CONTACTBABEL

The UK Contact Centre Decision-Makers' Guide 2024

(21st edition)

The PCI Compliance & Card Security chapter

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Extract from “The 2024 UK Contact Centre Decision-Makers’ Guide (21st edition)”

Published February 2024

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ABOUT THE UK CONTACT CENTRE DECISION-MAKERS' GUIDE

The "UK Contact Centre Decision-Makers' Guide (2024 – 21st edition)" is the major annual report studying the performance, operations, technology and HR aspects of UK contact centre operations.

Taking a random sample of the industry, a detailed structured questionnaire was answered by 225 contact centre managers and directors in October and November 2023. Analysis of the results was carried out in November & December 2023. The result is the 21st edition of the largest and most comprehensive study of all aspects of the UK contact centre industry.

This White Paper is taken from the "PCI Compliance & Card Security" chapter of the report, sponsored by Encoded.

The whole report is available free of charge from ContactBabel.

PCI COMPLIANCE & CARD SECURITY

Fraud continues to be a widespread concern both for retailers (merchants) and the finance industry. According to UK Finance[1], fraud losses on UK-issued cards, remote banking and cheques totalled over £1.2bn in 2022m with payment cards accounting for 45% of total 2022 financial fraud loss during the year.

One of the key ways that contact centres currently prevent fraud is by training agents to understand the risks and to use security best practices. Manual processes and agent training are consistently stated to be one of the most widely-used methods for reducing fraud, with around half of UK contact centres doing so. However, with fraudsters becoming increasingly clever at picking up personal data and passwords, relying on training is no longer enough.

Additional security questions during a call are typically required to verify identity. However, this approach takes longer and can annoy the customer as their legitimacy as the card holder is being questioned. Declined transactions by issuing banks also present a challenge as they can lead to additional costs, as both the acquirer and gateway require payment.

A card payment may be declined for multiple reasons in addition to attempted fraud, for example insufficient funds, unusual purchase patterns, a new bank card or incorrect CVV code. All of these reasons can prove costly to contact centres and customers.

How agents manage card payments during a call is important in terms of customer experience. While it is necessary to carry out the right identity and affordability checks this should not be detrimental to customer service.

New technology solutions are available that can facilitate and protect mail order, telephone order (MOTO) payments and allow smoother customer journeys. They enable an agent to advise the customer that an additional level of validation is required, rather than simply saying the transaction has been declined. Card holder identity can be established using a variety of validation methods, including 3D Secure (3DS) which is an additional two-factor authentication security layer used in online credit and debit card transactions.

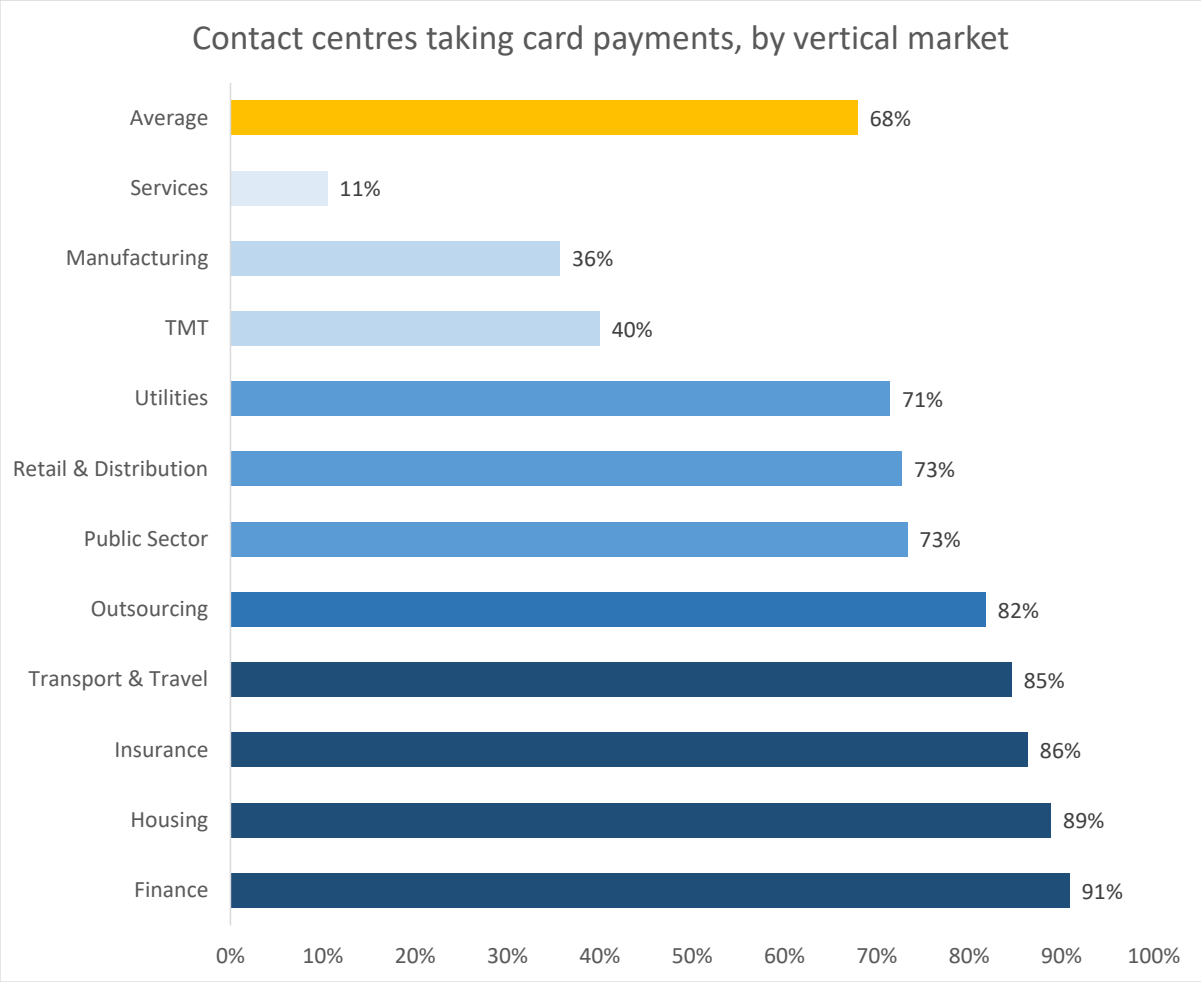
As well as helping to combat fraud, the result is increased transactions, reduce costs and a positive customer experience – a high priority for any contact centre.

[1] https://www.ukfinance.org.uk/policy-and-guidance/reports-and-publications/annual-fraud-report-2023#:~:text=Our%20Annual%20Fraud%20report%2C%20sponsored,eight%20per%20cent%20on%202021.

THE USE OF PAYMENT CARDS IN THE CONTACT CENTRE

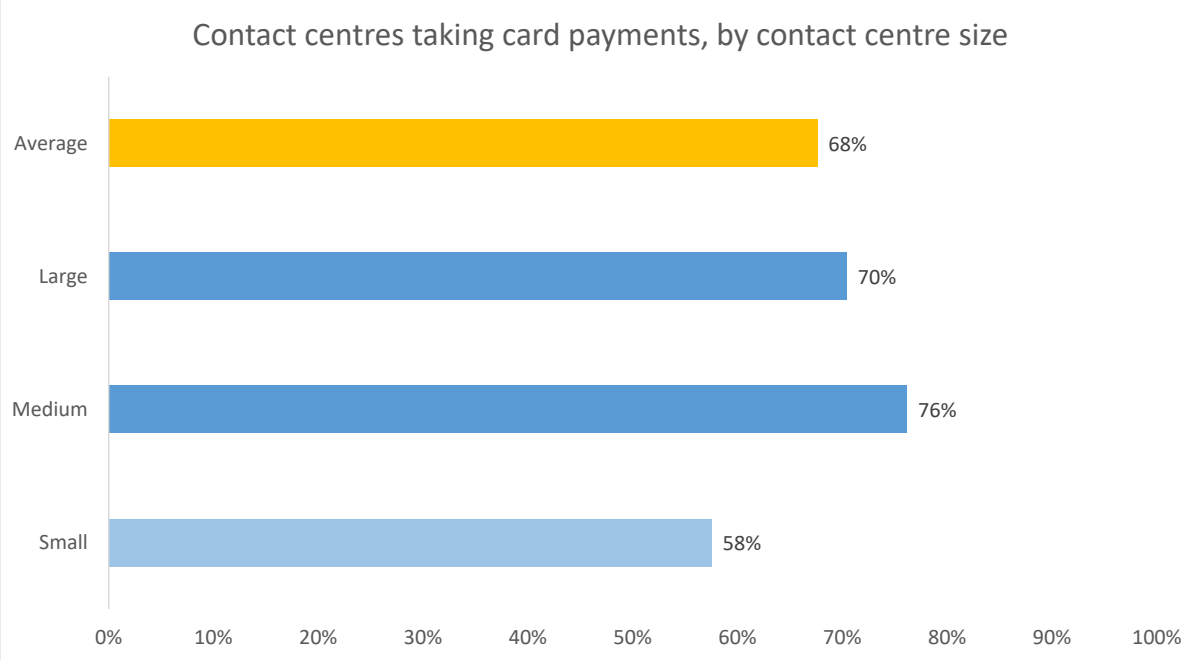
The majority of respondents in all vertical markets take card payments in their contact centres, except for the manufacturing, TMT and services sectors.

Figure 1: Contact centres taking card payments, by vertical market



The usual positive size correlation is present to some extent once again this year. As is shown later in this chapter, the cost of compliance means that some contact centres have stopped taking card payments.

Figure 2: Contact centres taking card payments, by contact centre size



Those businesses which wish to take card payments need to be PCI compliant, or take their operations out of scope entirely by contracting a third-party payment solution provider to handle payment for them.

PCI DSS BACKGROUND

The Payment Card Industry Data Security Standard (PCI DSS) is the creation of five of the largest payment card providers: VISA, MasterCard, American Express, Discover and JCB International, which together have named themselves the PCI Security Standards Council (PCI SSC).

The Council wished to clarify and align their terms, conditions and regulations into a single agreed global framework. The Council maintains, evolves, and promotes the Payment Card Industry Security Standards. It also provides critical tools needed for implementation of the standards such as assessment and scanning qualifications, self-assessment questionnaires, training and education, and product certification programs.

Compliance to the PCI DSS is a contractual obligation by the Merchant to either the scheme or the acquirer (in the UK, to the acquirer; in the US to individual schemes and/or acquirer). Penalties are levied by the schemes in the event of a data breach, and may even deny the merchant the ability to take card payments at all. At the time of writing (December 2023), the current standard is PCI DSS 4.0, which was released in March 2022 and which businesses have until 2025 to comply with.

To be PCI DSS compliant, merchants have to complete the correct Self Assessment Questionnaire (SAQ) that applies to the payment channel that they are assessing. They complete the SAQ documenting evidence of compliance and then get their most senior responsible executive to 'attest' (warrant) that the organisation that they represent meets the requirements of the standard. Third Party Service Providers (included hosted contact centre providers) have to complete SAQ D SP (Service Provider).

PCI DSS is not a prescriptive methodology to be followed to the letter, but should be viewed as a set of contractual requirements that organisations, their Internal Security Assessors and or, external Qualified Security Assessors (QSAs) can interpret in conjunction with the business's existing processes, technology and policies to reach the required level of information security. PCI DSS 4.0 has moved towards being more flexible and outcome-based: rather than specifying exactly what and how a business needs to implement a technology or security measure, it states what must be achieved, leaving businesses to work out how best to do so while taking into account their own unique environment.

Compliance with PCI DSS should also be seen in the wider context of a far-reaching information security framework, which may also take into account industry-specific regulations. There is likely to be a balance to be found between compliance with the various regulations in the context of the business's unique processes and internal guidelines. It's important to remember that – as especially noted in PCI DSS 4.0 – PCI compliance is not a once-a-year box-ticking exercise, but should be entwined in the security DNA of an organisation: QSAs are now told to select samples from throughout the year to prove compliance, rather than just using a snapshot at the time of assessment.

A list and explanation of each SAQ is available from the PCI Security Standards Council here.

QSAs and self-assessment questionnaires (SAQs)

The PCI DSS guidelines state: "As a starting point, consider whether the organization should aim at excluding telephone-based card payment data entirely…for organizations committed to taking payments over the telephone, consideration should be given to techniques that minimize exposure of PAN and SAD to the telephone environment and balance that with user/customer experience requirements, with the object of significantly reducing the CDE (card data environment) or eliminating the CDE altogether".

SAQ A is relevant to card-not-present merchants (including contact centres) who have outsourced all cardholder data functions to a compliant third-party, and who do not process, transmit or store any card data, even if encrypted, in any circumstances. Completion of SAQ A is therefore relatively easy and quick and on the face of it, this seems to be the obvious method for contact centres to consider, with many QSAs recommending this.

For Level 1, 2 and some 3 merchants, SAQs have become channel-related (e.g. a organisation may complete an SAQ for chip-and-pin payments, and another for phone or website payments), and PCI strategies are becoming increasingly built up by channel, reflecting the specific risks and controls that need to be put in place.

If using IVR, businesses should make sure that they do not discriminate against those customers who are unable to complete card payments via touchtone, and who need to read out card payment details. Examples include blind people, a proportion of elderly people uncertain with DTMF touchtone, and those customers who are perhaps driving at the time of the call or cannot use their hands for other reasons. Forcing customers to type card details into a keypad may also provide a sub-optimal experience in the case of smartphones, where the phone is taken away from the ear, the touchpad activated, and the required data typed in on multiple occasions (i.e. going through each stage for the long card number, expiry and CVC), or else use the speakerphone, which is not always appropriate. If a frustrated or confused customer decides just to read out the card details and let the contact centre deal with it, the call recording system will pick these up and immediately put the operation back in scope and become non-compliant.

Even in non-cardholder data environments (e.g. those completing SAQ A), there are likely to be some exceptions where card data is introduced into the environment unintentionally. Businesses should agree with the acquirer controls to be put into place to cover exceptions, and implement people controls, make sure any exceptional card data is handled on a terminal that is not connected to the main network, or stored electronically, and provide a demonstration and documentation if required.

If businesses store any electronic cardholder data, including any legacy data, SAQ D will apply, and businesses should review whether there is the need to maintain electronic cardholder data storage. SAQ D is the most complex questionnaire, and if cardholder data storage can be avoided, compliance efforts will be eased significantly by completing a different SAQ.

Each organisation should carefully assess the level of risk, the time and effort taken to complete the relevant SAQ(s), the cost of technology and the effect on customer experience. It should be noted that SAQ D for merchants may involve 12 requirements and 329 controls, rather than the 5 requirements and 24 controls involved in SAQ A, which is used in cases where there is no cardholder data environment within the business.

Merchants looking for a service provider should investigate the limit of the scope that any self-assessment takes, for example a cloud-based solution provider only applying it to the segments of their platform that handle sensitive data. Merchants may prefer a holistic perspective of security, and should also ask how the service provider tracks its assets (for example software versions, servers, operating and transport systems), in order to identify risk and react more quickly.

Proving compliance is also about understanding which parts of the business fall into the scope of the PCI compliance audit. It is important that whoever runs the PCI compliance programme, whether internal or external, is experienced in interpreting it fully. QSAs should look at intent and risk: what was the PCI requirement trying to achieve, and what risk was it trying to minimise?

PCI DSS REQUIREMENTS

There are 12 requirements to fulfil in order to achieve PCI DSS compliance (full details are available here[2]), with many specific sub-requirements within them, although for many businesses a large proportion of them may simply not apply.

- Build and Maintain a Secure Network and Systems
  - Requirement 1: Install and maintain a firewall configuration to protect cardholder data
  - Requirement 2: Do not use vendor-supplied defaults for system passwords and other security parameters
- Protect Cardholder Data
  - Requirement 3: Protect stored cardholder data
  - Requirement 4: Encrypt transmission of cardholder data across open, public networks
- Maintain a Vulnerability Management Program
  - Requirement 5: Protect all systems against malware and regularly update anti-virus software or programs
  - Requirement 6: Develop and maintain secure systems and applications
- Implement Strong Access Control Measures
  - Requirement 7: Restrict access to cardholder data by business need to know
  - Requirement 8: Identify and authenticate access to system components
  - Requirement 9: Restrict physical access to cardholder data
- Regularly Monitor and Test Networks
  - Requirement 10: Track and monitor all access to network resources and cardholder data
  - Requirement 11: Regularly test security systems and processes
- Maintain an Information Security Policy
  - Requirement 12: Maintain a policy that addresses information security for all personnel.

Whether contact centres decide to go down the self-assessment route or work with a QSA, all of the requirements of PCI DSS have some impact upon the way in which they work. Requirements 3, 4, 7, 9 and 12 may have the greatest relevance to the contact centre and its agents.

It should also be noted that requirements 5 and 6 can often be the most expensive, as the amount of work required gets exponentially bigger with the more staff a business has.

[2] https://www.pcisecuritystandards.org/document_library?category=pcidss&document=pci_dss

Requirement 3: Protect stored cardholder data

This requirement is about reducing the impact of any data breach or fraud, by minimising the holding of any unnecessary data as well as reducing the value of any stored payment card information. Data must only be stored if necessary, and if stored must be strongly encrypted, and only kept for the period where it is actually needed, with a formal disposal procedure. Businesses should revisit the necessity of data storage on an ongoing basis, and it should be remembered that the storage of sensitive authentication data such as card verification codes is prohibited even if encrypted, and must be permanently deleted immediately after authorisation. The requirements of other regulations (which may mandate keeping recordings for a long period of time) may need to be balanced against PCI DSS guidelines, with possible compromises occurring such as archiving encrypted call recordings offsite in a secure facility, with access to them only in the case of fraud investigation or when proving industry-specific regulatory compliance.

Sensitive authentication data (SAD) such as the card verification code (CVC) should normally never be stored, even in an encrypted format. PCI DSS requirements also indicate that the full card number (PAN) should only be available on a need-to-know basis, and should otherwise be hidden, with 1234-56XX-XXXX-7890 considered the minimum masking format. For businesses which choose for agents to type in card details, post-call masking and role-based access to the full PAN should be considered, along with strong cryptography when stored.

PCI DSS 4.0 emphasises the limited storage of cardholder data even prior to transaction authorisation, stating that it must be encrypted if held electronically, and applies to any stage in the process where agents or systems may hold this data, regardless of where in the interaction it is. Furthermore, an annual risk analysis of all system components – call recording, reporting, CRM and customer databases for example – should be carried out. All software, including any which is customised, should be patched immediately once any vulnerabilities are noted.

For contact centres, the most obvious place where data is stored as in the recorded environment, and the use of RAM scrapers should be considered, being a form of malware that takes data from volatile memory as it as being processed and before it is encrypted.

Organisations have to determine all of the locations which credit card data could potentially be stored, even if it is not part of the formal card handling process. For example, there is nothing to stop the customer sending their credit card details, including the card verification code, by email or web chat. However, if it were to happen, then a formal and documented policy would be required to evidence that the card data had been either removed or securely deleted: if the email or chat interaction is found to be stored, then a risk exists, and the operation is not PCI DSS compliant. There is an increasing use of data loss prevention solutions as a way to track data that has somehow moved out of the original environment, and PCI DSS states clearly that businesses need to have a good inventory not just of the equipment and infrastructure, but also of their logical environment as well.

Requirement 4: Encrypt transmission of cardholder data across open, public networks

In the event of a security breach, it is important to make sure that credit card data (such as the PAN, or 'long card number') is not readable, through the use of strong cryptography not only at its stored location but also as it is being passed across the network. The network is only as strong as its weakest link, and badly configured wireless networks, with out-of-date security and weak passwords are a particular concern. Do not allow payment card data to be transferred through non-encrypted means, including email, web chat, SMS or other means, and have the means to identify and delete it immediately if present.

Use strong, up-to-date encryption for the storage and transit of voice traffic, call recordings, screen recordings and personal identification data, making sure that the most current guidelines on encryption and transmission protocols are adhered to. Security certificates used to safeguard card data sent over public networks must be valid and unexpired, including when transmitting this to the payment service provider.

Companies should consider segmenting networks in order to limit the systems and environments in PCI scope by separating those networks which store, process of transmit card data from those that do not.

Requirement 7: Restrict access to cardholder data by business need to know

Identify roles which require access to specific card data, limit access privileges and restrict access to information such as the full PAN only where needed in specific instances. For example, restrict access to call recordings based on logging and corporate role, only allowing screen recording playbacks that display payment card information to managers and compliance officers, having it masked for all other users.

Regularly review stored data, and keep only that which is necessary for business or regulatory purposes. For example, hotels need to keep customers' credit card details from the reservation point until checkout: there is no hard and fast rule.

PCI DSS 4.0 emphasises the need to use strong authentication, such as multifactor authentication and longer and more complex passwords containing at least 12 characters and a mixture of numbers and letters. Multifactor authentication should be applied to all accounts that have access to cardholder data, not just administrators.

Requirement 9: Restrict physical access to cardholder data

Restrict physical access to environments where card data is present only to legitimate employees through access control. Discourage risk by encouraging a clean desk policy, and restricting the use of smartphones and cameras. Use secure data centres and limit physical access to servers storing payment card information. Consider how the physical and logical environment of remote workers will need to be managed.

Requirement 12: Maintain a policy that addresses information security for all personnel

This requirement has a significant impact on contact centre industry, as providers move to the cloud, as it is mainly about managing the security of payment card data, having an incident response plan that deals with card data at risk, and also deals with TPSP's (through requirement 12.8: Maintain and implement policies and procedures to manage service providers with whom cardholder data is shared, or that could affect the security of cardholder data).

Requirement 12.8 requires the merchant to have policies & procedures in place to manage their service providers, in addition to

- Maintaining a list of service providers
- Having a written agreement where the service provider acknowledges responsibility for card data security
- Having a documented engagement process in place "including proper due diligence"
- Having a programme to monitor compliance status
- Maintaining information on which Requirements each provider is responsible for and which the merchant is responsible for (Responsibilities Matrix)

NB: In the context of contact centres, Requirement 12.8 will not apply to 'carriers' delivering voice traffic 'point to point'.

Requirement 12.6 also states that all employees should be made aware, in writing and through daily exposure to information security guidelines, of what their responsibilities are in terms of handling data. The regular and ongoing minimisation of potential security risks is perhaps even more important for homeworking agents, who are less likely to be in a rigidly maintained environment, and whose vigilance and adherence to security guidelines may therefore be less rigorous.

Compensating controls

Businesses that are unable to fully comply with PCI DSS objectives, for technical or business process reasons perhaps, may consider implementing 'compensating controls', which act as workarounds to achieve roughly the same aim as the PCI control in situations whereby the end result could not otherwise be achieved. These are not meant as an alternative to the control objectives, to be used in cases where the business simply does not want to meet the requirement and associated controls in full, but are supposed to act as an alternative allowing the business to achieve the outcome of the control. Guidelines for valid compensating controls indicate that it must meet the intent of the original requirement, and provide a similar level of defence, go at least as far as the original requirement and not negatively impact upon other PCI DSS requirements.

VALIDATING COMPLIANCE

Merchant compliance validation involves the evaluation and confirmation that the security controls and procedures have been properly implemented as per the policies recommended by PCI DSS.

Each merchant has a level assigned to it, based on the number of card payments taken annually across all payment channels and for a single payment card scheme (typically Visa, which has c. 70% market share).

Level 1 merchants have over 6m transactions per year (and/or has had a data breach that resulted in account data compromise, and/or is identified as Level 1 by Security Standards Council); Level 2: 1-6m; Level 3: 20k– 1m online transactions, Level 4: under 1m transactions, and less than 20k online transactions.

- Level 1 merchants have to be externally audited annually and have an annual Record of Compliance. Assessments must be performed by a PCI SSC-approved Qualified Security Assessor (QSA) or a PCI SSC-certified Internal Security Assessor (ISA). They also require a quarterly network scan by approved scanning vendors, as well as an attestation of compliance form
- Level 2 – must submit a report of compliance, performed by internal evaluation if preferred, guided by the relevant self-assessment questionnaire (SAQ). They also require a quarterly network scan by approved scanning vendors, as well as an attestation of compliance form
- Levels 3 – no report of compliance needed, self certifies with SAQs. They also require a quarterly network scan by approved scanning vendors, as well as an attestation of compliance form
- Level 4 – meet the PCI requirements of their bank, which may include carrying out annual SAQ and quarterly network scans.

TPSPs (third-party service providers) have to externally certify by QSA and produce a RoC if they process more that 300K Visa transactions per annum (Level 1 Service Provider).

In version 3 of the standard, self-assessment questionnaires (SAQs) additional to those already existing were introduced to assist merchants and service providers to report the results of their PCI DSS self-assessment.

An **Internal Security Assessor** (ISA) is an individual who has earned a certificate from the PCI Security Standards Company for their sponsoring organisation, giving them the competence to perform PCI self-assessments for their organisation. ISA certification empowers inward appraisal of their organisation and allows them to propose security solutions and controls.

Dependent on the SAQ that the merchant completes based on PCI SSC SAQ Guidelines, an **Approved Scanning Vendor** (ASV) may be required. ASVs perform penetration tests on the company's network in order to verify that it cannot easily be hacked, through using a set of security services and tools to conduct external vulnerability scanning services to validate adherence with the external scanning requirements of PCI DSS Requirement 11.2.2. The scanning vendor's ASV scan solution is tested and approved by PCI SSC before an ASV is added to PCI SSC's List of Approved Scanning Vendors.

The PCI DSS self-assessment questionnaires (SAQs) are validation tools intended to assist merchants and service providers report the results of their PCI DSS self-assessment. The Self-Assessment Questionnaire is a set of questionnaire documents that merchants must complete annually and submit to their transaction bank. Each SAQ question must be replied with “yes” or “no”. In the event that a question has the appropriate response of "no", the organisation must highlight its future implementation plans.

A formal **Attestation of Compliance** (AOC) which is usually signed by the Financial Director or Information Security Officer states that all PCI requirements have been met and that any compensation controls have been put in place in case of system or process failure or exception.

Visa provides a partial list of compliant TPSPs on its website: while it is a requirement by Visa that TPSP’s complete the listing documentation, a TPSP can be compliant without being on the published Visa list. In 2018, Visa listing became free of charge – prior, it was around £5,000 to register, so a more complete listing should be expected in future. It is worth noting that many corporate procurement teams make a Visa listing a requirement for their TPSPs.

QSA-audited PCI certification offers independently confirmed security, which removes the issue of how an organisation might interpret a PCI requirement in an internal self-assessment. Businesses should see QSAs as expert consultants, rather than as auditors who are just there to tick boxes, agree compliance and then disappear for a year, but should question them as to which SAQs are most appropriate for their business. It should be remembered that any business with a no card data environment (no CDE) approach will not require an external audit.

The vast majority of contact centres do not require a full audit, and self-assessment questionnaires (SAQs) are the norm for many organisations, and many Level 3 and 4 merchants complete an online questionnaire provided by their acquirer, as all main acquirers offer this service in the UK. The PCI DSS 3.0 standard introduced some new types of SAQ, with changes to others, recognising that one size did not fit all. It was acknowledged that it was inappropriate for smaller and less at-risk companies to have to complete the same list of requirements as a large multinational taking many millions of card payments each year. A list and explanation of each SAQ is available from the PCI Security Standards Council here. To make compliance easier, quicker and cheaper, businesses should consider a descoping process by limiting the number of places where card data is present in the logical or physical environment. This allows businesses to choose a less onerous SAQ to report their compliance.

For service providers, things are different: there are two levels, rather than four, and compliance requirements are different. A service provider is a business entity that isn’t a payment brand, but is directly involved in the processing, storage, or transmission of cardholder data on behalf of another business. This includes companies that provide services that control or could impact the security of cardholder data. Examples include managed service providers that provide managed firewalls, hosting providers, payment service providers, etc.

A Level 1 Service Provider stores, processes, or transmits more than 300,000 Visa credit card transactions annually. The PCI Requirements need to be validated through:

- 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.

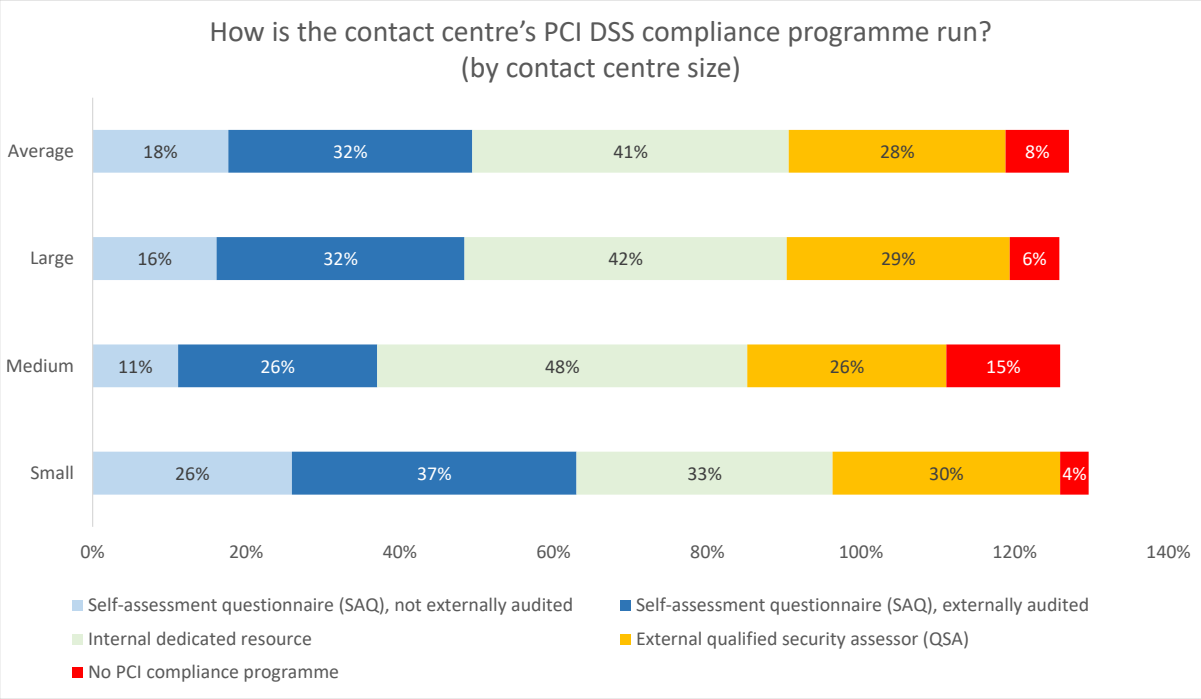
Receiving a ROC and validating as a Level 1 Service Provider allows the service provider to be on Visa's Global Registry of Approved Service Providers.

Level 2 Service Providers store, process, or transmit less than 300,000 Visa transactions annually. Their PCI Requirements are validated through:

- Annual Self-Assessment Questionnaire (SAQ) D
- Quarterly network scan by an ASV
- Penetration Test
- Quarterly local network vulnerability scans
- AOC Form.

Small operations are more likely to use self-assessment questionnaires, with roughly the same proportions across size bands using an external Qualified Security Assessor (QSA). Larger operations are more likely to use dedicated internal resource.

Figure 3: How is the contact centre's PCI DSS compliance programme run? (by contact centre size)



NB: totals in the chart above add up to more than 100%, as multiple selections are allowed. Only those respondents that reported taking card payments **and** who were able to answer this question were included (37% of respondents did not know how their PCI compliance was run).

THE VIEW FROM THE CONTACT CENTRE

Potential danger points within the contact centre fall into three main areas: storage, agents and infrastructure. The storage element will include customer databases and the recording environment – both voice and screen – and the potential opportunity for dishonest employees to access records or write down card details should also be considered.

In terms of infrastructure, this is not simply a matter of considering the CRM system or call recording archives, but also includes any element that touches the cardholder data environment. This could include, but is not limited to the telephony infrastructure, desktop computers, internal networks, IVR, databases, call recording archives, removable media and CRM / agent desktop software.

The PCI SSC information supplement "Protecting Telephone-Based Payment Card Data" had a change of emphasis away from "recorded" account data, towards "spoken" account data. The paper emphasised that "accepting spoken account data over the telephone puts personnel, the technology used, and the infrastructure to which that technology is connected into scope of PCI DSS", which also includes VoIP: "where VoIP is used for transmissions of payment card account data between a cardholder and an entity, the entity's systems and networks used for those transmissions are in scope.[3]"

The PCI SSC information supplement provides a useful classification of technology types. Technology is classified firstly by customer experience where the agent attends (in constant voice contact with the customer for the entire duration of the transaction) or unattended when they are not. The guidance then considers technology in terms of delivery media, either telephony or digital. Examples include:

- Telephony/attended: includes pause and resume, DTMF suppression
- Digital/attended: includes agent-initiated payment links sent via email, chat, SMS, social etc., where the agent remains on the call and can assist the caller
- Telephony/non-attended: IVR-based solutions, fully automated or initiated by agent
- Digital/non-attended: automated payment links sent without agent's action, or where the agent closes the call after the link has been sent but before payment is made.

The information supplement also differentiates between simple telephone environments (limited number of lines; dial-up or virtual payment terminal), and complex environments (agents linked to systems and servers, i.e. a contact centre). The supplement also explains the processes whereby an organisation can understand which part of their telephony environment is in scope for PCI DSS, and which the responsibility of third-party providers. Bear in mind that responsibility for the security of customer card data ultimately lies with the merchant organisation, so any third-party used must themselves be confirmed to be PCI compliant.

[3] See FAQ 1153 How does PCI DSS apply to VoIP? for more detail.

For those organisations which handle customer card data themselves, the various elements of card data are permitted to be processed and stored in different ways.

Figure 4: Data elements and storage in PCI DSS

	Data Element	Storage Permitted	Must Render Data Unreadable
Cardholder Data	Primary Account Number (PAN)	Yes	Yes (e.g. strong one-way hash functions, truncation, indexed tokens with securely stored pads, or strong cryptography
	Cardholder Name	Yes	No
	Service Code	Yes	No
	Expiry Date	Yes	No
Sensitive Authentication Data	Full magnetic stripe data	No	Cannot store
	CAV2/CVC2/CVV2/CID (Card Security Codes)	No	Cannot store
	PIN / PIN Block	No	Cannot store

Compliance with PCI DSS should also be seen in the wider context of a far-reaching information security framework, which may also take into account industry-specific regulations. There is likely to be a balance to be found between compliance with the various regulations in the context of the business's unique processes and internal guidelines.

It's important to remember that – as especially noted in PCI DSS 4.0 – PCI compliance is not a once-a-year box-ticking exercise, but should be entwined in the security DNA of an organisation: QSAs are now told to select samples from throughout the year to prove compliance, rather than just using a snapshot at the time of assessment.

It's just as important to note that technology or payment solutions in themselves are not – and cannot be – "PCI compliant": compliance is judged and proven at a company level and is only complete when an organisation has not also considered their PCI compliance status but also the compliance status of Third Party Service Providers supporting their card payments process.

Policies and activities that are helpful include:

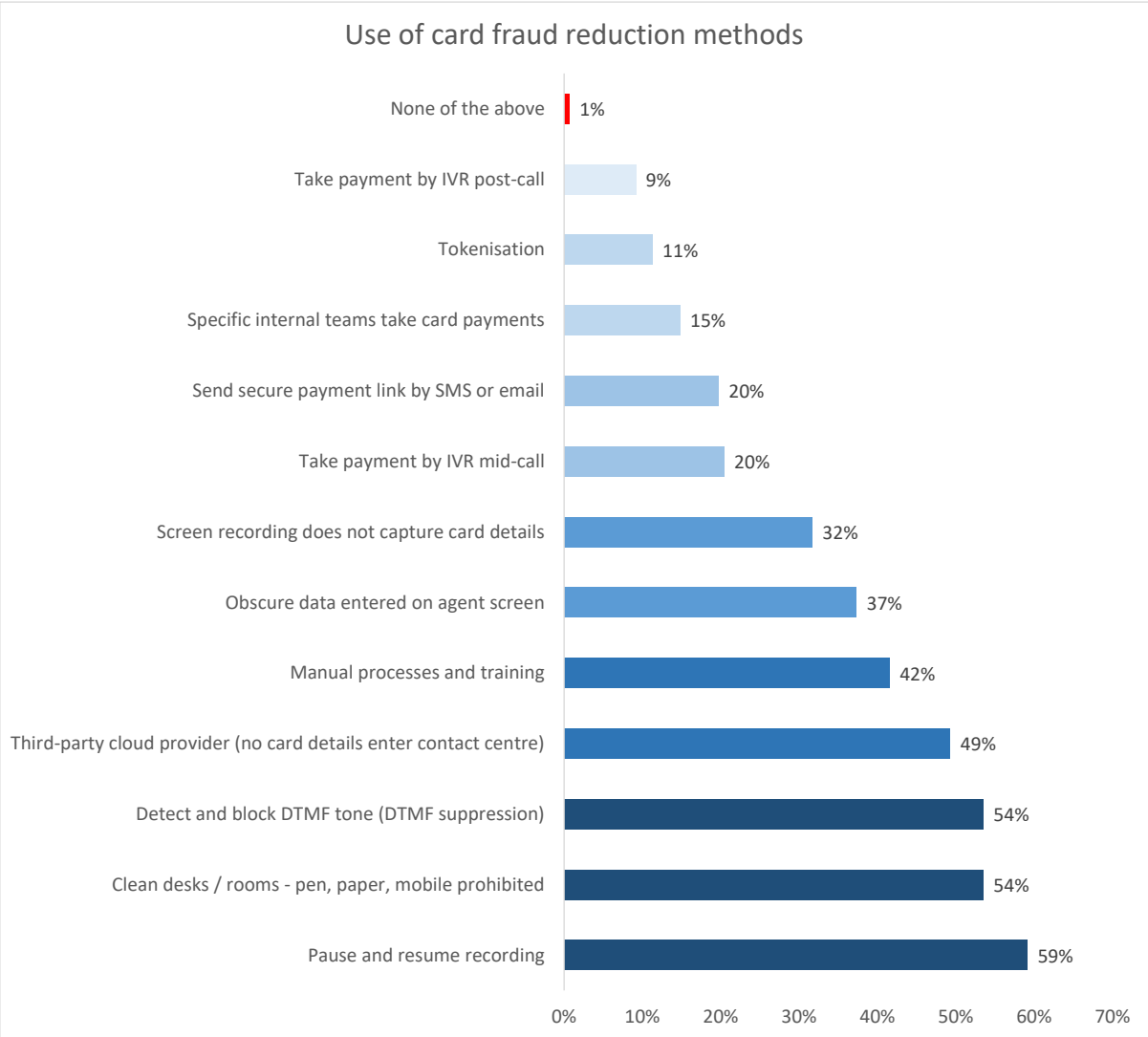
- make sure that contact centre employees do not share passwords or user IDs with each other, in order to maintain a segmented and auditable security and access environment
- limit the number of employees given access to full card information. For example, restrict access to call recordings based on logging and corporate role, only allowing screen recording playbacks that display payment card information to managers and compliance officers, having it masked for all other users
- manage the physical and logical access to stored recordings and regularly report upon those accessing this information
- do not allow payment card data to be transferred through non-encrypted means, including email, web chat, SMS or other means, and have the means to identify and delete it immediately if present
- initial focus should be on improving business processes, rather than implementing technology. For example, analysing and restricting access to cardholder information to only those employees who actually need it will significantly reduce the risk of fraud even before implementing any technology
- quarterly vulnerability scans should be carried out via an external approved scanning vendor approved by the Payment Card Industry Security Standards Council (PCI SSC), which holds a list of these. ASVs perform penetration tests on the company's network in order to verify that it cannot easily be hacked
- use secure data centres and limit physical access to servers storing payment card data
- do not record sensitive authentication data such as the card validation code in any circumstances
- use strong encryption for the storage and transit of voice traffic, call recordings, screen recordings and personal identification data, making sure that the most current guidelines on encryption and transmission protocols are adhered to
- up-to-date, fully patched and automated malware, anti-virus and personal firewall software (of particular importance to homeworkers) - requirements 5 and 6
- regularly review stored data, and keep only that which is necessary for business or regulatory purposes. For example, hotels may need to keep customers' credit card details from the reservation point until checkout: there is no hard and fast rule.

THE USE OF CARD FRAUD REDUCTION METHODS

The PCI DSS guidelines state: "As a starting point, consider whether the organisation should aim at excluding telephone-based card payment data entirely…for organisations committed to taking payments over the telephone, consideration should be given to techniques that minimise exposure of PAN and SAD to the telephone environment and balance that with user/customer experience requirements, with the object of significantly reducing the CDE (card data environment) or eliminating the CDE altogether".

Respondents were presented with a long list of solutions, approaches and business processes that aimed to reduce the risk of card fraud within the contact centre, and were asked to indicate which they used. It should be noted that many of these methods used do not in themselves render the operation fully PCI-compliant, although methods that do not allow the card data into the contact centre at any point (even encrypted) will take the operation out of the scope of PCI. Respondents used a mean average of 3.9 card fraud reduction methods.

Figure 5: Use of card fraud reduction methods



Pause and resume recording, clean desk/room policies, DTMF suppression and cloud-based third-party solutions were the main methods used to reduce card fraud. Manual processes and training were also widely used.

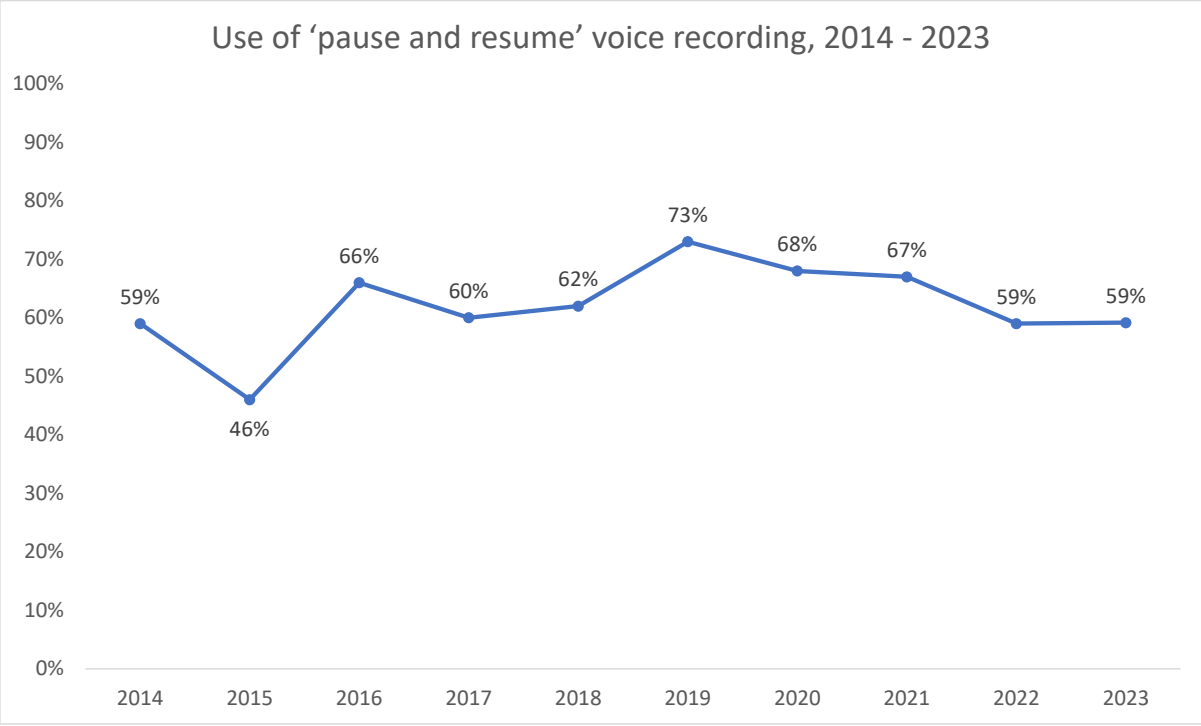
The following charts show the use of card fraud reduction methods over the past 10 years. Care should be taken when considering these data: a rise or fall from one year to the next may not necessarily be indicative of what is happening industry-wide, as many of the respondents taking part in the survey from one year to the next are different. The chart should be viewed as providing a view of card fraud reduction methods relative to each other, and as a longer-term trend.

Pause and Resume (59%)

'Pause and resume' or 'stop-start' recording aims to prevent sensitive authentication data and other confidential information from entering the call recording environment. Pause and resume may be agent-initiated, act for a fixed time period (e.g. stopping recording for a minute), or be fully automated. The PCI DSS standard is interpreted as preferring automation over manual intervention to avoid human error.

Pause and resume is consistently one of the most widely used fraud reduction solutions, despite not taking the agent out of the scope of PCI.

Figure 6: Use of 'pause and resume' voice recording, 2014 - 2023



Automated pause and resume may use an API or desktop analytics to link the recording solution to the agent desktop or CRM application, being triggered when agent navigates to a payment screen, for example. The recording may then be paused, to be resumed at the time when the agent leaves the payment screen, which in theory should remove the period of time whereby the customer is reading out the card details. This method, consistently the most popular, has several obvious benefits, not least of which include a very low set-up cost and the speed of implementation. However, breaking a recording into two parts makes it difficult to analyse the entire interaction, and goes against some industry-specific regulations, e.g. any financial services regulations which require a record of the full conversation, so some contact centres prefer to mute the recording or play a continuous audio tone to the recording system while payment details are being collected, meaning that there is still a single call recording which can be used for QA and compliance purposes. This principle is similar to that applied to **screen recording** applications, where 28% of respondents stated that their application does not record card details from the agent's screen. 30% of respondents **obscure card details** on the agent's screen, to prevent copies being made.

It should be noted that the November 2018 PCI SSC information supplement "Protecting Telephone-Based Payment Card Data" put more emphasis on "spoken" account data, rather than just focusing on recorded data, which is what pause and resume is obviously aimed at managing. The paper states that "accepting spoken account data over the telephone puts personnel, the technology used, and the infrastructure to which that technology is connected into scope of PCI DSS" including VoIP, so businesses should be aware that pause and resume could only be part of PCI compliance.

Improving Manual Processes and Agent Training (42%)

One of the most widely used fraud reduction methods is that of improving manual processes and agent training: the biggest risk in any organisation relating to data theft is its staff – not necessarily from fraudsters, but laxity in taking proper care of data – and the relatively low cost of training and education of the risks can go a long way in making staff vigilant to perils such as phishing emails and such like. Phishing emails can mean that staff innocently allow hackers to enter the system, and is a far bigger risk than a rogue staff member writing the odd card number down.

Clean Desks / Rooms (54%) and Dedicated Payment Teams (15%)

Some organisations set up dedicated payment teams, working away from other agents, often in a clean room environment with no pens, paper or mobile phones, so that customers can be passed through this team to make payment. As these agents have a single responsibility – handling card payments – sometimes they are underutilised, and at other times there can be a queue of people waiting to make payments. In terms of the customer experience, this latter scenario is suboptimal. A clean room is generally not seen as being a particularly pleasant working environment for agents, being spartan of necessity. Not being able to be in touch with the outside world, for example with children or schools, can be a significant problem for some agents. It has been estimated that it takes around £2,000 per agent per year to create and maintain a clean room environment. A clean desk environment is somewhat easier to establish and maintain, and can reduce the threat of card fraud to some extent.

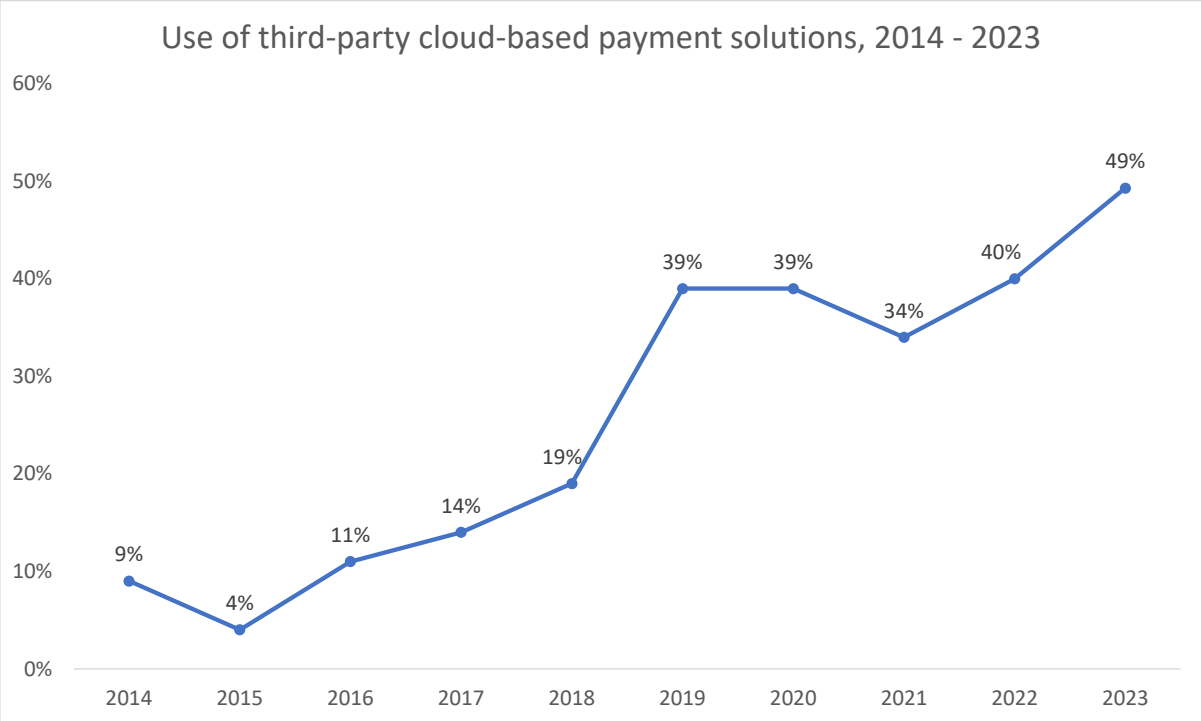
Third-Party Cloud-Based Payment Solution (49%)

The increasing requirements and costs associated with more stringent payment technology, processes and training mean that many contact centres are choosing to use a third-party to handle card payments, rather than remove the payment option entirely. 34% of this year's respondents use third-party cloud-based payment solutions. Using a cloud-based solution to intercept 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 de-scopes the entire contact centre from PCI compliance. Like any cloud-based 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 are engineered so as to minimise changes to the contact centre systems, processes or agent activities.

This option has become significantly more popular with businesses which wish to take card payments but not have to invest in technology or manage the processes that ensure PCI compliance.

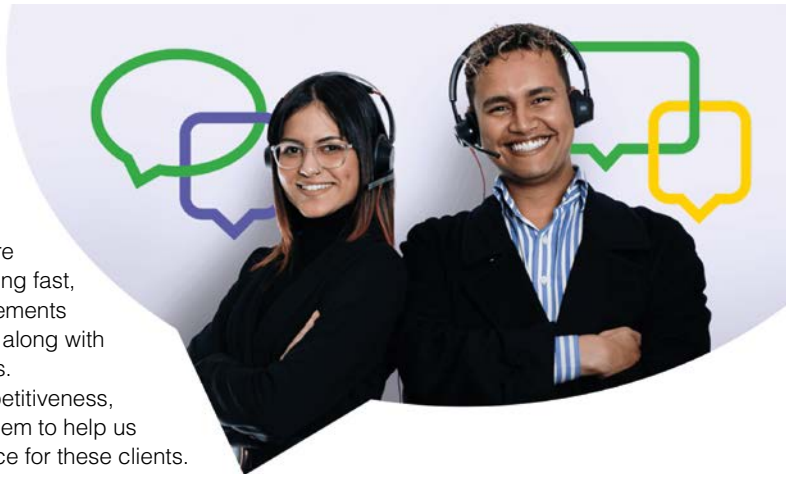
Figure 7: Use of third-party cloud-based payment solutions, 2014 - 2023



ENCODED
secure automated payments

Sigma Connected further enhances both security and customer experience using Agent Assisted Payments from Encoded

Business process outsourcing specialist Sigma Connected uses Encoded Agent Assisted Payments and Tokenisation for PCI DSS compliance, streamlined payments and to boost security and enhance CX.



As a business process outsourcer (BPO), clients rely on Sigma Connected to keep their customers' personal and sensitive details safe at all times. For many years, the company has been Payment Card Industry Data Security Standard (PCI DSS) compliant. Recently, it took the decision to further strengthen its security framework with Agent Assisted Payments from Encoded.

Ian Gerleman, Chief Technology Officer at Sigma explained, "We were looking for a technology partner with a proven track record in delivering fast, efficient, highly secure payment solutions. Encoded fitted our requirements perfectly. It was able to demonstrate a long and successful heritage along with the drive we need to support our growing number of blue-chip clients. Encoded offered us a very attractive package in terms of price competitiveness, performance and service value. We were confident we could trust them to help us descope our payment activities and enhance our PCI DSS compliance for these clients.

The best of both worlds: all-in-one package for security and CX excellence

By descoping, Ian means creating an environment in which sensitive payment information never touches Sigma Connected's contact centre, including call recordings, after the authentication data process has taken place, and even when that data is encrypted.

Currently, around 500 agents at Sigma Connected depend on Encoded's Agent Assisted Payments solution to handle thousands of inbound and outbound calls every month from customers in the energy and financial services sector.

The new automated technology from Encoded enables secure contact centre voice payments where customers enter their card details. Callers simply use their touchtone keypad to enter their card details, whilst staying connected to the Sigma Connected agent throughout the payment process. During the call, Sigma Connected's agents are provided with real-time, on-screen feedback but are protected from viewing any sensitive card details.

Tokenisation

What is more, the Encoded solution includes tokenisation, which allows card data to be stored for future payments as a token. This means that returning customers do not have to enter their card details multiple times, streamlining the payments process while improving the customer experience (CX) and building loyalty at the same time.

Great teamwork wins the day – now and tomorrow

During the course of the Encoded project, effective teamwork has been critical to success, a real differentiator for Sigma Connected. Ian Gerleman concluded, "The initial successful outcome of the implementation has made Encoded our default partner for secure contact centre voice payments and we look forward to working with them on future projects as our business grows."

Fast Facts

- Encoded chosen for all-round price competitiveness, performance and service value
- Encoded Agent Assisted Payments solution streamlines payment processes, boosts security and enhances CX
- Hundreds of agents rely on the solution to handle thousands of calls a month
- Agents are provided with real-time, on-screen feedback but are protected from viewing any sensitive card details
- Tokenisation means returning customers do not have to enter card details multiple times, improving CX
- Reduces the risk of financial and operational penalties for non-PCI DSS compliance.

For more information about Sigma Connected

Visit Sigma Connected.

About Encoded

Encoded is an independent payment services provider with a flexible payment orchestration platform and gateway. Encoded's solutions are trusted by many of the world's leading brands including Mercedes-Benz, BMW, Mini, Toyota and retailers such as Samsung, Lush, The Wine Society plus a host of utility companies including Jersey Telecom, and Severn Trent Water.

Omni-channel solutions include:

- Agent Assisted Payments
- E-Commerce Payments
- Gateway Services
- IVR Payments
- PayByLink - Mobile Payments
- Fraud Prevention

For more information visit Encoded.

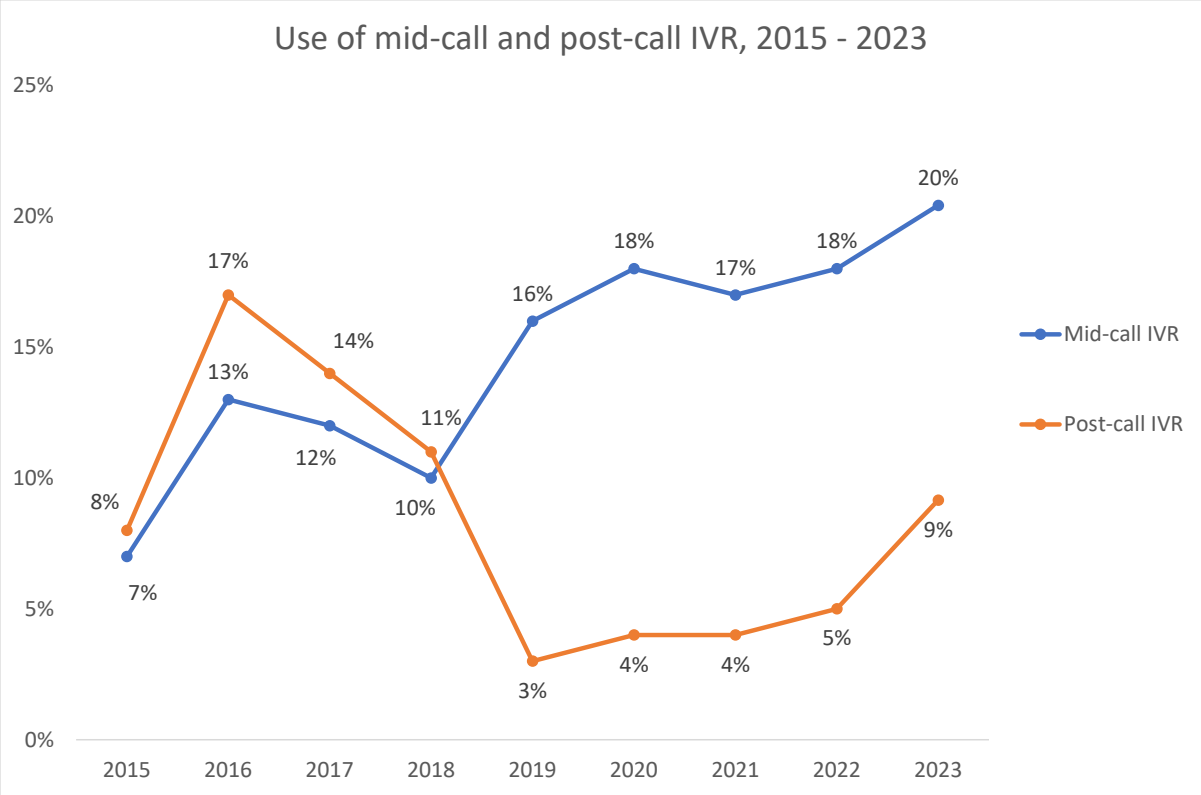
IVR Payments – post-call (9%) and mid-call (20%)

A minority of respondents, especially those with large contact centres, use an automated IVR process to take card details from the customer, cutting the agent risk out of the loop entirely.

Mid-call IVR (or agent-assisted IVR) is seen as a more customer-friendly approach than post-call IVR and has grown in usage over the past few years: 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.

However, the card data is still within the organisation's network, so although this approach takes the agent out of scope, it does not in itself ensure PCI compliance.

Figure 8: Use of mid-call and post-call IVR, 2015 - 2023



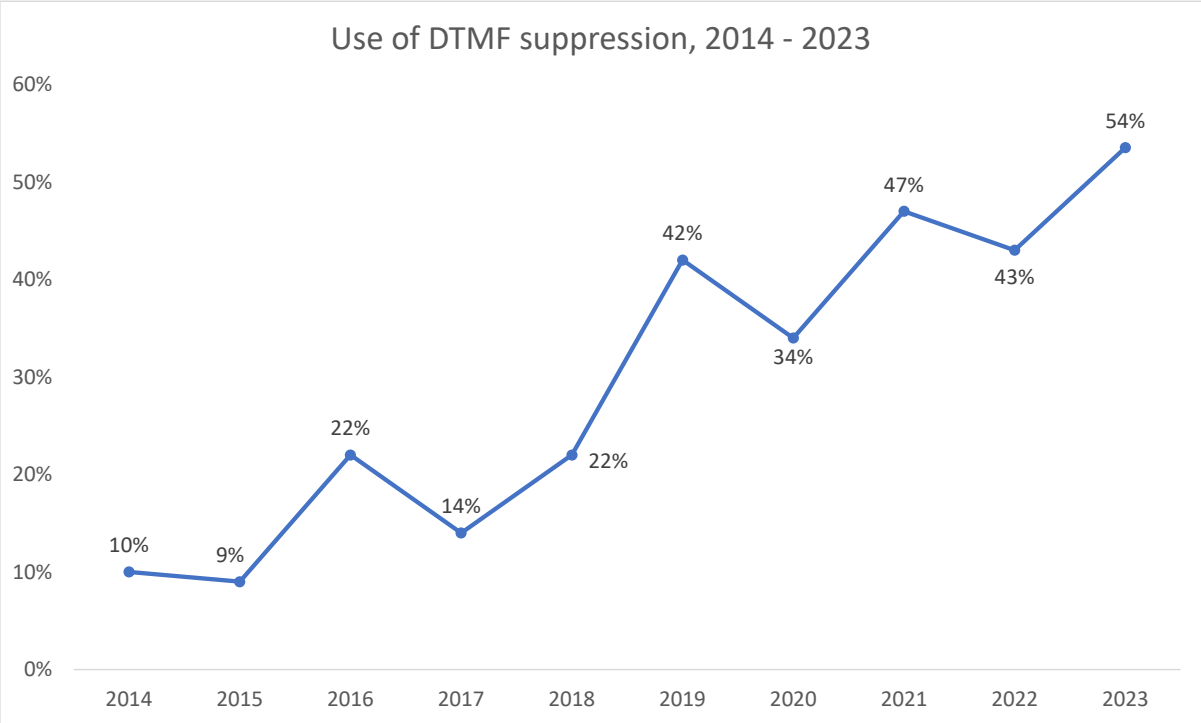
Detect and Block the Phone's DTMF Tones (54%)

54% of this year's respondents use DTMF suppression in order to assist with card fraud reduction, which is a large jump on 2020's figure of 34% and a continuation of a strong general upward trend.

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. Although this method has grown in popularity in recent years, it can be one of the more expensive card fraud reduction methods to implement.

Figure 9: Use of DTMF suppression, 2014 - 2023



Tokenisation (11%)

The practice of **tokenisation** is used in 11% of this year's respondents' operations.

Tokenisation takes place in order to protect sensitive card information such as the PAN (primary account number or 'long card number') by replacing it with non-sensitive data which merely represents the initial data. The purpose of this is to devalue the data so that even if it is hacked or stolen, it is of no use to a criminal. One of the main benefits to tokenisation is that it requires little change to the existing environment or business processes, as apart from the addition of a decoding mechanism, the flow of data, its capture and processing works in the same way as if it were true card information coming into the contact centre environment.

A customer entering a 16-digit card number might have six digits within the middle of the card taken out and replaced by entirely different digits, before this information is passed as DTMF tones into the contact centre environment. This allows the contact centre to be outside PCI scope, as there is actually no **real cardholder data** entering the environment, as well as making it a less attractive target for data hacking and stealing. Tokenisation does not require special integration with existing payment processes, storage systems, telephony or IVR systems, nor does the agent desktop have to change as the same data format is coming into the desktop environment.

The first stage of tokenisation is to collect the actual cardholder data via DTMF tones. For each key press, the solution replaces the associated tone with a neutral or silent tone, and sends the actual number relating to the DTMF tone elsewhere within the solution in order to be tokenised. Card numbers and sensitive authentication data such as card validation codes are replaced as necessary, and the new tokenised DTMF tones are played down the line to the contact centre. The actual cardholder data is held temporarily within the hosted environment.

Within the contact centre environment, the tokenised DTMF goes to the same places that the existing payment process defines, being recorded as usual and going to the agent desktop just as if the card information was actually true, passing through a decoder (which may be hardware or software) which converts the tones to keystrokes that are entered in the payment screen. As the card data is only a tokenised representation, it cannot be said to be actual cardholder data and thus does not fall into the scope of PCI DSS compliance.

Once the agent submits the tokenised payment card details, the transaction is sent back to the hosted environment, where the tokenised data is matched and converted back into the actual cardholder information, which is passed on to the payment service provider, which returns the usual payment success/failure confirmation.

Of course, cardholder data is not the only DTMF-provided information coming into the contact centre environment, as other data such as IVR routing options and the entry of account numbers often requires capture of DTMF tones as well. Various configuration options exist within solutions, based upon the specifics of the business in order to circumvent confusion. Customers should check that any hosted tokenisation solution will not alter the performance of any required card number validation checks, including card length, range validation and 'Luhn' checks (to make sure a card number 'looks right' before presenting it to the payment services provider). The PCI SSC has published tokenisation product security guidelines[4].

[4] https://listings.pcisecuritystandards.org/documents/Tokenization_Product_Security_Guidelines.pdf

Send Secure Payment Link by SMS or Email (20%)

This is the fourth year of tracking this self-service card fraud reduction method, which involves sending an SMS, email or WhatsApp link to a customer which then opens a secure form in which card details can be entered. It has grown strongly from only 5% in 2020, to 20% in 2023.

Card data is kept outside the organisation, keeping it outside of scope and can also be linked with tokenisation to collect new information if existing data has expired. This method is secure and reduces agent time, allowing customers to pay at their own convenience, although will possibly be more suitable for some demographics.

Further details about all of these methods, as well as other approaches to take, are investigated in depth in ContactBabel's free report, **"The Inner Circle Guide to Fraud Reduction and PCI Compliance"**, which is available from www.contactbabel.com.

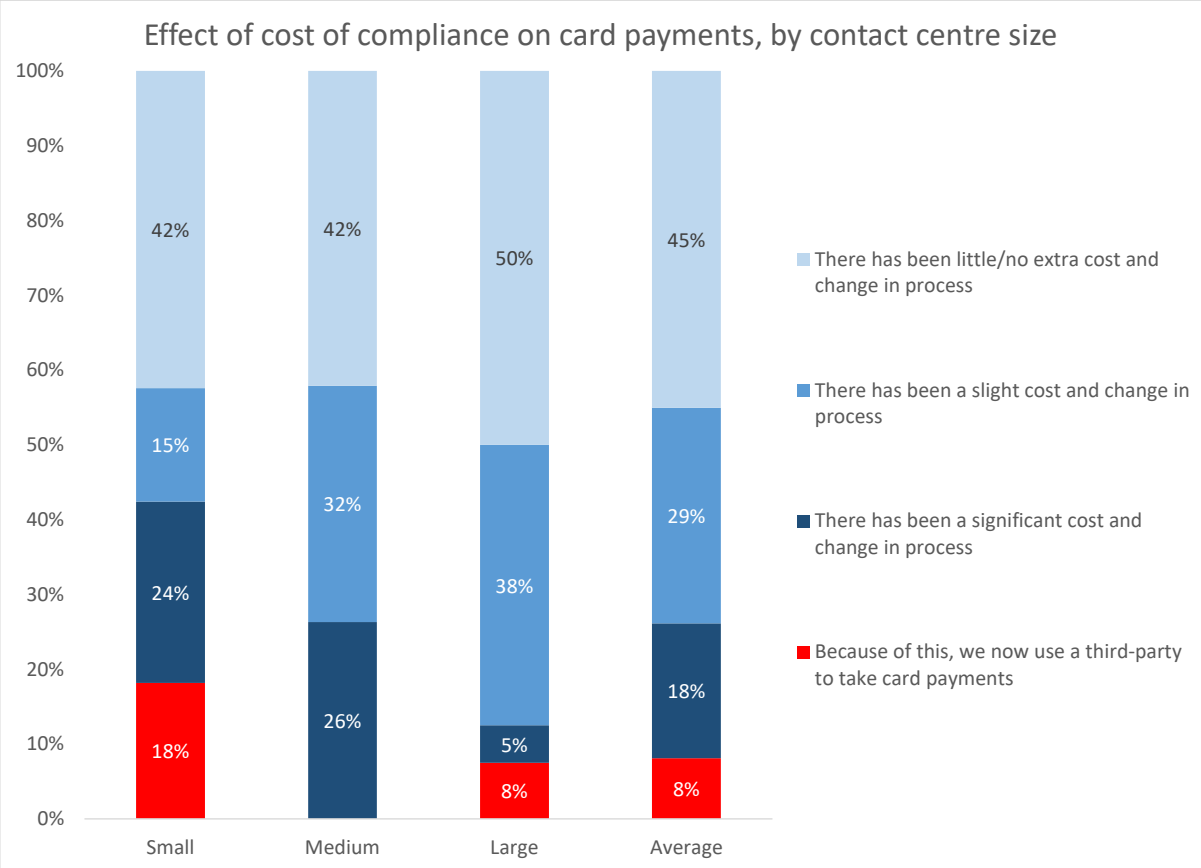
THE COST OF PCI DSS COMPLIANCE

The following chart shows that a significant proportion of contact centres have found that the cost of PCI DSS compliance is very considerable, with 18% of respondents – particularly in small and mid-sized operations – stating that they have seen a significant cost associated with compliance, as well as a change in their processes.

45% of survey respondents state that they have not had to increase their costs or change they way in which they operate in order to be compliant.

8% of respondents state that the cost and effort of compliance was so high that they decided to use a third-party to take card payments, in order to take the contact centre out of scope.

Figure 10: Effect of cost of compliance on card payments, by contact centre size

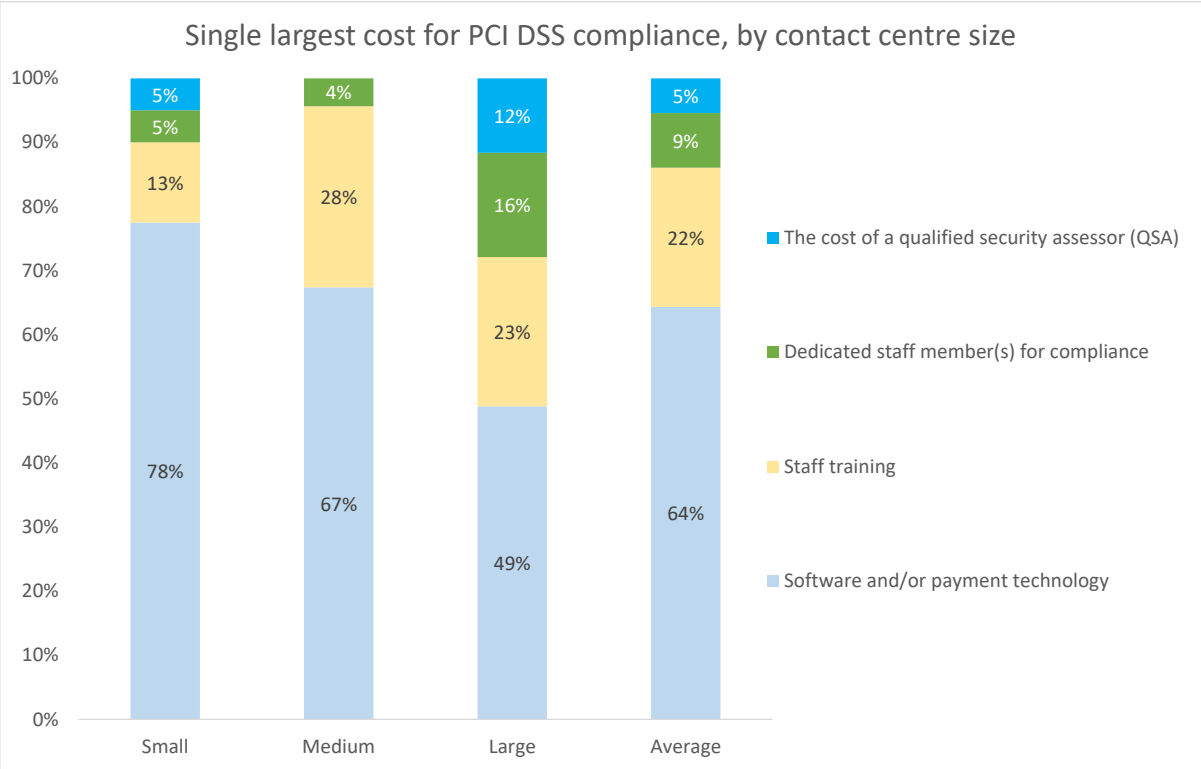


64% of survey respondents state that software and/or payment technology is the single largest cost associated with PCI DSS compliance. This is particularly the case in small and medium-sized operations.

In the largest contact centres, the cost of training staff in card fraud prevention techniques and processes is said to be the largest cost in 23% of cases (a figure which is even higher in mid-sized operations), with 12% stating that having dedicated compliance staff was the largest cost.

12% of those in large operations stated that the high cost of bringing in external qualified security assessors (QSAs) was the greatest cost borne.

Figure 11: Single largest cost for PCI DSS compliance, by contact centre size

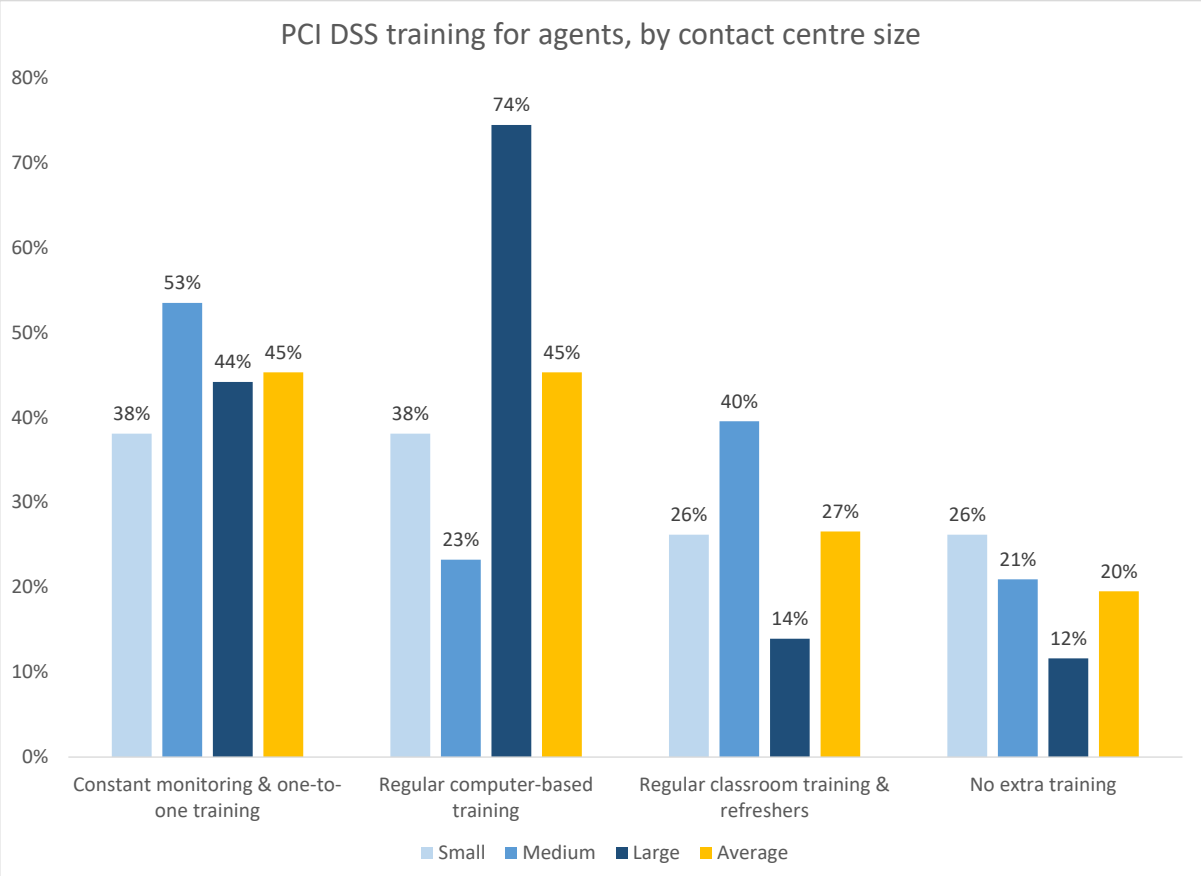


The cost of staff training is reported to be a major drain on resources for larger contact centres in particular. Regular computer-based training, used to educate agents about card fraud reduction practices, is likely to be scalable and require less personal support from managers and security specialists, which should make it popular with cost-sensitive small and medium operations as well as larger contact centres.

Agents in small operations are as likely as those in larger contact centres to be receiving monitoring and one-to-one training.

20% of survey respondents do not provide any additional PCI DSS or card fraud reduction training for agents whatsoever, and this is considerably more likely to be the case in small operations. However, it should be noted that PCI DSS v4.0 places greater emphasis on the need for annual training courses and making staff aware of social engineering and phishing attacks.

Figure 12: PCI DSS training for agents, by contact centre size

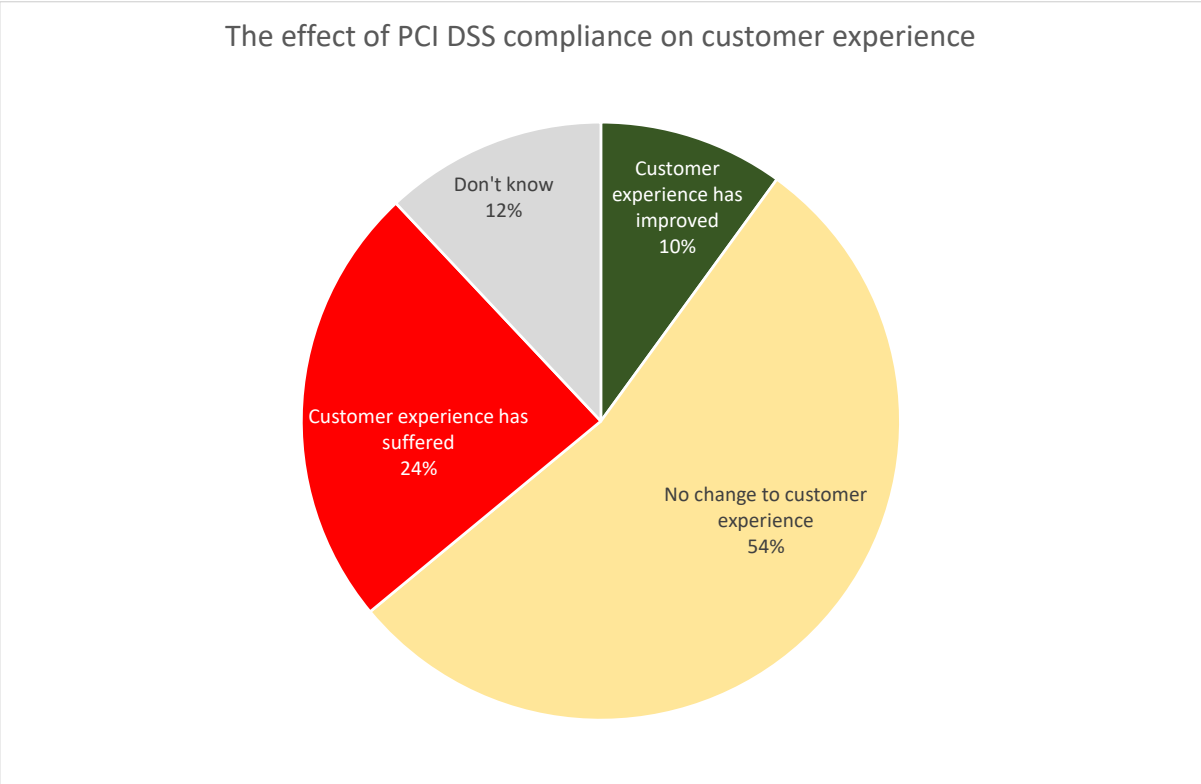


Many PCI DSS compliance and card fraud reduction methods are likely to have an impact upon the customer, in terms of increased effort or inconvenience (e.g. having to type in a card number can be awkward if using a smartphone, as navigation through screens will be required while holding the phone away from the ear; or waiting for a dedicated card-handling agent to become available).

Other methods are less intrusive: pause and resume recording or DTMF tone suppression are unlikely to be noticed from the customer's perspective.

24% of respondents stated that PCI DSS compliance had a negative effect on the customer experience, with only 10% believing that there had been an improvement.

Figure 13: The effect of PCI DSS compliance on customer experience



ABOUT CONTACTBABEL

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

We help US and UK contact centres compare themselves to their closest competitors so they can understand what they are doing well, what needs to improve and how they can do this.

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

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Free research reports available from www.contactbabel.com (UK and US versions) include:

- The Inner Circle Guide to Agent Engagement & Empowerment
- The Inner Circle Guide to AI-Enabled Agent Assistance
- The Inner Circle Guide to Chatbots & Conversational AI
- The Inner Circle Guide to Cloud-based Contact Centre Solutions
- The Inner Circle Guide to Customer Engagement & Personalisation
- The Inner Circle Guide to Customer Interaction Analytics
- The Inner Circle Guide to First-Contact Resolution
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- The Australia & New Zealand Contact Centre Decision-Makers' Guide
- The UK Contact Centre Decision-Makers' Guide
- The US Contact Center Decision-Makers' Guide
- The UK Customer Experience Decision-Makers' Guide
- The US Customer Experience Decision-Makers' Guide
- Exceeding UK Customer Expectations
- Exceeding US Customer Expectations

- UK Contact Centre Verticals: Communications; Finance; Insurance; Outsourcing; Retail & Distribution; Utilities
- US Contact Center Verticals: Communications; Finance; Healthcare; Insurance; Outsourcing; Retail & Distribution.

To download the full "2024 UK Contact Centre Decision-Makers' Guide" for free, please visit our website.