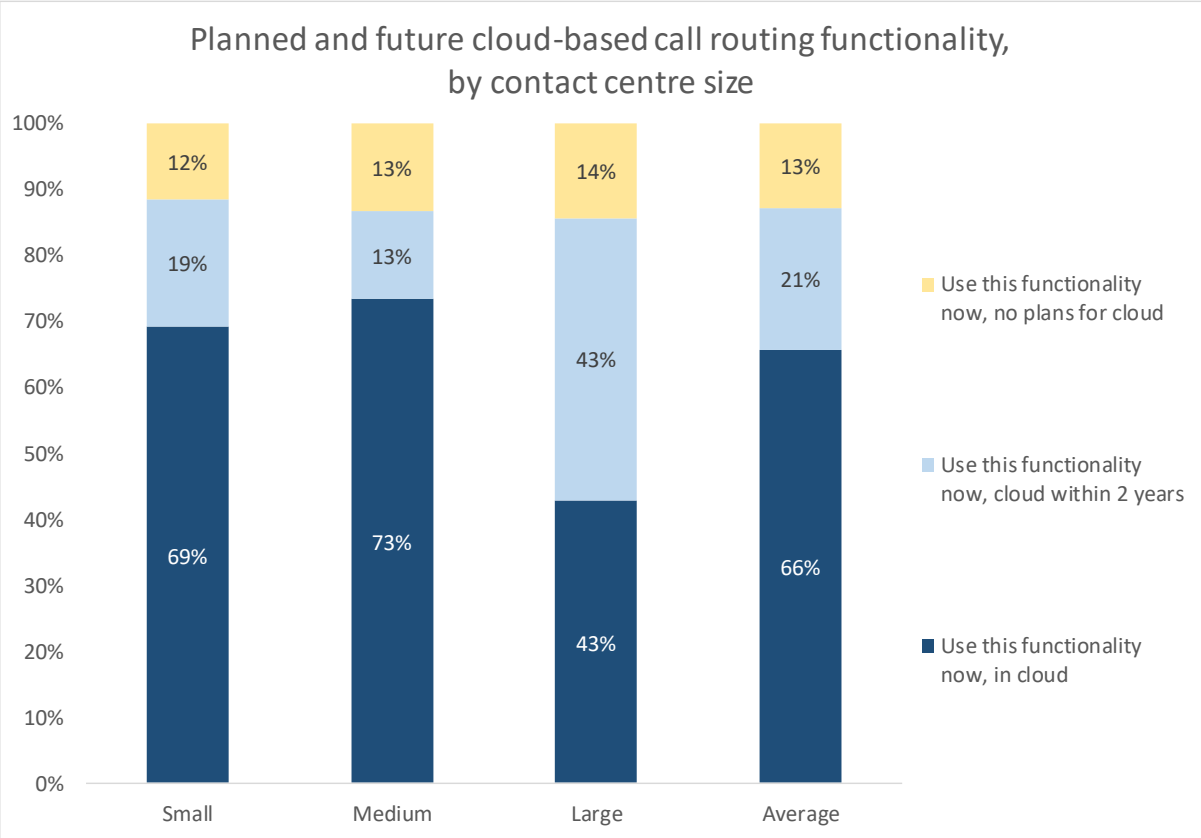
Figure 15: Planned and future cloud-based call routing functionality (2015-19)



The following charts look at the use of cloud-based solutions by contact centre size in 2019. Whereas the table shows all figures, the chart strips away the "Do not use" and "Don't know" data, which then shows more clearly how this functionality is being delivered.

Cloud-based call routing is particularly popular amongst small and mid-sized (sub-200 seat) operations, with around 70% of users deploying this way, against 43% of large operations. However, around 85% of all size bands using the technology expect to be using cloud-based call routing by 2021.

Figure 16: Planned and future cloud-based call routing functionality, by contact centre size (existing users only, 2019)



Contact centre size	Use functionality now, in cloud	Use functionality now, cloud within 2 years	Use functionality now, no plans for cloud	Do not use functionality	Don't know / NA
Small (<50 seats)	56%	16%	9%	16%	3%
Medium (51-200 seats)	58%	11%	11%	5%	16%
Large (200+ seats)	21%	21%	7%	17%	34%
Average	**46%**	**15%**	**9%**	**12%**	**17%**

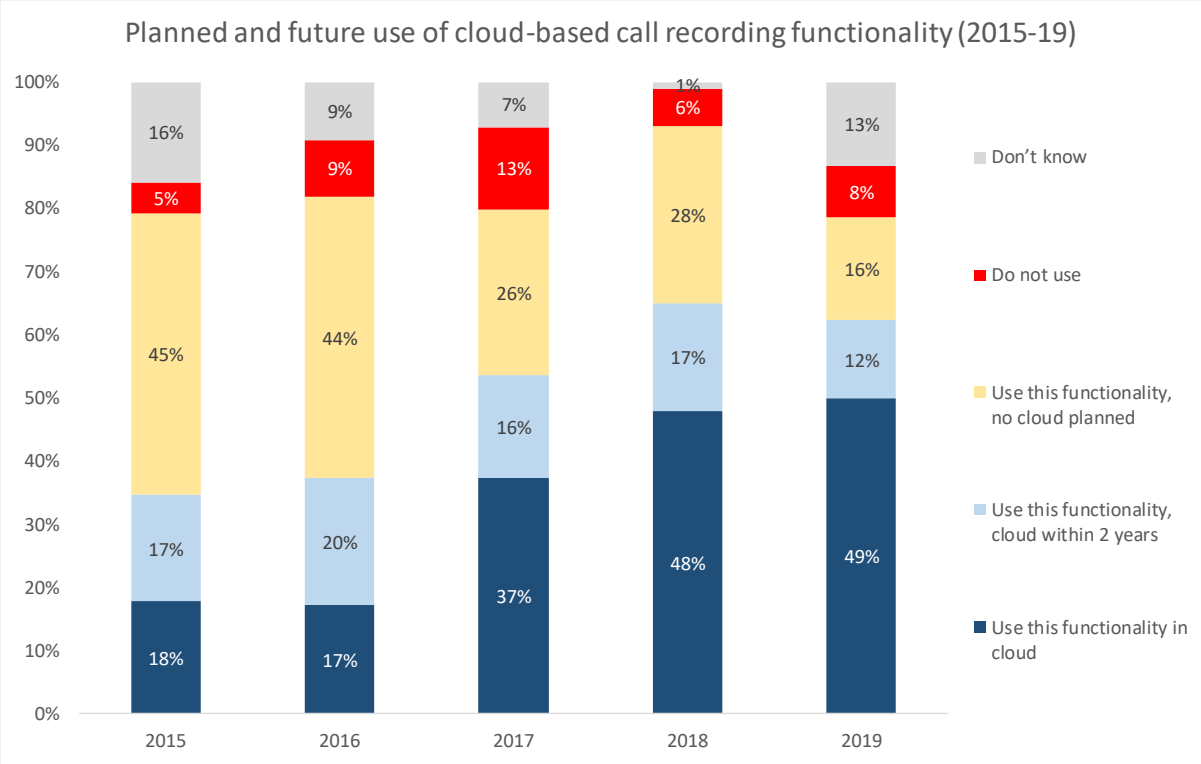
NB: table shows full data; chart above shows only those respondents which use the functionality in 2019

CALL RECORDING

The penetration rate of cloud-based deployments of call recording has almost tripled since 2015, with 49% of survey respondents using cloud-based recording in 2017, against 18% in 2015.

A considerable proportion of respondents in the finance, retail & distribution, housing and transport & travel sectors report that they are looking to update their call recording solutions, which is almost certainly connected with adding speech analytics capabilities to the recording functionality in order to improve the QA process, increase compliance and gather new business insight from their customer interaction records.

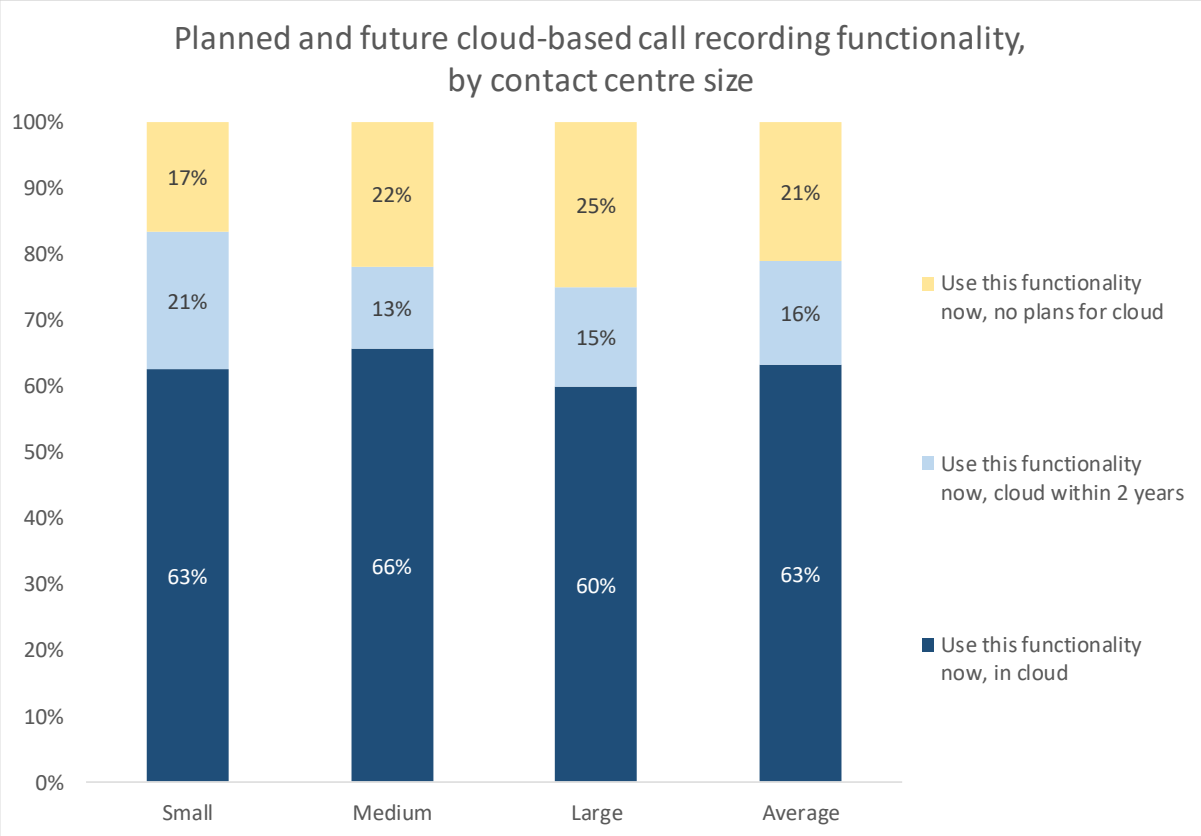
Figure 17: Planned and future cloud-based call recording functionality (2015-19)



The use of call recording has in the past been influenced by the size of the contact centre operation, although the high level of penetration in respondents from small operations shows that vendors have been able to offer solutions successfully at various price points and deployment methods.

There has been significant growth in cloud-based call recording across all size bands, although this is somewhat weighted towards smaller operations.

Figure 18: Planned and future cloud-based call recording functionality, by contact centre size (existing users only, 2019)



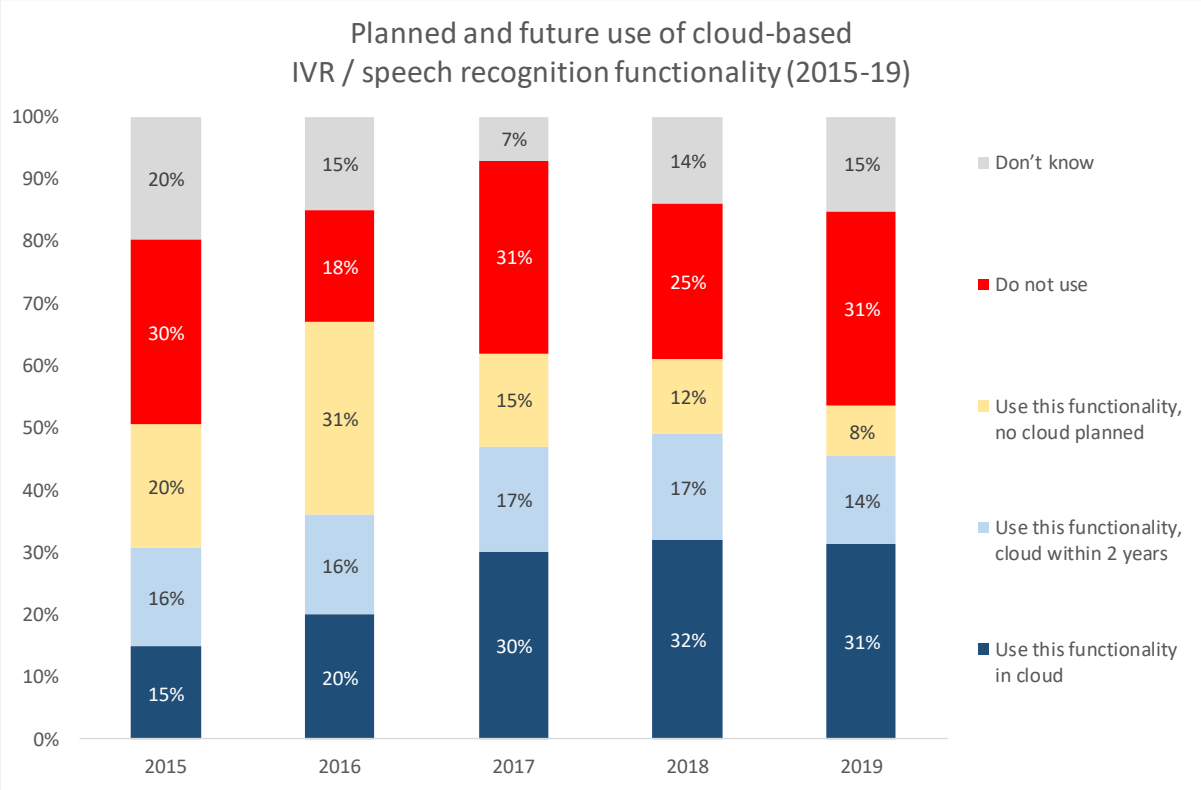
Contact centre size	Use functionality now, in cloud	Use functionality now, cloud within 2 years	Use functionality now, no plans for cloud	Do not use functionality	Don't know / NA
Small (<50 seats)	50%	17%	13%	17%	3%
Medium (51-200 seats)	55%	11%	18%	5%	11%
Large (200+ seats)	41%	10%	17%	3%	28%
Average	**49%**	**12%**	**16%**	**8%**	**13%**

NB: table shows full data; chart above shows only those respondents which use the functionality in 2019

IVR / SPEECH RECOGNITION

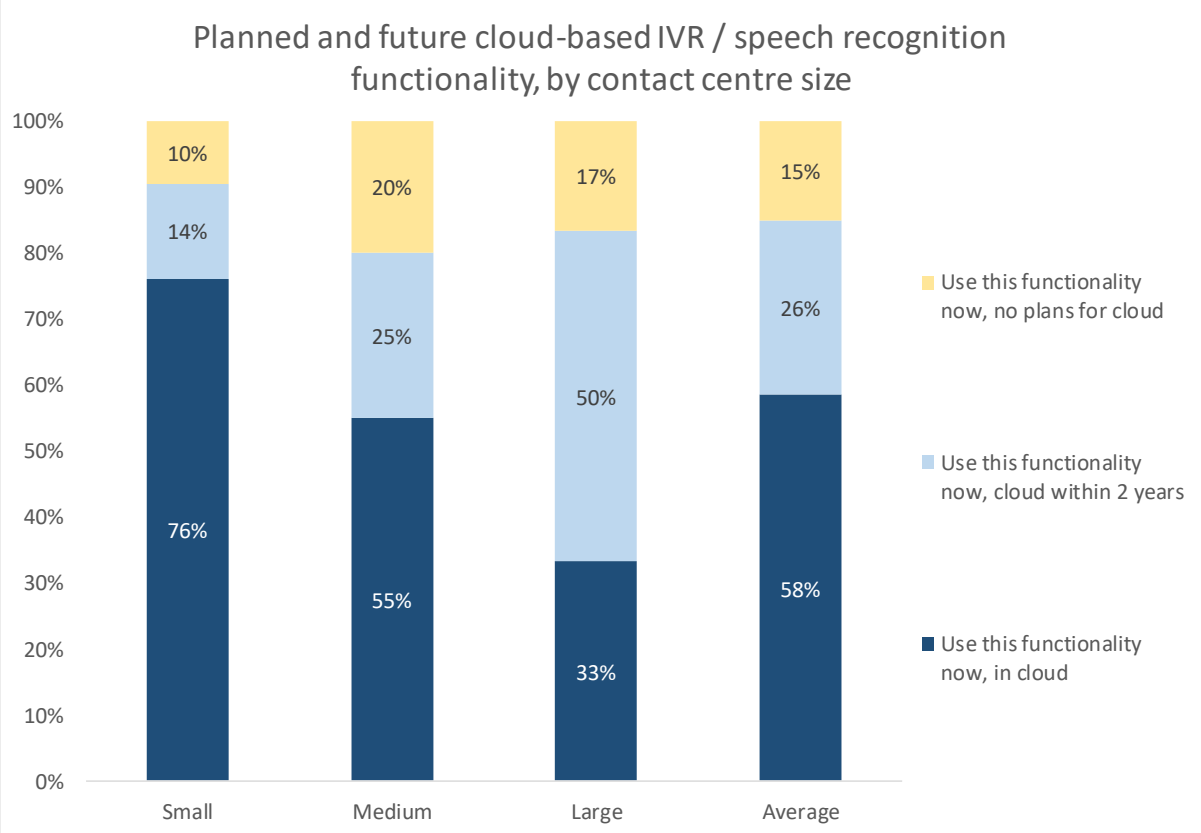
The use of cloud-based IVR/speech recognition has doubled since 2015, with 31% of survey respondents now using this deployment model, against 15% in 2015, although there is little reported movement towards cloud since 2017.

Figure 19: Planned and future cloud-based IVR / speech recognition functionality (2015-19)



As with call routing, small operations are more likely to be using voice self-service within the cloud, although large operations expect their use of cloud-based voice self-service to more than double by 2021.

Figure 20: Planned and future cloud-based IVR / speech recognition functionality, by contact centre size (existing users only, 2019)



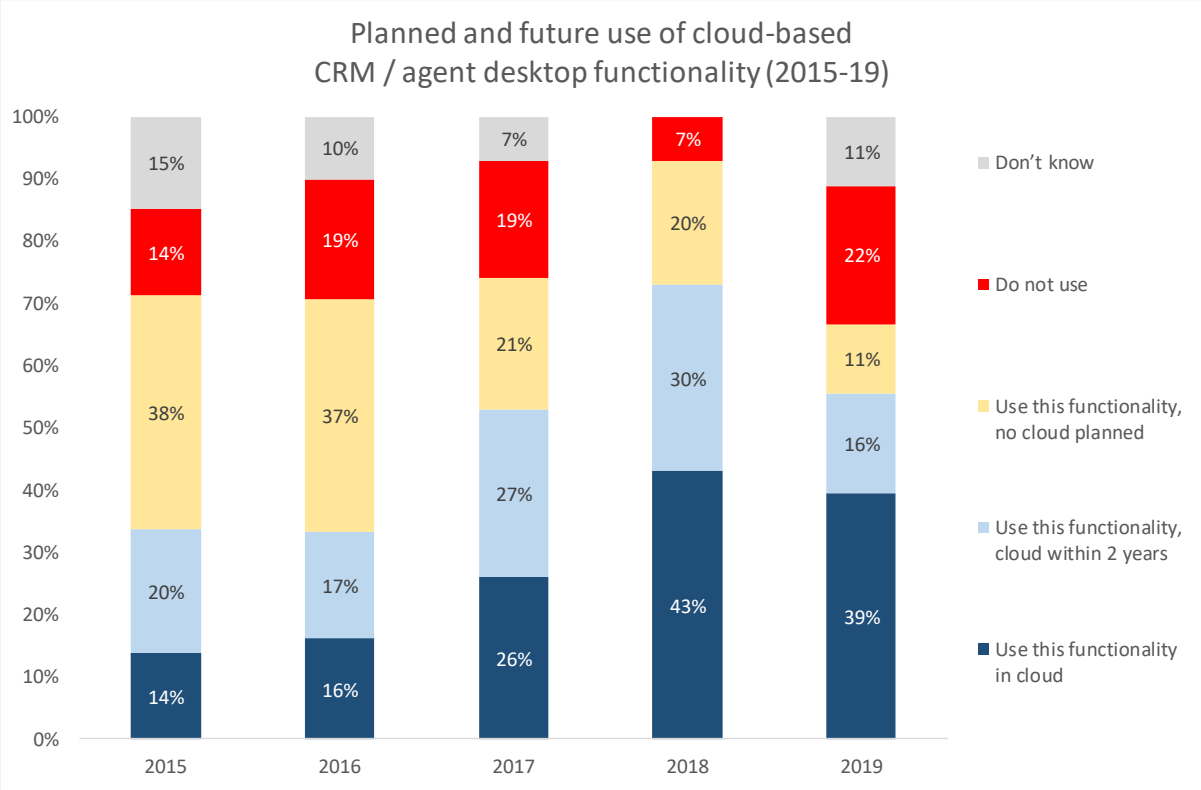
Contact centre size	Use functionality now, in cloud	Use functionality now, cloud within 2 years	Use functionality now, no plans for cloud	Do not use functionality	Don't know / NA
Small (<50 seats)	50%	9%	6%	31%	3%
Medium (51-200 seats)	29%	13%	11%	37%	11%
Large (200+ seats)	14%	21%	7%	24%	34%
Average	**31%**	**14%**	**8%**	**31%**	**15%**

NB: table shows full data; chart above shows only those respondents which use the functionality in 2019

CRM / AGENT DESKTOP

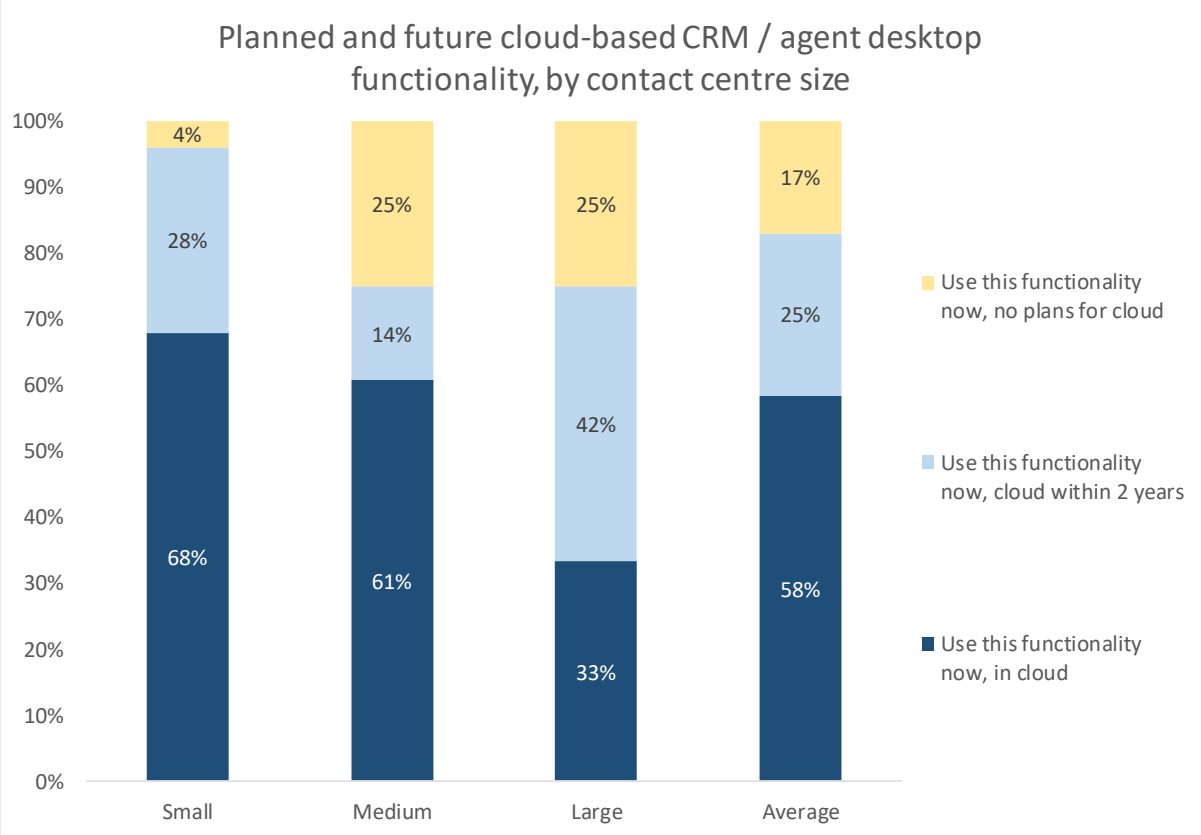
In 2017, 53% of survey respondents expected that they would be using cloud-based CRM/agent desktop functionality by 2019. This figure fell short (39%), however there has been a strong overall growth in cloud-based CRM/agent desktop.

Figure 21: Planned and future cloud-based CRM / agent desktop functionality (2015-19)



Small and medium contact centres are more likely to be using cloud-based deployments of CRM / agent desktop, although there is strong expectation in larger operations that they will be doing so by the end of 2021.

Figure 22: Planned and future cloud-based CRM / agent desktop functionality, by contact centre size (existing users only, 2019)



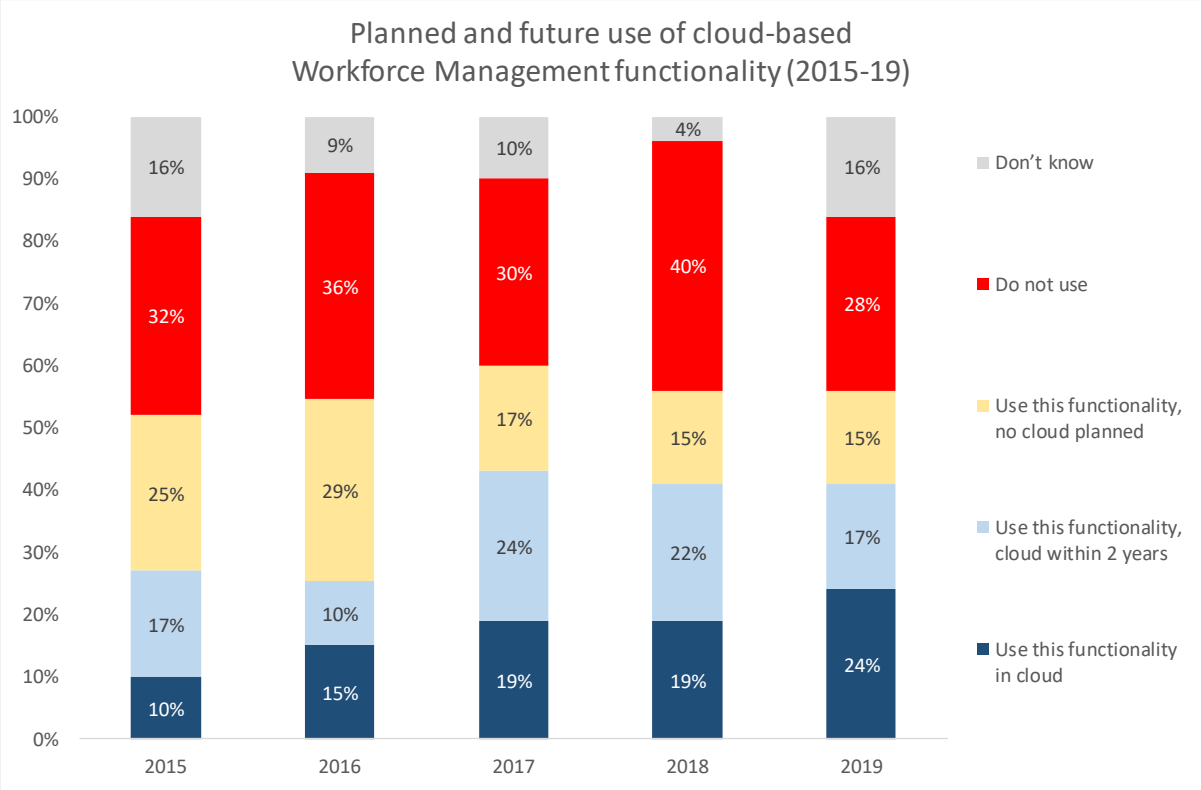
Contact centre size	Use functionality now, in cloud	Use functionality now, cloud within 2 years	Use functionality now, no plans for cloud	Do not use functionality	Don't know / NA
Small (<50 seats)	55%	23%	3%	19%	0%
Medium (51-200 seats)	45%	11%	18%	18%	8%
Large (200+ seats)	14%	17%	10%	31%	28%
Average	**39%**	**16%**	**11%**	**22%**	**11%**

NB: table shows full data; chart above shows only those respondents which use the functionality in 2019

WORKFORCE MANAGEMENT

The use of cloud-based workforce management solutions has more than doubled since 2015, growing from 10% to 24%, although, as with many of these contact centre applications, the **overall** use of this functionality (whether cloud-based or CPE) has stayed relatively similar.

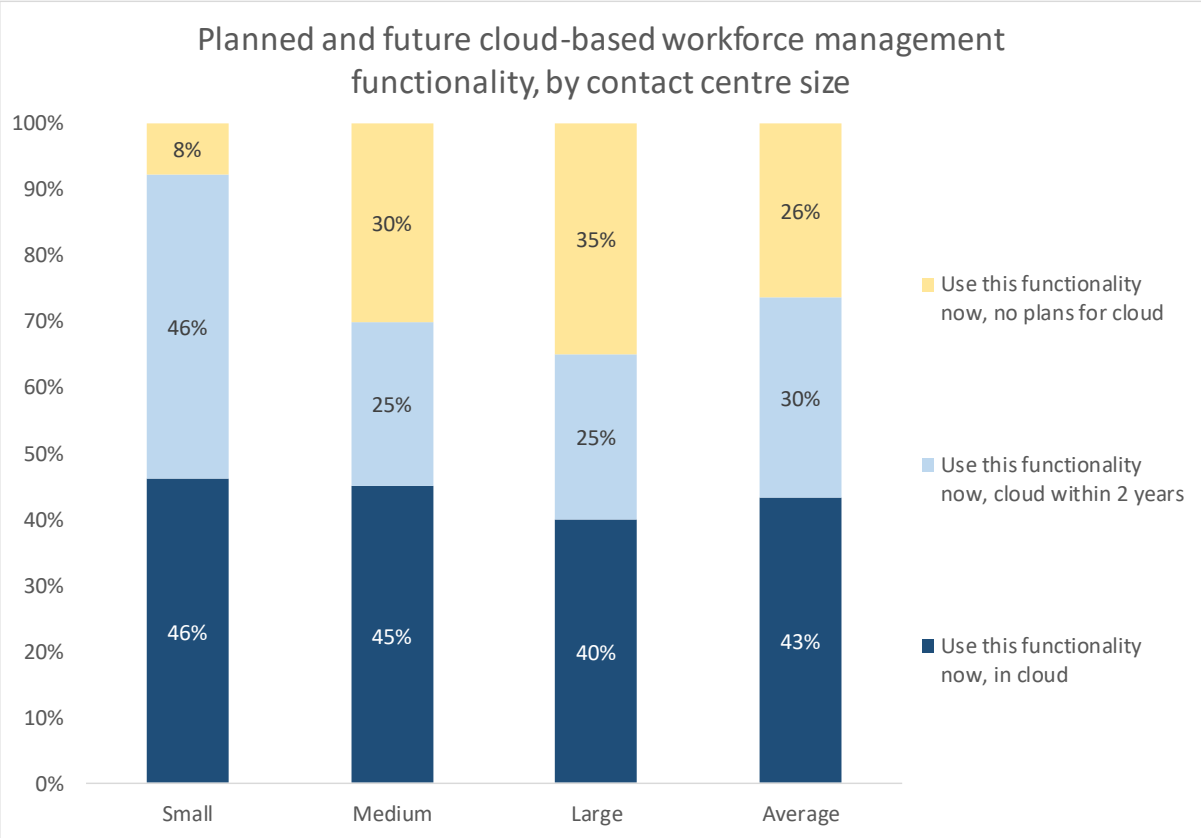
Figure 23: Planned and future cloud-based workforce management functionality (2015-19)



The actual use of workforce management solutions as shown in the table below tends to have a positive correlation between the size of the contact centre and the proportion of operations using it. This is less the case for cloud-based deployments, with 40% of WFM users from 200+ seat contact centres using cloud-based solutions, compared to 45% of mid-sized operations and 46% within the sub-50 seat sector.

There are significant expectations in all size bands – especially small operations – that the next two years will see major growth in the use of cloud-based deployments.

Figure 24: Planned and future cloud-based workforce management functionality, by contact centre size (existing users only, 2019)



Contact centre size	Use functionality now, in cloud	Use functionality now, cloud within 2 years	Use functionality now, no plans for cloud	Do not use functionality	Don't know / NA
Small (<50 seats)	20%	20%	3%	50%	7%
Medium (51-200 seats)	25%	14%	17%	31%	14%
Large (200+ seats)	28%	17%	24%	3%	28%
Average	**24%**	**17%**	**15%**	**28%**	**16%**

NB: table shows full data; chart above shows only those respondents which use the functionality in 2019

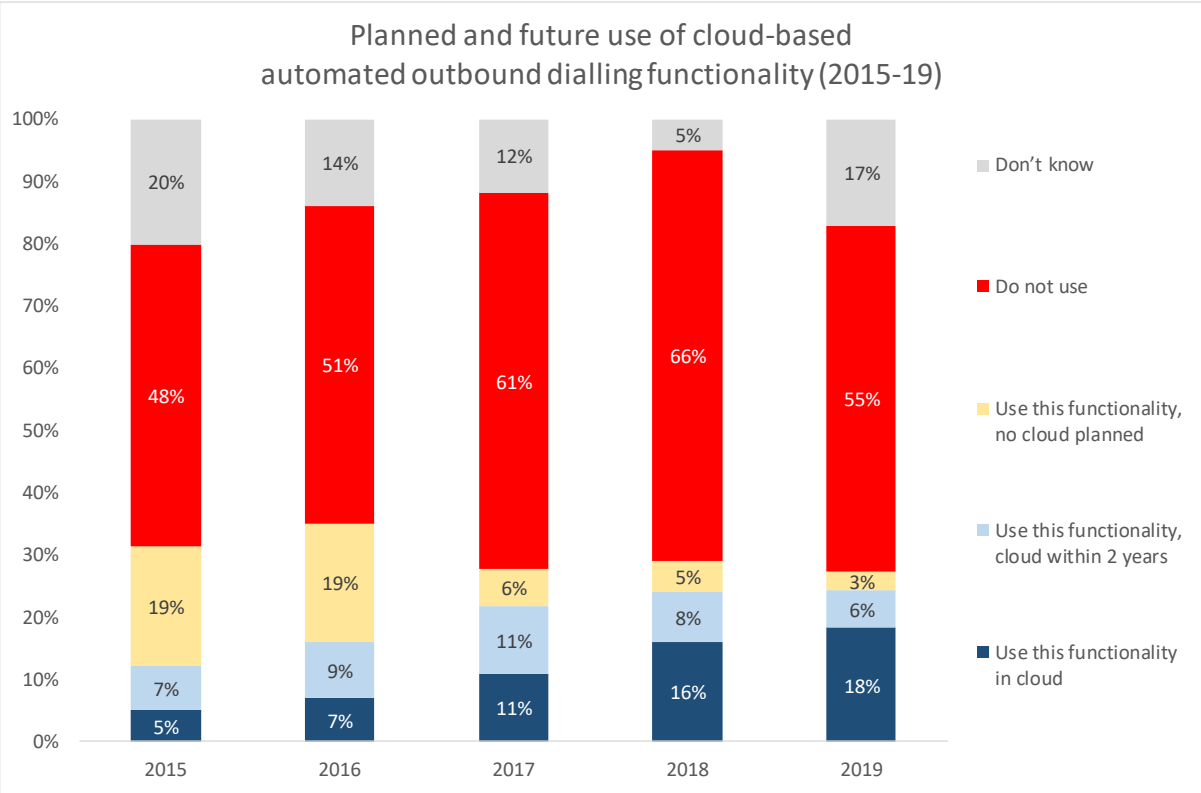
AUTOMATED OUTBOUND DIALLING

The use of automated dialling has always been restricted to a minority of survey respondents, with the range of respondents using this technology being between 28% and 35% over the five-year time period.

It is noticeable that although the use of automated dialling has not grown over the time period, the movement to cloud has been significant (more than trebling), and the interest in moving to cloud within the next two years is still significant.

By the end of 2021, survey respondents expect that 88% of deployments of automated diallers will be cloud-based.

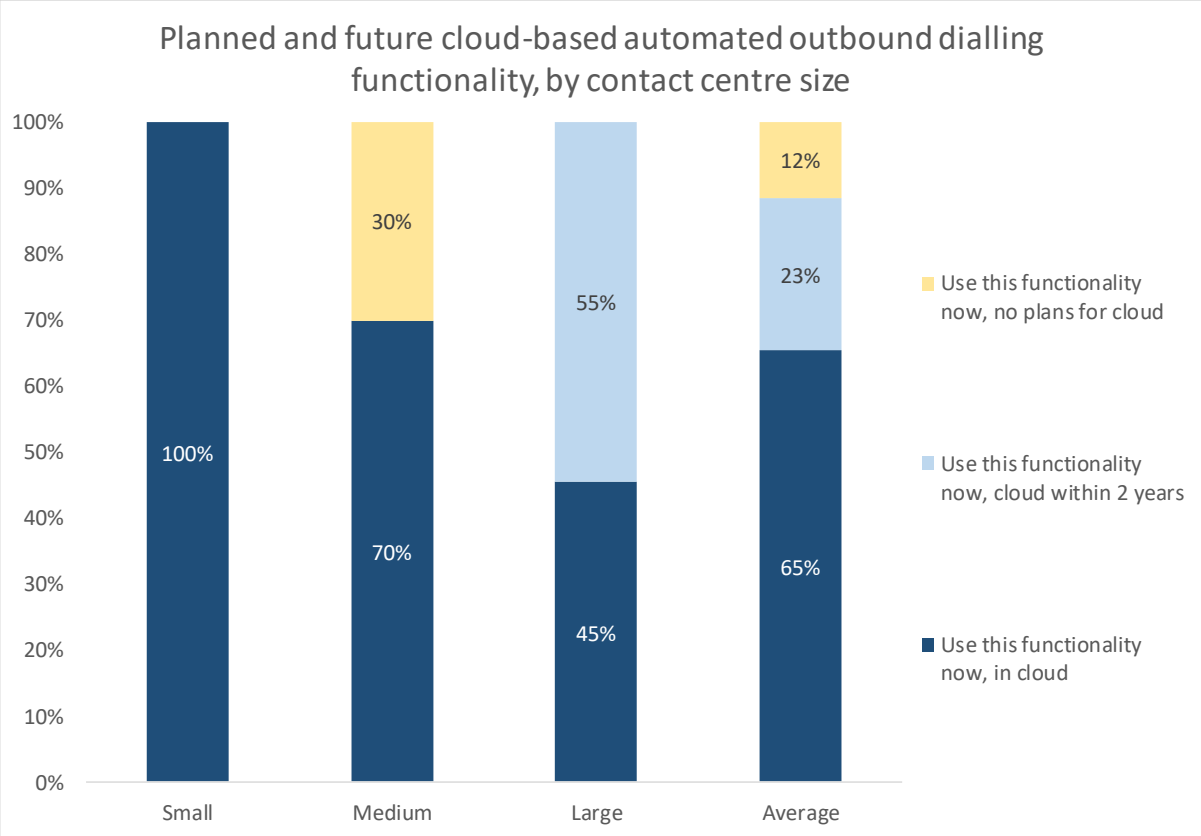
Figure 25: Planned and future cloud-based automated outbound dialling functionality (2015-19)



As expected, the use of automated outbound dialling is more prevalent in larger operations (although there are a surprising number of "Don't know's" in this cohort of this year's survey).

All of the respondents from sub-50 seat contact centres that use automated dialling do so within a cloud-based deployment, whereas 55% of those in larger operations report that they still do so within a CPE setup, although these are likely to move to the cloud shortly.

Figure 26: Planned and future cloud-based automated outbound dialling functionality, by contact centre size (existing users only, 2019)



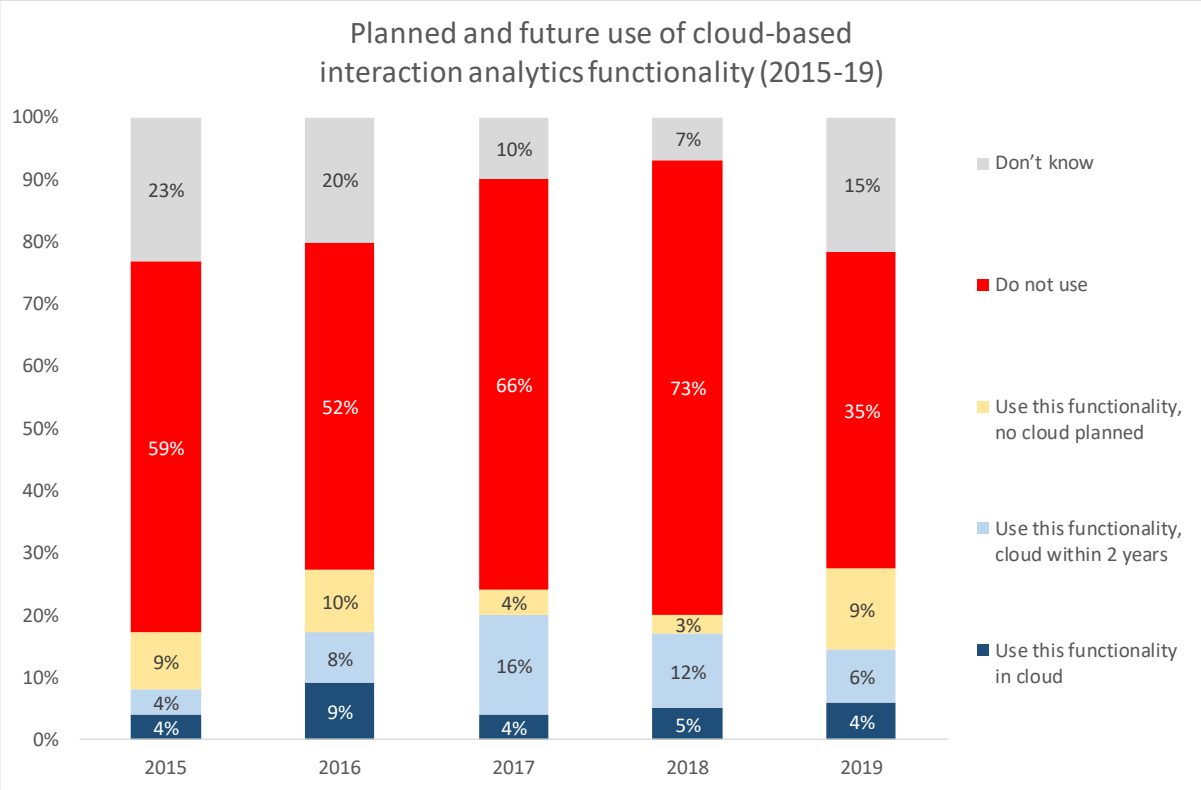
Contact centre size	Use functionality now, in cloud	Use functionality now, cloud within 2 years	Use functionality now, no plans for cloud	Do not use functionality	Don't know / NA
Small (<50 seats)	17%	0%	0%	83%	0%
Medium (51-200 seats)	19%	0%	8%	56%	17%
Large (200+ seats)	17%	21%	0%	28%	34%
Average	**18%**	**6%**	**3%**	**55%**	**17%**

NB: table shows full data; chart above shows only those respondents which use the functionality in 2019

INTERACTION ANALYTICS

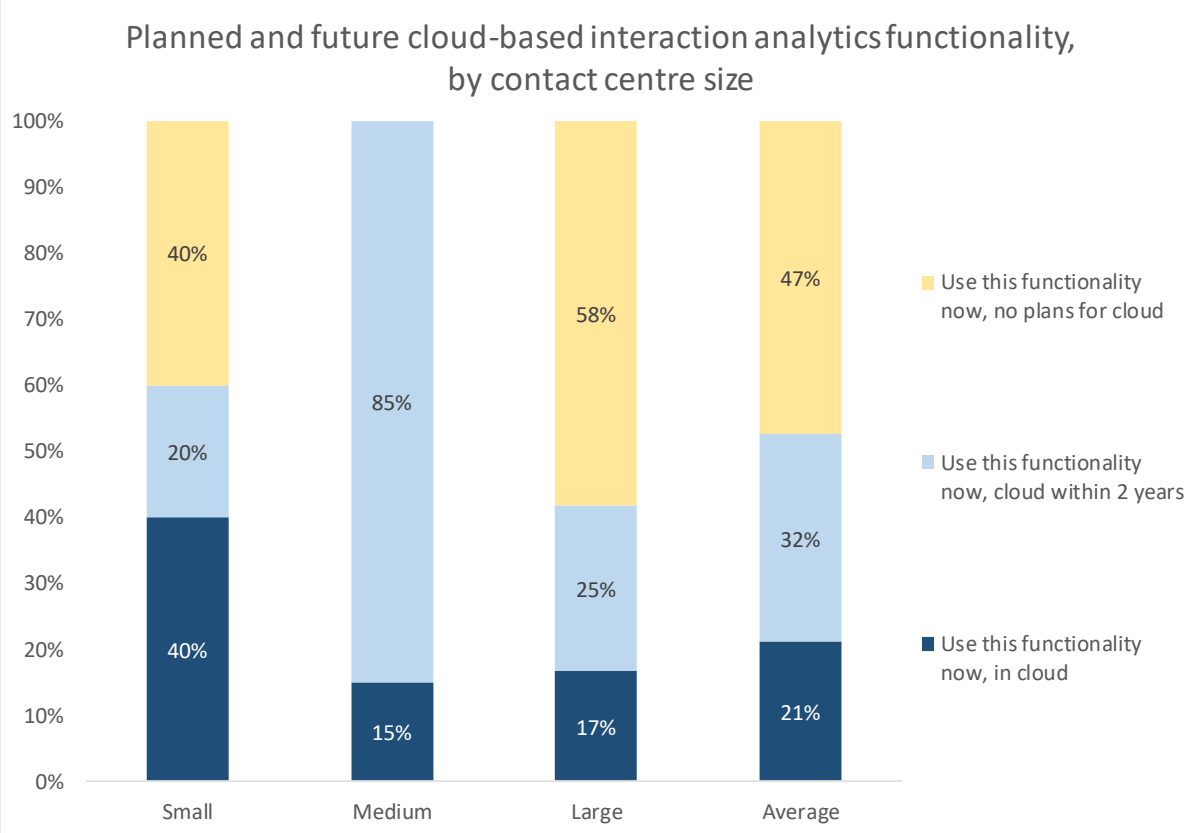
The use of interaction analytics as a whole is growing gradually, although survey results do not show the definite move to cloud that is prevalent in so many of the other applications studied. Only 4% of 2015's respondents stated that they were using cloud-based speech analytics, a figure which was repeated in 2019, despite some years' surveys reporting growth.

Figure 27: Planned and future cloud-based interaction analytics functionality (2015-19)



Speech analytics has been taken up by larger contact centres to begin with, with 41% of these respondents reporting that they use it. The potential move to cloud is less certain than with some other applications.

Figure 28: Planned and future cloud-based interaction analytics functionality, by contact centre size (existing users only, 2019)



Contact centre size	Use functionality now, in cloud	Use functionality now, cloud within 2 years	Use functionality now, no plans for cloud	Do not use functionality	Don't know / NA
Small (<50 seats)	7%	3%	7%	83%	0%
Medium (51-200 seats)	1%	5%	0%	83%	11%
Large (200+ seats)	7%	10%	24%	24%	34%
Average	**4%**	**6%**	**9%**	**65%**	**15%**

NB: table shows full data; chart above shows only those respondents which use the functionality in 2019

END-USER QUESTION 4: WHAT IMPACT WILL AI HAVE ON THE CLOUD-BASED CONTACT CENTRE MODEL?

The Contact Centre is the richest repositories of constantly refreshed and expanding customer data in your business. The insight you can gain from this data has the potential to redefine how you engage with your customers. This means that it's the perfect place to launch an AI strategy. You can train an AI application to interact with customers and provide insightful recommendations for agents to follow. AI speeds up processing by getting inquiries to the right agent first time, saving time and effort, and enabling faster customer response.

Not only is AI seen as a way to reduce costs and drive automation, but it can also help in assisting agents to make their job easier and achieve the desired result faster. AI can help with manual or repetitive tasks like tagging cases, searching for generic answers, proactively provide relevant information to help agents resolve cases quickly, and more efficiently so that they can focus on the most important part of their jobs, building lasting relationships with customers.

As part of our partnership with IBM, Enghouse Cloud Contact Centre leverages IBM Watson, their world-class AI application to analyse emotion and sentiment, highlight trends, and review touchpoints across the customer journey to extract detailed and actionable insights, which help the Enghouse Cloud Contact Centre deliver a better, more personalized experience.

IMPLEMENTATION AND USAGE

PRE-IMPLEMENTATION

The selection of most IT solutions is normally carried out in a similar way, but some steps you may wish to consider for cloud-based solutions include:

- A selection team should be chosen with responsibility for all of the areas affected, including contact centre operations, IT, compliance, back-office, business operations and sales & marketing

- While bearing in mind the underlying business processes that the technology supports, select the specific technologies that are to be cloud-based, and also those bespoke applications that are to remain in-house, such as specific complex reports. Take the opportunity to consider 'ideal world' functionality as well by considering the business processes which work well and which are sub-optimal. For the latter, consider and discuss with cloud providers how they can be done differently with the cloud solution

- Research the types of solution available in the market, and understand any actual differences between premise-based and cloud-based functionality. Provide vendors with specific instances of complex functionality and business processes required to meet your own particular requirements and challenge them to prove that they can be met. This should include all instances of existing back-office functionality that the solution needs to integrate with and where possible, a wish-list of functionality in the future

- Investigate publicly available referenceable sites from cloud-based providers that are similar to your own requirements, and submit an RPF (request for proposal) to the long-list. Request a detailed product roadmap along with timescales in order to assess whether this solution will meet your demands along the line. You may wish to invite solution providers informally to demonstrate their product before offering an RFP. Potential clients should look closely at the vendor's financial position and backing to make sure that the quality of service and level of innovation can be maintained in the future, also that they have the technological expertise in-house to keep making these improvements

- Any response to an RFP should include service level agreements over availability, call delivery, voice quality, speed to make requested changes, support hours and availability, details of security and redundancy offered, prices for customisation, contract length options, implementation times, contract cancellation penalties and notice periods.

PERFORMANCE & RELIABILITY

Cloud clients depend upon the solution provider to maintain a high level of service reliability, availability and uptime. This means there must be data centre redundancy and geographical separation, and enforceable service level agreements.

Service providers will test their systems on an ongoing basis, and a few will even guarantee their availability to 99.999% (the '5 9s target of carrier-grade availability), backed by penalties if they do not achieve this, although there is likely to be a significant premium payable for this level of guarantee. This level of reliability is the standard for very large contact centres which have paid significantly for this in a CPE environment, but is likely to be an improvement on what SMEs are used to, with their much smaller budgets. The nature of cloud-based systems – a that they can be accessed from anywhere by anyone with a browser, with little or no client-side software needed – means that problems at the client's premises can be circumvented by physically moving staff elsewhere. Potential users of cloud-based solutions should be aware of what they are comparing when they place vendors side-by-side for reliability assessment. Some vendors include the necessary downtime associated with maintenance and upgrades of an instance, others only count unscheduled downtime.

Potential clients should make sure that the provider's infrastructure is load-balanced and over-provisioned relative to the number of users to ensure resilience and consistent levels of performance. There is a risk that some providers add new clients without adding new hardware or other supporting systems (which would obviously be more profitable), and this would negatively affect the response times of the applications.

Ensuring business continuity during outages, facility emergencies and inclement weather is a critical requirement for any contact centre operation. Cloud-based contact centre models ensure business continuity by enabling agents to be connected to the technology platform and necessary applications from anywhere with Internet access. Even in an outage, companies maintain the ability to service and sell to the client base, undermining what could otherwise be a disastrous situation resulting in lost revenue, dropped calls and negative customer experiences. Cloud solutions eliminate the costly and time-intensive process of building and maintaining a back-up site from which to take calls and deal with emergency situations, and superior solutions are fully-redundant, with complete disaster recovery and business continuance delivered from multi-site locations.

Cloud solutions can also provide back-up disaster recovery protection to centres which prefer on-site CPE or a hybrid model, as reserve protection. In this way, disaster recovery can act as a first step into the world of cloud, with the company becoming more familiar with offsite functionality and hardware, which can lead to a greater commitment to put the primary functionality into the cloud once their own technology is at end of life.

ROI, TCO & PRICING

Before being able to calculate return on investment, it is necessary to understand the total cost of ownership of cloud-based solutions compared to their CPE equivalents. Many vendors have ROI tools that can assess where any cost savings would come from. These can include:

- Reduction or redistribution of agents (e.g. through homeworking or virtualisation) expanding the agent pool and service levels without increasing agent numbers overall. This is particularly the case for businesses requiring highly skilled and trained agents – health, medical, technology, life sciences and pharmaceuticals for example – as homeworking is seen as an effective agent retention and recruitment method
- Impact of increased functionality on call handling times and first-contact resolution rates (e.g. having multi-site skill-based routing strategies supported in the cloud)
- The in-house cost associated with the upgrades, maintenance and management of on-premise hardware and software, compared with that spent monitoring cloud-based systems (although minimal, businesses will still want to be aware of what is happening, when upgrades are scheduled, supplier liaison, etc.)
- Initial cost of CPE and the structure of financial payments, effect of depreciation, etc. (NB – CPE costs are likely to be substantially higher than cloud at first, but lower as time passes and costs are written-off. It is important to compare the overall cost of any cloud contract with the TCO of the CPE solution over the appropriate timescale)
- The value of staying current with technology, both in terms of reduced licence fees and the impact of superior systems on agent performance. Include the cost of additional training requirements in a frequent release environment
- Reduced platform downtime (e.g. moving to a platform where annual downtime is measured in minutes rather than possibly many hours)
- The opportunity gained to do other projects that would otherwise have been impossible as the resource would have been used to run on-premise equipment or implement CPE functionality
- In cases where functionality would be deployed in any case, the difference between the amount of time and effort this involves with cloud rather than on-premise (including on-premise installation)
- Cost of calls, the ease of moving between telephony providers, and the extent to which calls are included in the cloud package
- Compare the cost of staffing for seasonal volumes and spikes (licences, recruitment, training, staff salaries etc.) compared to cloud-based pay-as-you-go, homeworkers or short-shift workers, as well as attendant additional hardware fees for major on-premise volume increases (e.g. adding an extra server).

The distribution of payments is very different, as well as the overall fee paid. Although there may be an initial fee associated with cloud-based solutions (connected with the discovery and implementation phase, as well as a payment in advance), this upfront cost is likely to be far lower than with traditional on-premise purchases, although the latter may be alleviated somewhat in the case of a leasing arrangement.

TCO assessments of cloud vs on-premise deployments generally reach a conclusion that cloud-based cost savings are proportionately larger with increasing contact centre size, and also where the level of functionality is greater too. However, some solution providers report that longer-term, the depreciation associated with on-premise solutions means that the TCO gap narrows, so that after 7 years or more, the difference is much less, if not wiped out totally.

As expected, there is no single right calculation to the ROI question, although payback is stated by most solution providers to be within 12 months in virtually all cases, and in many, a considerably shorter timescale (perhaps 3-6 months). The actual figure depends on factors such as number of seats, the number of contact centre locations, the functionality employed, the costs of integration or customisation and other such factors. Most vendors have an ROI calculator for prospective clients to use. Any choice **not** to move to cloud is less frequently financial than for many other types of technology decision (except perhaps in cases where there has been large recent capital investment made), but may be more concerned with cultural issues, existing IT infrastructure and expertise, and other concerns such as customisation or integration with irreplaceable legacy systems.

From the vendor perspective, some say that cloud-based solutions don't impact particularly positively on their profitability, as revenues from contracts are recognised over a number of years, rather than immediately in the case of many on-premise sales. It does however provide a guaranteed income stream and help cashflow forecasts, allowing them to run their business with a greater confidence and stability, which is obviously helpful for their customers as well.

Contract lengths vary, but are generally in place for at least a year, more often two or three. Some vendors provide a zero-commitment option but these are likely to work out pro-rata perhaps 40-50% more expensive than long-term contracts. Solution providers differ widely in their contract offers, with some operating a very flexible per logged hour/minute billing system, whereas others will want an agreed minimum number of agents per month, with additional users billed as required.

For most vendors, especially those offering a multi-tenant model, the cost of maintaining and upgrading the solution is lower, which impacts positively upon their own costs.

Pricing will of course depend on the features and functionality that client choose to use, although the following table gives a very rough idea of what users can actually expect to pay. Generally speaking, when comparing similar levels of functionality, price points have come down over the past three years. Cost tends to be 10-20% higher for small operations on a per-agent basis. Businesses should note that per-minute telecoms charges are not usually included in the monthly cost.

Figure 29: Pricing examples

Functionality / size	Price (typical £ per agent per month)
Basic - voice only, may have recording, some outbound functionality	£15 - £60
Advanced – may have routing, automated outbound, reporting, basic WFM	£40 - £90
Enterprise - full blended and omnichannel, may include WFM, disaster recovery, quality management, analytics	£75 - £150

We have also seen examples of pricing such as £1.25-£1.50 per logged-on agent hour (including inbound / outbound; chat; SMS; basic IVR; recording; reporting).

Further notes on pricing

- Potential cloud clients should also check and include the cost per minute of delivering and making calls, as well as any additional platform usage fee (e.g. per logged-in agent minute)
- Non-standard service requests (such as customisation, extra reporting etc.) will also usually be charged for separately, with a rate of £70-£100 per hour being typical
- Multichannel functionality may be added on a per-seat basis, including email, social media and chat. Extra pricing of £15-25 per agent per month per extra channel can be expected
- Potential customers should also take into account any per supervisor/manager licence costs
- Most cloud-based providers offer pricing based on concurrent users, rather than specific named users, which reduces wasted licence fees
- Most cloud vendors offer pricing on a per-seat/per-month basis, but some offer the even more granular approach of per logged hour or even per minute, which is of particular interest to outbound telemarketing companies and outsourcers, for whom this directly impacts upon profitability, with daily viewing of billing offered by some vendors

- Businesses may be charged separately for connectivity to the data centre which may be on a per minute basis, so will need to make sure that any request for quotation includes the same levels of access, data and voice traffic. Solution providers also note that prospective customers should ask about minimum call charges, per second billing, per digit billing and the rounding up or down of telco charges

- Standard service level agreements start at around 99.7% guaranteed availability, with some vendors offering 99.999% on a premium contract. If these SLAs are not met, vendors will offer reduced rates as compensation. Service levels offered by some vendors may differ depending on contact type, although with the multi-tenancy approach everyone gets the same service levels.

Contact centres will experience significant reductions in one-off implementation costs, as there is little or no hardware or software to be deployed in the contact centre environment. It is likely, especially in multi-tenant environments, that any maintenance fee will either be included within the package, or at least be much less than the typical CPE maintenance charge which can be around 15-20% of the original licence cost per year).

Solution providers comment that the majority of savings realised in the first year are due to the elimination of maintenance and implementation costs, particularly in environments where there is a single cloud provider delivering all of the services, rather than the organisation still running some functionality itself which would still require maintenance and effort to keep software levels compatible between products.

The length of the contract is also an issue. Cloud solution providers will prefer long-term multi-year contracts, and offer significant discounts to encourage this, enabling them to predict their revenues more accurately and thus be able to invest in the solution with some confidence. Those customers which are new to cloud may prefer to have shorter contracts, with the option to break, at least until they become familiar with the offering. In theory, longer-term contracts benefit everybody in that customers of businesses which are financially secure are more likely to benefit from the stability and consistent levels of R&D that such a supplier can provide, as well as not having to re-engineer their customer contact environment and processes every few years.

Other factors influencing pricing include: number of agents/supervisors; functionality required (e.g. outbound only, blended, call recording, multichannel etc.); number of logged-in agent minutes per month; number of outbound minutes dialled per month (split by landline, international and mobile); number of SMS sent; length of contract.

END-USER QUESTION 5: OUR ON-PREMISE TECHNOLOGY WORKS WELL: WHY SHOULD I CONSIDER UPROOTING IT TO MOVE TO CLOUD AND HOW DO WE PROVE THAT THERE'S A REAL ROI?

Even if you have a functional on-premise Contact Centre, there may be a host of reasons to consider moving to the cloud. Cloud Contact Centres have many advantages over on-premise ones. For example, the increasing demand for digital channels can easily be met by leveraging the frameworks that are already implemented within the Cloud Contact Centre's omni-channel application environment. It also provides the organization with more operational flexibility including built-in business continuity (BCP) capabilities.

Cloud means you avoid the cost and headache of over-provisioning – it is simply more efficient and cheaper. Just by using the software, you can scale from literally a handful of agents to thousands (and back again) without downtime. You use what you need, when you need it, and only pay as you use it.

In contrast, a PBX system needs significant installation resources to get it up and running, a duplication of licenses, and then additional inter-networking if there are multiple locations to connect. A more costly proposition overall and the organization itself shoulders all the operational risk.

The type of efficiency offered by Enghouse Cloud Contact Centres enables agents to be situated anywhere, and use just about any device, as long as they have an internet connection.

Consider the Cloud. It's reliable, flexible and it's the simplest way to be prepared for all situations. Even the inevitable surprises.

Most cloud contact centre solutions only require agents to have a standard telephone/USB headset and an Internet connection from their desktop. Some cloud-based solution providers require software to be downloaded upon the agent desktop, whereas others need only a standard Internet browser.

Security

There are various independent accreditations and certifications used by providers of cloud-based solutions, some aimed at demonstrating the security of the datacentre (whether physical or virtual security) including ISAE 3402 or SSAE 18 in North America. Others focus on the process of processing payment card data (PCI DSS), whereas others are around information security controls (ISO/IEC 27000 family) or quality (ISO9001). Other interested parties include the Cloud Security Alliance, a not-for-profit organisation with a mission to promote the use of best practices for providing security assurance within cloud computing as a whole. Potential customers should look for independent third-party accreditation, proof of investment above and beyond the minimum required by regulation and regular penetration testing.

Cloud solution providers are confident that the dedicated security procedures and architecture in place within their solutions were likely to exceed those found in their clients' previous contact centre operations, having full-time dedicated security resources and a vested interest in keeping client data safe. A security breach for in-house contact centre is damaging and embarrassing; for a cloud provider to suffer a similar failure would impact very severely on their credibility and the very future of the company. However, security should not be left simply to the solution provider. Discussions should be had around firewall configurations, network security and DDoS (distributed denial of service) attack mitigation.

Solution providers note that while security concerns are still very much to the forefront of the conversation, the questions that potential customers have are now far more sophisticated and realistically founded compared to a few years ago. There is a great desire across the entire business to ensure all security requirements are met, and much greater detail offered to the solution provider on what is actually needed. Potential customers should identify and prioritise the services that require the highest level of performance guarantee, as requiring that all services need this level of guarantee is expensive and probably unnecessary.

The General Data Protection Regulation (GDPR) provides a single set of data collection, storage and use regulations for all companies to follow, and from May 2018, cloud providers who are data processors (rather than their clients, who are data controllers) have also borne responsibility for the legal protection and processing of the data. As such, the division of responsibilities between client and cloud provider should be fully understood.

Customers should look for solutions built secure by design, an approach where security is built in the system from the ground up starting with a robust architecture design. Superior multi-tenanted solutions permission resources to eliminate cross-talk between systems residing on the same host and some will only accept connections from permitted IP addresses.

Integration and customisation

Cloud vendors will keep APIs up-to-date, with screen-popping into a home-grown CRM system, look-up of call recordings in a CRM system, and sending reporting and recordings to a third-party application being mentioned as some of the more frequent integrations requested. Some providers have very close relationships with specific CRM vendors, and as a general maxim, cloud-based contact centre solutions can be seen to be following in the footsteps of cloud-based CRM.

Some customisation in existing CPE operations may have come about as an ad-hoc 'work-around' that has over time become the way in which things are done. It is important to revisit the business processes that the technology is there to facilitate, to see if there are easier ways to achieve this rather than reproducing the same method in a cloud-based environment. Concerns over customisation are frequently cited as a major inhibitor to moving to cloud.

There should not need to be any need to implement a new identity management system if you do not wish to. The cloud solution should integrate with your existing system so administration can control and monitor user access across all systems, both cloud and CPE if necessary.

Functionality

Solution providers state that moving from a premise-based deployment to the cloud should not reduce the functionality available to users. Potential cloud users are responsible for carrying out an audit of all existing and required functionality, and how it relates to defined business processes, before asking solution providers to guarantee that any move to cloud will include the required depth of functionality. It is not enough simply to accept that solution providers have 'workforce management' or 'outbound' capabilities. There is a great deal of upgrading and increased sophistication happening in the cloud world, which in some cases is from quite basic functionality, so potential users should have a list of specific processes and functionality that any solution should be able to deliver, and make sure that the chosen solution can deliver that, as well as being able to view a product roadmap that is updated on a regular basis (e.g. quarterly), which will project expected functionality a least a year in advance, preferably more.

Potential cloud users should be aware that moving to the cloud can bring its own limitations. For example, a customer’s choice of peripheral solution that they can use with the cloud solution may be limited to those which the cloud provider actually supports, and no assumption should be made that the functionality currently enjoyed will be replicated within the cloud environment. Many providers offer a wide variety of APIs, but this should be checked before making any decision.

It is also important to understand the opportunities for scalability. Adding and shedding agents when required is one of the big advantages that cloud computing has over its premise-based equivalent, but potential users should put real-life scenarios in front of bidding suppliers to make sure that the required level of scalability is possible and that no hidden costs or nasty surprises are associated with it.

Reliability

Multi-location datacentres are ubiquitous amongst cloud providers, providing redundancy and disaster recovery as part of the deal. Stated levels of availability amongst cloud providers are typically 99.99% or higher, and most are backed with performance-related guarantees, with reimbursement of fees if targets are not met. While this is somewhat reassuring, it will do little to assuage the loss of revenue or customer goodwill if the cloud-based contact centre solution is unavailable for any amount of time. Potential clients should investigate the exact levels of redundancy built into solutions, including the use of alternative network providers and mirrored datacentres if the problem occurs outside the software providers' purview.

Solution providers note that quality of service testing is vital to ensure that contact centre network traffic and any associated data processing has sufficient guaranteed bandwidth. 24/7/365 monitoring and support should also be a given. For operations using dynamic scripting, it is vital to ensure the fast and immediate reaction of input and response, and guaranteeing network quality of service should be high on the implementation priority list.

Service levels vary hugely: 99.999% (“5 9s”) means around 5 minutes of downtime per year; “4 9s” means 52 minutes per year, whereas “3 9s” is a maximum of 8 hours per year – almost a full working day of downtime. Questions should also be asked about how the service level uptime is calculated and the penalties for missing the service level agreement. Ask too about voice quality guarantees.

Additional questions should be asked about Recovery Time Objectives (how long it takes to bring the system back up after a failure) and Recovery Point Objectives (how often the system is backed-up, so as not to lose any data). These figures will depend on a balance of the cost of back-up and how mission-critical it is for your business to have very short recovery times.

Cost

Most cloud solution providers operate a per-agent/per-month option for pricing, with a minimum number of logged-on agents per month being the baseline minimum cost. To this, the cost per minute of calls made or delivered should be added, although many providers will offer this as part of the package, to make fees more predictable. Additional costs for customisation and integration should also be investigated.

CLOUD DECISION-MAKERS

Solution providers indicate that in the past, decision-makers tended come from two main areas: IT and finance, with senior people within contact centre operations (e.g. Contact Centre Director) who want specific functionality also heavily involved in some cases. Recent years have seen CCO / senior CX staff become increasingly involved in decision-making.

Some solution providers have seen more drive coming from the CIO or strategic IT leader, particularly in the midmarket. Larger enterprises' decisions will tend to be driven more by a mix of business unit owners and IT leaders.

IT is often keen to minimise the management and support of server environments, with the main focus on the key IT systems that support the business. If they can move telephony to the cloud, it allows the repurposing of significant resource overhead and allows them to focus on key systems and develop new functionality. Some solution providers state that the majority of their customer opportunities come from businesses which are solely looking at cloud, having made their minds up usually due to their telephony infrastructure being at end-of-life. Such businesses wish to redeploy their IT resource away from the maintenance and integration of the contact centre platform into something more strategic.

The finance driver comes from the easy management and control of budgets, with fixed cost per head per month making financial planning easier as well as removing the necessity of having upfront capital expenditure.

PROOF OF CONCEPT AND TRIALS

Solution providers note that proof of concept and trials are now less likely to be requested by potential clients than they were a few years ago, as large numbers of reference sites and general levels of market education are far higher than they used to be. Having said that, solution providers note that it is the enterprise organisations that are keenest to prove the concept first: for example a single office or department will try it, then they will roll out the solution more widely. Small and medium organisations are more likely just to implement cloud functionality in one piece.

It is worth noting that cloud offerings can speed up sales and deployment cycles, as companies can move faster to purchase a cloud-based solution because there is no large upfront investment required needing multilevel sign-off. This can also enable smaller, autonomous departments to begin using cloud solutions from their own budget, rather than have to look for budget from corporate.

Although the cloud doesn't offer itself particularly to 'quick wins', business looking to prove the concept within the organisation may look to deliver the first implementation through new business initiatives. For example, a new outbound calling campaign, trialling a new service to clients or introducing a homeworking regime. Alternatively, identifying an application that is at end-of-life, and using cloud rather than a CPE replacement will make an immediate benefit to the bottom-line.

IMPLEMENTATION

Successful cloud customers generally have a visionary or champion at a high level of the organisation that makes sure all of the competing interests work together to achieve the big picture. Where possible, it is important to take your time when choosing a cloud supplier, as this will hopefully be a long-term relationship.

Look as far into the future as possible when considering how you wish to be dealing with your customers, but leave enough flexibility to change plans. Consider the additional costs that may be needed for this extra functionality, and make sure that the correct type of cloud architecture is available to you: do not sacrifice functionality for the convenience of the cloud provider, and make sure that integration with existing key systems is agreed to.

TIMESCALES

In a traditional CPE project, the project lifecycle can take well over a year, from the scoping of initial requirements through to implementation and use. Cloud offers the opportunity to reduce this greatly, and with the fast pace of customer contact technology, businesses are concerned about missing the next wave of innovations.

The time required to implement a cloud-based solution will differ hugely depending upon the level of complexity and functionality required, the level of integration and customisation and the cloud deployment method chosen. As a general rule of thumb, solution providers indicate that a cloud-based implementation will tend to take around half the time of an equivalent CPE deployment, as there are fewer delays while companies purchase hardware and upscale their teams. The more 'cloudy' the deployment model (e.g. multi-tenant/public cloud rather than private cloud, multi-instance or hybrid), the quicker the deployment tends to be.

While the actual technical implementation stage may last only a matter of weeks, the move to cloud environment is an opportunity for businesses to re-evaluate the extent to which their customer contact operation supports the goals of the business. As such, it may be beneficial to carry out a root-and-branch exploration of current contact centre operations and supporting business processes, identifying any gaps in functionality or process that the move to cloud would give an opportunity to improve. The timescale for this, which will include the functional design specification, is unlikely to be measured in days or even weeks. Once the organisation is satisfied with the direction in which it wishes to go, the vendor selection process may be carried out, using the results of this assessment to guide the decision-making process.

Once the decision to proceed with a specific vendor's cloud solution has been made, the next step is to implement. While every project is different, and depends upon the size, functionality and complexity of any integration, most solution providers report that cloud-based contact centres can be operational within a matter of a few weeks (or even less if the implementation and integration is relatively simple).

It may be divided into the following stages (some of which may run concurrently), which will differ greatly in length due to the size and complexity of the organisation and its required functionality:

- Discovery: 5-10 days
- Build, training and reporting: 5-20 days
- Implementation and testing: 5-20 days
- Fine tuning and adoption: 2-10 days
- Bespoke agent and management training: 3-5 days
- eLearning and training support as appropriate (likely to be 1-2 weeks).

Post implementation support is becoming an increasingly important element of the overall package, and 24/7/365 support with dedicated account / technical contacts is much more common.

END-USER QUESTION 6: IS THERE ANYTHING THAT SUCCESSFUL CLOUD-BASED CONTACT CENTRE PROJECTS HAVE IN COMMON? ARE THERE ANY PITFALLS TO AVOID?

There are many things to consider to ensure the successful implementation of your Cloud Contact Centre. Choosing the right platform is only one part of the process. Engaging your key stakeholders in the project right from the start can significantly increase the probability of a successful implementation along with the universal adoption of the platform's new and more comprehensive capabilities.

Cloud software is all about removing the burden from the IT department, so the chosen solution should not be complicated to use. Think in terms of an easy to use graphical user interface (GUI) that is quick to configure, standard templates that don't have to be customized, with intuitive and easy to manage workflows. Furthermore, consider the integrations that you already have in place with your current solution – can your provider deliver these integration cost-effectively? Organizations that already use cloud services for other business needs can transition to a cloud-based Contact Centre almost overnight – a 'cloud-aware' corporate culture is the key success factor here.

On the other end of the spectrum, excessive security applied by a legacy IT organization can severely diminish the benefits of the Cloud Contact Centre, especially if agent PCs settings are locked and network connectivity is limited to the corporate VPN and proxy services.

To guarantee success, all stakeholders must align behind this new way of operating its communications/collaboration and Contact Centre infrastructure. Without doing so, these projects fail. When supportive of the cloud approach, the IT organization can refocus its resources to concentrate on developing, fine-tuning and supporting new applications that will better differentiate the company in its markets and with its customers. A beneficial situation for all.

INTEGRATION & CUSTOMISATION

Some solution providers may state that much of the integration required within the legacy CPE environment is unnecessary within a wide-ranging cloud-based solution, as the various components and functionality are architected to work together from the beginning. However, while out-of-the-box, plug-and-play application functionality is possible, the reality is that some level of integration with legacy applications and data sources will be required in order to fulfil the business's needs, and solution providers offer API connectors to CRM systems and other applications to this end. It may be that some historic CPE customisations are no longer necessary, as the functionality now exists in the cloud-based solution, or with a standard integration.

Being able to continue using relevant existing CPE systems, and access databases and back-office systems is a minimum requirement for all businesses considering cloud-based solutions, and one which is still of great concern to many organisations. As all businesses are unique, there is no generic solution to this, but many cloud providers have pre-built integration with leading CRM applications and web service APIs enable customers and technology partners to create tightly integrated contact centre applications. This API framework also enables new customisations such as persona-based and role-driven desktops, blending agent and CRM desktops into a single view.

Many users of cloud solutions require interaction routing based on data extracted directly from an enterprise data source, or through interaction with a web service or Java API. It is important to deploy a strategy that keeps data in the most suitable locations and which can be linked through the use of unique identifiers. If dynamic routing or voice self-service is required, there may well be some software development required to link the cloud solution with back-end systems, but the use of open web-based interfaces rather than proprietary client/server protocols to transfer the CTI-type data will reduce the effort of integration.

Depending on the requirements of the business and the application involved, solution providers note that there are numerous ways of integrating: by transferring data periodically in data batches through real-time communication on the server side or by actioning real-time requests from the workstation.

Some solution providers note that the private cloud option is becoming more popular, where a third party is responsible for the management of dedicated infrastructure, especially in environments which require complex integration and customisation. Other solution providers state the private cloud is far more suitable to very large customers, and that the 'democratisation' of technology offered by multi-tenancy means that everybody gets the most up-to-date functionality at the same time.

POST-IMPLEMENTATION: THE RESULTS OF USING CLOUD

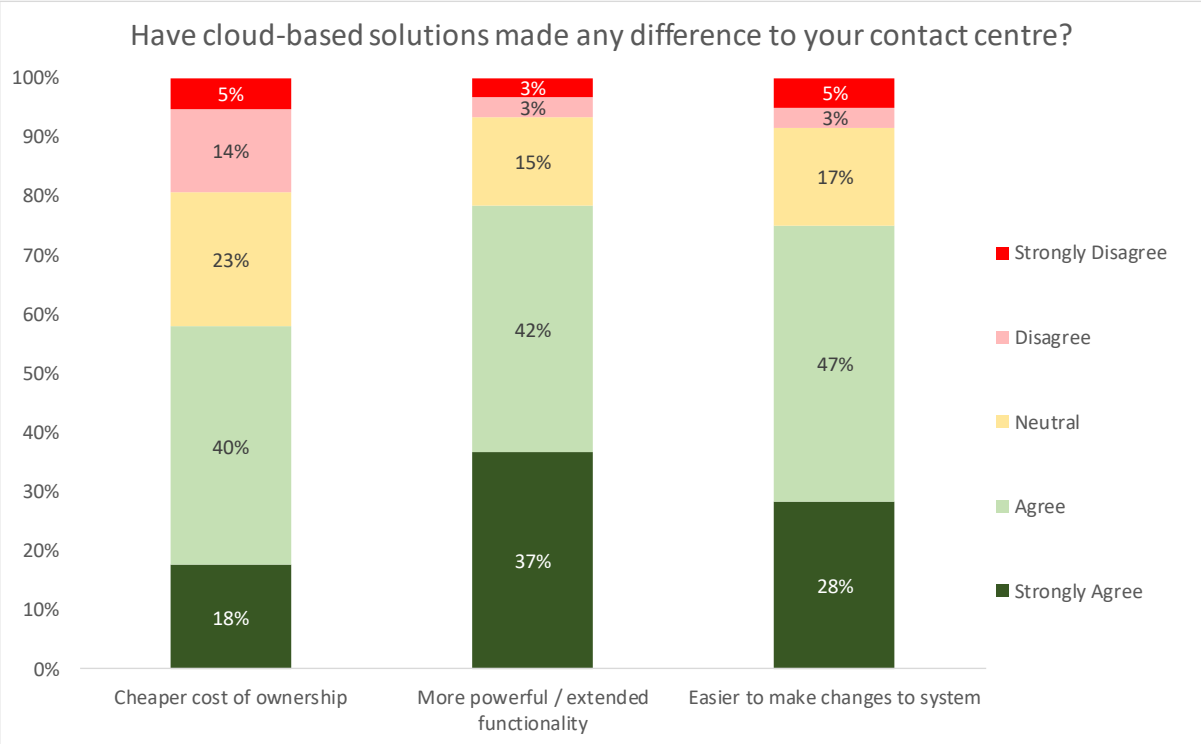
Those contact centre respondents who have actually implemented a cloud or hosted solution have generally found that it has delivered significant advantages in most cases.

58% of respondents stated that cloud-based solutions had given a cheaper overall cost of ownership of their contact centre technology, although 19% disagreed, usually not strongly.

79% experienced more powerful extended functionality in a cloud-based environment, with only 6% disagreeing that this was the case.

75% of respondents stated that cloud made it easier to make changes to the system, with 8% disagreeing.

Figure 30: Have cloud-based solutions made any difference to your contact centre? (2019)

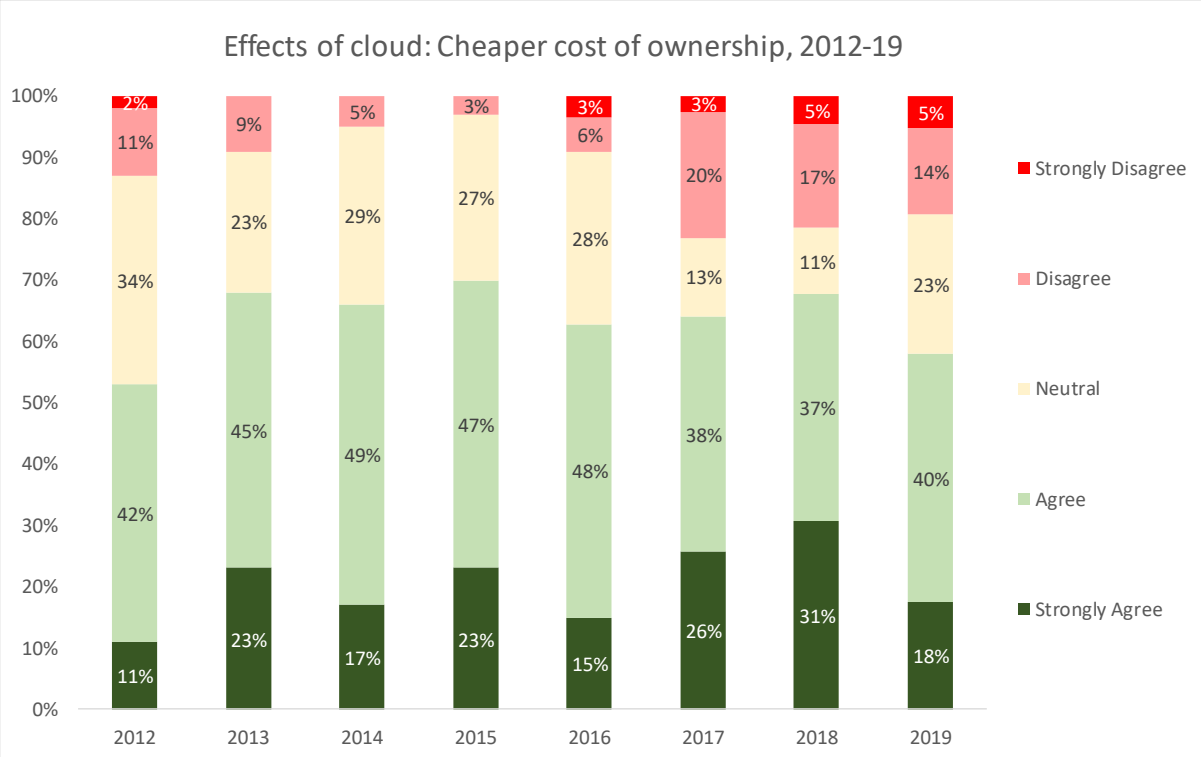


Despite different companies taking part in this research each year, the findings have been consistent for many years and readers can treat these with some confidence.

To show this, the following three charts show how each of these effects has been viewed by respondents over the past eight years' surveys. (NB – As the option "Don't know" was not always offered in past surveys, these responses have been removed from the following three charts, and the remaining proportions recalculated).

The belief that cloud offers a cheaper overall cost of ownership is fairly consistent, although the relatively high proportion of respondents in 2017-19 stating they disagree with this is something to track in the future. However, in all cases, there is a significant net feeling that cloud does decrease the cost of ownership.

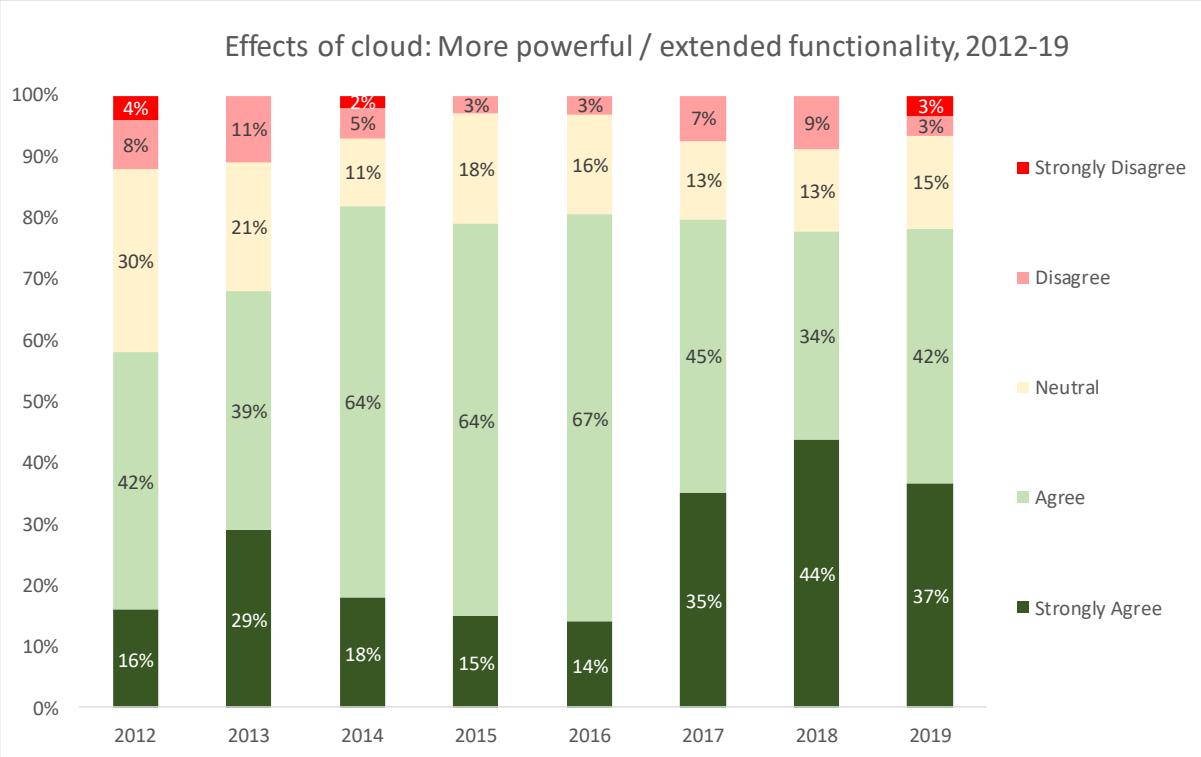
Figure 31: Effects of cloud: Cheaper cost of ownership, 2012-19



Looking at the effects of cloud on functionality, there is a very strong feeling that this deployment model offers more powerful and extended functionality, which is especially shown to be the case in the past three years.

Taken together, this chart and the last one suggest that as the depth of functionality provided has increased, there has been a corresponding cost increase.

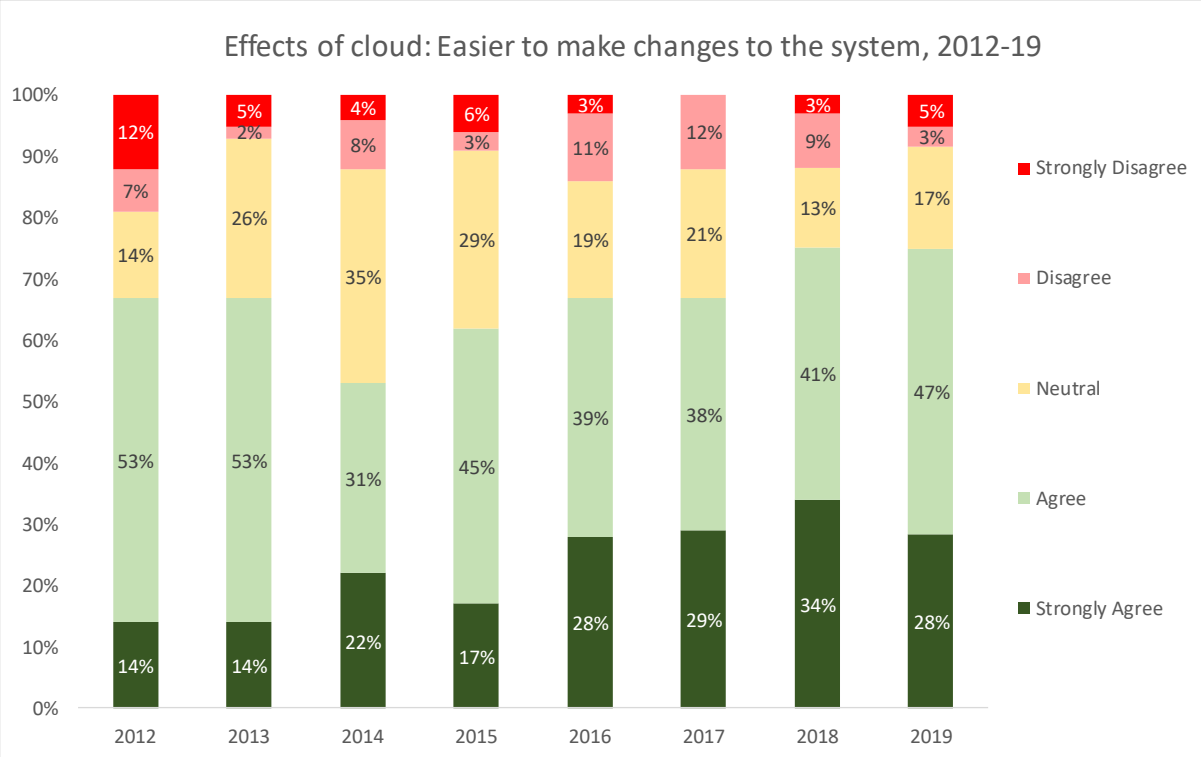
Figure 32: Effects of cloud: More powerful / extended functionality, 2012-19



Over the years there has been a steady feeling that cloud makes system changes somewhat easier, and this opinion has risen every year since 2014.

This may be the result of cloud solution providers now offering a quicker and easier method for contact centres to make changes to their solutions, as well as the case that contact centre users have become more familiar and comfortable with making changes in a cloud-based solution.

Figure 33: Effects of cloud: Easier to make changes to the system, 2012-19



THE FUTURE OF CLOUD-BASED CONTACT CENTRE SOLUTIONS

The general view from the vendor community is that cloud-based contact centre solutions are an evolution in the industry, rather than being revolutionary. At the top end of the market, the sunk costs, complex processes and in-house expertise held by the largest and most-established contact centres have held back a wholesale early move to cloud at enterprise-level, but at the technology end-of-life stage, cloud is now a credible option to take even for these mission-critical operations. The power that switch providers used to have over the contact centre industry has been long broken, and even the most risk-averse and conservative companies are exploring other options to the traditional on-premise model.

For many established operations, cloud-based functionality is an addition to their armoury, not a complete substitution. It is thought that the majority of current new implementations have at least some element of cloud-based solutions involved and vendors report very significant growth in cloud deployments, certainly compared to their premise-based offerings, although the proportion of contact centres using **solely** cloud technology is still relatively small.

In terms of functionality, the core contact centre functionality is well-entrenched in the solutions studied in this report and has been added to significantly in the past couple of years, bringing it to parity with the existing CPE solutions in many cases. There is a great deal of focus upon adding real-time analytics, a wide digital channel functionality, working with AI to extend functionality further and in improving the reporting capabilities offered.

A major driver for cloud-based contact centre solutions has been that more and more of the CRM and other enterprise and personal software markets has moved to the cloud. As ingrained cultural and technical inhibitors to outsourcing enterprise IT have been broken, it has dragged contact centre functionality along with it, with the presence of ever more tight integration between contact centre and CRM functionality evidence for this.

Despite cloud-based contact centre solutions offering smaller operations the biggest potential jump in functionality and performance, there had previously been a reluctance to engage with vendors to understand the reality of what cloud can bring. This has changed somewhat, especially as these businesses have seen a great growth in cloud-based CRM and contact management solutions, with call routing being a popular option as well, and the current obligatory rise in remote working is likely to change the contact centre landscape forever as businesses experience the flexibility and scalability that cloud-based solutions can provide, as well as the opportunity to break down the siloes in their organisation.

To some extent, cloud-based solution providers have had their advantage over their CPE rivals watered down somewhat, as the latter have reacted to the pay-as-you-go/Opex model of pricing by offering something along similar lines through monthly rentals and leasing arrangements. The flexible and scalable nature of cloud-based solutions however has meant that some providers now offer increasingly innovative pricing arrangements, going down to per hour or per minute, or even per second billing that directly reflects the resources being used. This model is particularly interesting for outsourcers, as well as those businesses with highly variable and seasonal revenues and those for whom a need to reduce IT resource costs is greatest.

Many solution providers are starting to look outside the immediate contact centre environment, trying to widen their appeal within the enterprise. Many have been looking at the field service and content expert areas for many years, creating a virtual pool of knowledge that can be drawn upon as required, regardless of location. More recently, the back office has become an area of interest: like the contact centre, it is task-oriented and theoretically suitable for similar types of efficiency improvement and management techniques, with similar metrics possible.

Some solution providers are enthusiastic about WebRTC (a communications standard that allows application developers to write applications, without requiring additional plug-ins, downloads or installations to use, allowing audio and video conferencing applications to run on browsers via Javascript APIs, supporting voice, chat and video), stating that these will simplify cloud deployments. WebRTC means that there is no on-premise hardware, software, and telephony infrastructure at all, as the web browser becomes a fully-featured agent desktop with a phone, greatly reducing the cost of ownership.

For solution providers, the move towards cloud has been a calculated risk: the initial cost of setting up data centres and altering existing solutions or building new ones to fit this deployment model has cost a great deal of time and money. Once a critical mass of customers is achieved, and the longevity of contracts gives a certain amount of confidence and reassurance in the future, we can expect to see further new functionality and features. While the depth of functionality offered through the cloud will certainly increase in the future, just as important is the improved ability for business users to modify core functionality such as routing and IVR.

One key issue to face is that ceding control of IT to a third party means that the business cannot just choose to bolt-on whatever additional functionality it wishes to, but must rely upon the cloud provider to have this functionality available if required, and at a price that is acceptable. This means that businesses must try to look far into the future (at least as long as the cloud contract they are signing), and estimate the functionality that they may require during this period. This is difficult in that there may not be an expertise or real understanding within the current business of what will be required or how this will work.

The cloud contact centre industry is accelerating, with the recent crisis only making the advantages of cloud clearer. However, while solution providers are deliberately answering each question that the market has about the security, control, integration, functionality and risk associated with cloud-based contact centres, there is an understanding that CPE-based solutions may still be preferable for some.

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