CONTACTBABEL

The 2023 US Contact Center Decision-Makers' Guide

The Interaction Analytics chapter

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CallMiner

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In 2002, we began the journey of converting unstructured customer conversations into powerful tools to improve your business.

Our initial thrust was on helping contact center employees become more efficient and effective in handling customer questions and concerns and providing a better customer experience. Over time, we realized those same conversations, and ultimately digital conversations as well, contained the keys to unlock value all throughout the enterprise and all the touchpoints that comprise the customer experience.

Buried in those interactions are insights on how to improve customer service, customer-self-service processes, billing and refund policies, product development and enhancement, and even shipping and transportation logistics.

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CallMiner is the global leader in conversation analytics to drive business performance improvement.

Powered by artificial intelligence and machine learning, CallMiner delivers the industry's most comprehensive platform to analyze omnichannel customer interactions at scale, allowing organizations to interpret sentiment and identify patterns to reveal deep understanding from every conversation.

By connecting the dots between insights and action, CallMiner enables companies to identify areas of opportunity to drive business improvement, growth, and transformational change more effectively than ever before.

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INTERACTION ANALYTICS

On first glance, customer interaction analytics can be seen as providing similar information to management information and reporting systems: taking masses of data and making sense of what they mean to the contact center's performance and perhaps even inside the wider business. However, the vital thing to understand about analytics is that it gives contact centers the answer to 'Why?', not just 'What?'. Why are average handle times so different across agents? Why are customers of this product upset? Why are people calling the contact center?

Customer interaction analytics solutions offer huge opportunities to gain business insight, improve operational efficiency and develop agent performance. In fact, the list of potential applications for this technology is so high that businesses could be forgiven for being confused about how to target and quantify the potential business gains.

Depending on the type of business, the issues being faced and even the type of technology being implemented, drivers, inhibitors and return on investment can differ greatly. While an analytics solution may be implemented to look at one particular pressing issue, such as automating the QA process, it will further develop over time into looking at business intelligence and process optimization.

Interaction analytics can be used in many different ways to address various business issues. This is an advantage – it is hugely flexible – but it can also make its message to the market more complicated. However, depending upon how interaction analytics is used, it can assist in:

- agent improvement and quality assurance
- business process optimization
- avoidance of litigation and fines
- customer satisfaction and experience improvements
- increases in revenue and profitability
- improvements in contact center operational performance, and cost reduction.

Like most contact center applications, analytics can be used to cut costs, but its promise goes far beyond this. No other contact center technology provides the business with this level of potential insight that goes far beyond the boundaries of the contact center, and can offer genuine and quantifiable ways in which sub-optimal business processes can be improved.

This is not to say that the science of customer contact analytics is yet at its zenith. Significant improvements are still being made to the accuracy and speed of the speech engines, the sophistication of analytical capabilities, the integration of various data inputs and the usability of report. The integration of sophisticated AI and machine learning capabilities within the analytics solutions offers the chance to take analytics far beyond what was imagined a few years ago.

Some of the actionable findings from analytics may seem very simple – the recommendation to change a few words in a script, for example – but the overall potential impact upon the cost, revenue, agent capability and customer experience that is possible through analytics is perhaps unprecedented.

There are various elements to customer contact analytics solutions, including:

- Speech engine: a software program that recognizes speech and converts it into data (either phonemes – the sounds that go to make up words – or as a text transcription, although there are solutions which directly recognize entire spoken phrases and categorize calls based upon the occurrence of those phrases)

- Indexing layer: a software layer that improves and indexes the output from the speech engine in order to make it searchable

- Query-and-search user interface: the desktop application where users interact with the analytics software, defining their requirements and carrying out searches on the indexed data

- Reporting applications: the presentation layer of analytics, often in graphical format

- Business applications: provided by vendors, these pre-defined modules look at specific issues such as adherence to script, debt collections etc., and provide suggestions on what to look for

- Text analytics: this solution combines the transcription of customer calls with other forms of text interactions such as email, web chat and social media. It then uses natural language processing models along with statistical models to find patterns

- Desktop data analytics: a solution that gathers metadata from agent desktop and CRM applications – for example, account ID, product order history and order value – and tags them to call recordings or digital records, enabling deeper insight.

Like any technology, customer contact analytics has its own descriptive language, and some of the more common words or phrases someone researching this industry would find include:

- **Categorization:** the activity of grouping conversations according to user-defined topics, such as complaints, billing issues, discussions of specific products, etc. Agent capability can be viewed by these categories, suggesting specific training needs as well as identifying any required changes to processes. Categorization can be done by the business based on their own experiences and requirements, through using vendors' out-of-the-box categorizations for common analytics use cases, or by implementing AI and machine learning to find categories within the business's data

- **Discovery:** requiring a transcription-based solution, analytics will seek out phrases and words that are showing up in noteworthy patterns, showing how they fit together and how they relate to each other, discovering trends automatically

- **Metadata**: non-audio data, which may be taken from CRM, ACD or agent desktop applications, which is tied to audio recordings or other interactions, improving the ability to correlate, discover patterns and pinpoint specific types of interaction

- **Search:** if the analytics user knows what they want to find, the search function can return a list of calls with these words or phrases within them. Speech-to-text / transcription applications return the sentence or whole interaction so that the user can see the context as to how this has been used, offering the opportunity to run text analytics on top of this as well

- **Closed-loop analytics:** where also known as "closed-loop marketing", this activity involves tracking the entire customer lifecycle (i.e. connecting the initial contact all the way to the sale, and into ongoing support and post-sale activity), in order to draw actionable insights about how elements of the customer lifecycle impact upon sales success and marketing effectiveness. From a perspective more closely focused upon the customer experience, "closed-loop" refers to the continued, iterative use of automated alerts, follow-up of issues (e.g. through call-back) to support root cause analysis, and the identification and resolution of suboptimal processes.

DRIVERS FOR CUSTOMER INTERACTION ANALYTICS

Customer interaction analytics offers huge opportunity to gain business insight, improve operational efficiency and develop agent performance. In fact, the list of potential applications for this technology is so high that businesses could be forgiven for being confused about how to target and quantify the potential business gains. Depending on the type of business, the issues being faced and even the type of technology being implemented, drivers, inhibitors and return on investment can differ greatly. While an analytics solution will be implemented to look at one particular pressing issue, such as compliance or automating the QA process, it will further develop over time into looking at business intelligence, process optimization, customer experience improvements and revenue increase.

There are various ways to segment the uses of analytics, and it may therefore be useful to divide them into one of two groups: those that are around solving a specific known problem, and those which are of a more strategic, long-term nature, although there is some crossover between the two groups.

Figure 1: Uses of customer contact analytics

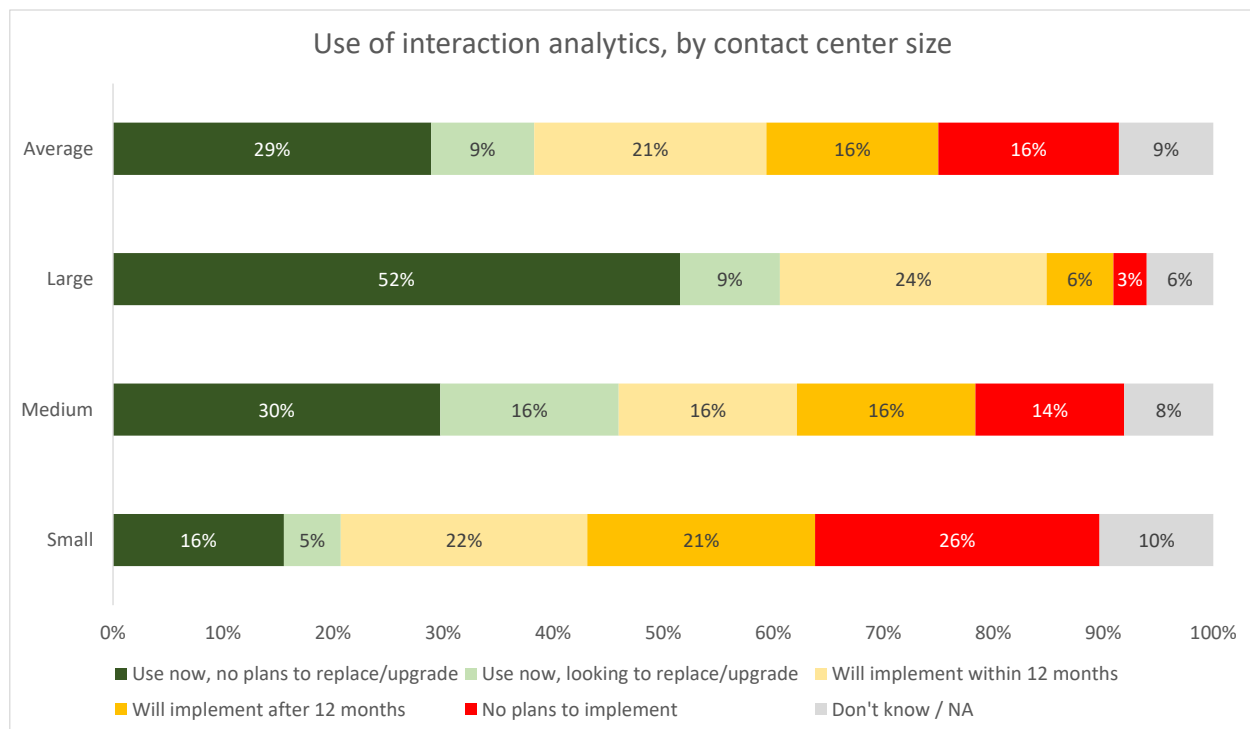| Problem-solving/issue resolution	Strategic/long-term
Compliance with regulations	Gathering competitive intelligence
Verbal contracts/repudiation	Feedback on campaign effectiveness and pricing information
Redaction of card information for PCI purposes	Understanding the customer journey
Adherence to script	Understanding why customers are calling
Identifying agent training requirements	Improving contact center performance metrics
Reducing the cost of QA	Optimizing multichannel/inter-department communication
Identifying and handling problem calls	Deepening the power and functionality of the workforce optimization suite
Estimating customer satisfaction and first call resolution rates	Identification and dissemination of best practice
Predictive routing	Identification and handling of dissatisfied customers, and those at high risk of churn
Real-time monitoring and in-call feedback	Maximizing profitability by managing customer incentives
One-off discovery/analysis via cloud	'Tell-me-why'/root cause analysis

USE OF INTERACTION ANALYTICS

Compared to recording-based functionality which has penetration rates of over 90% in most sectors, interaction analytics (especially of the omnichannel variety) is still to reach its full maturity, although the general long-term increase in penetration rates and the enthusiasm shown by contact centers to learn more about the subject is very positive.

The positive correlation between size and penetration rate is very noticeable for interaction analytics, which may require significant investments. As importantly, having huge volumes of recorded interactions and a large customer base to learn from means that business patterns can be identified more accurately, and any improvements reap correspondingly higher rewards.

Large operations are also more likely to have the budget and resource to use analytics to its potential, although there is also a significant level of long-term interest in implementing analytics in the small and medium contact center sectors.

Figure 2: Use of interaction analytics, by contact center size

Use of interaction analytics, by contact center size

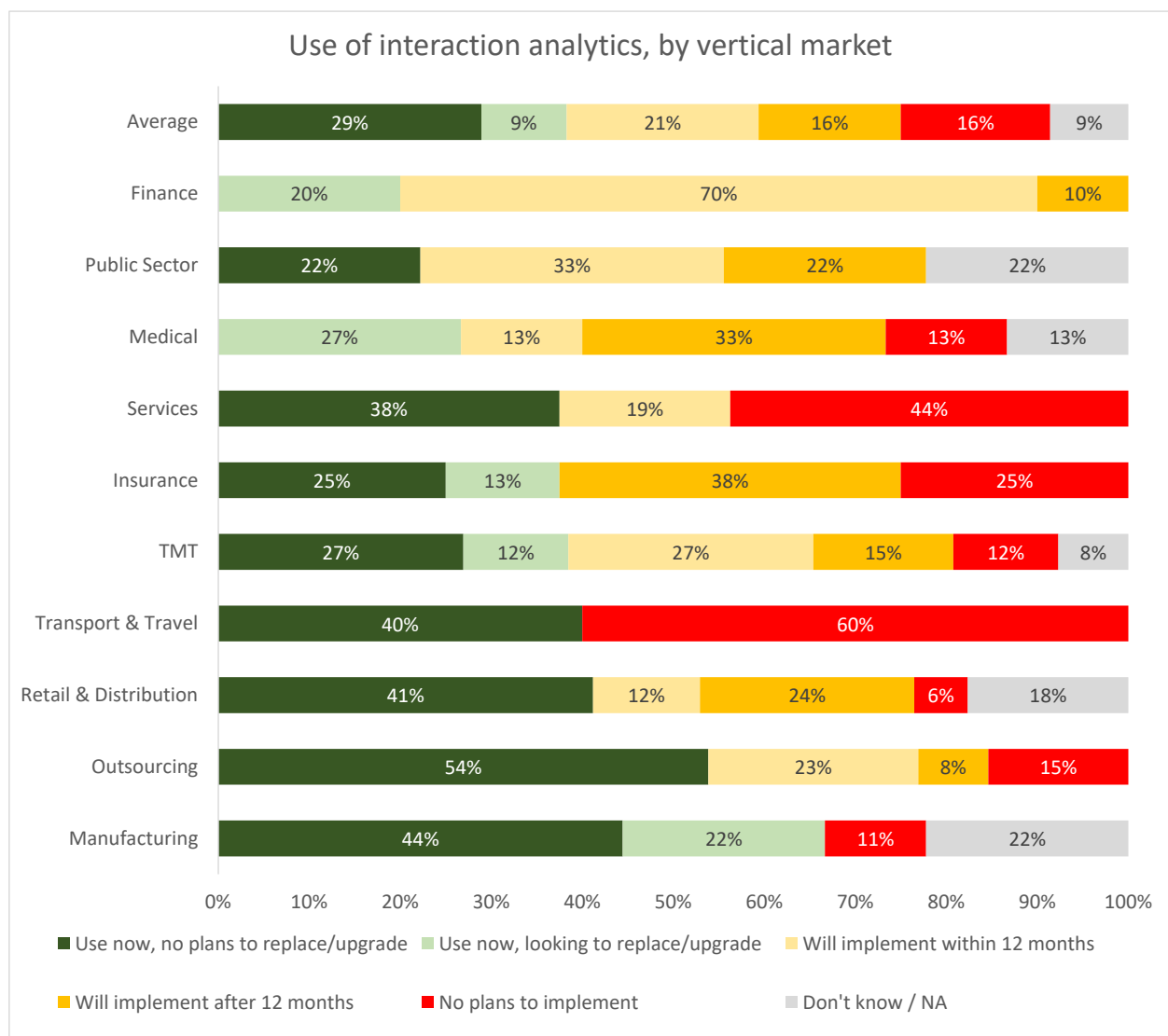|	Use now, no plans to replace/upgrade	Use now, looking to replace/upgrade	Will implement within 12 months	Will implement after 12 months	No plans to implement	Don't know / NA
Average	29%	9%	21%	16%	16%	9%
Large	52%	9%	24%	6%	3%	6%
Medium	30%	16%	16%	16%	14%	8%
Small	16%	5%	22%	21%	26%	10%

Against a virtual ubiquity of call recording, the penetration rates of interaction analytics are much lower: 38% of this year's respondents use it now, with a further 37% stating that they have plans for implementation.

Respondents from the manufacturing, retail and outsourcing sectors report the greatest use of analytics this year, with those in the finance and public sectors least likely to be doing so.

It is probable that the use of interaction analytics is driven more by contact center size in call volumes than through the requirements of specific types of business.

Figure 3: Use of interaction analytics, by vertical market

Use of interaction analytics, by vertical market

	Use now, no plans to replace/upgrade	Use now, looking to replace/upgrade	Will implement within 12 months	Will implement after 12 months	No plans to implement	Don't know / NA
Average	29%	9%	21%	16%	16%	9%
Finance		20%	70%	10%		
Public Sector	22%		33%	22%		22%
Medical		27%	13%	33%	13%	13%
Services	38%		19%		44%	
Insurance	25%	13%		38%	25%	
TMT	27%	12%	27%	15%	12%	8%
Transport & Travel	40%				60%	
Retail & Distribution	41%		12%	24%	6%	18%
Outsourcing	54%		23%	8%	15%	
Manufacturing	44%	22%			11%	22%

As we might expect, the use of post-call speech analytics – the bulk analysis of call recordings – is the most widely used type of interaction analytics functionality. 27% of analytics users have also implemented functionality which can analyze the agent desktop activity which is linked to these calls.

Real-time (or near real-time, i.e. within the call) speech analytics is used by only 12% of this year's interaction analytics users. 33% of respondents that state that they use multichannel analytics.

The rise in non-voice interaction volumes has meant that there is an increased requirement to understand and analyze the customer journey, and there is strong interest being shown in optimizing the back office and its processes.

Figure 4: Use of various interaction analytics functionality (from only those respondents who use analytics)

Interaction analytics type	% respondents using this functionality
Post-call speech analytics	67%
Back office analytics	48%
Multichannel analytics (i.e. email, web chat, social media, etc.)	33%
Customer journey analytics	33%
Desktop analytics	27%
Real-time speech analytics	12%

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How to Coach Your Multi-Generational Workforce Using AI Insights

Believe it or not, there are **five generations** that make up today's workforce. Each of these generations has different ways in which they communicate and different preferences in the ways they like to be communicated to. Understanding how each operates in your workplace can be invaluable when it comes to delivering highly personalized, effective feedback and coaching. While it might sound counterintuitive to generations who didn't grow up with technology, AI can be the unifying force for tailoring the right one-to-one coaching to the right person at the right time. For customer-facing employees, this coaching has a measurable impact on the resulting customer experience (CX) delivered by your employees.

Traditionalists - (Born 1925-1945 - 2% of the workforce) Dependable, straightforward, tactful, loyal
- Motivations: Respect, recognition, providing long-term value to company
- Communication style: Personal touch, handwritten notes vs. email
- Worldview: Obedience over individualism; age equals seniority; advancing through the hierarchy
- Key Takeaways: Provide satisfying work and opportunities to contribute; emphasize stability

Baby Boomers - (Born 1946-1964 - 25% of the workforce) Optimistic, competitive, workaholic, team-oriented
- Motivations: Company loyalty, teamwork, duty
- Communication style: Efficiency matters, prefer phone calls/face to face
- Worldview: Achievement comes after paying dues; sacrifice for success
- Key Takeaways: Provide them with specific goals and deadlines; put them in mentor roles; offer coaching-style feedback

GenX - (Born 1965-1980 - 33% of the workforce) Flexible, informal, skeptical, independent
- Motivations: Diversity, work-life balance, their personal-professional interests rather than the company's interests
- Communication style: Similar to Boomers, prefers whatever is most efficient
- Worldview: Favoring diversity; quick to move on if their employer fails to meet their needs; resistant to change if it affects their personal lives
- Key Takeaways: Give them immediate feedback; provide flexible work arrangements/work-life balance; offer opportunities for development

Millennials - (Born 1981-2000 - 35% of the workforce) Competitive, civic-minded, open-minded on diversity, achievement-oriented
- Motivations: Responsibility, the quality of their manager, unique work experiences
- Communication style: IMs, texts, and email
- Worldview: Seeking challenge, growth, and development; a fun work life and work-life balance; likely to leave an organization if they don't like change
- Key Takeaways: Get to know them personally; manage by results; be flexible on their schedule and work assignments; provide immediate feedback

Gen Z - (Born 2001-2020 - 5% of the workforce) Global, entrepreneurial, progressive, less focused
- Motivations: Diversity, personalization, individuality, creativity
- Communication style: IMs, texts, social media
- Worldview: Self-identifying as digital device addicts; valuing independence and individuality; preferring to work with millennial managers, innovative coworkers, and new technologies
- Key Takeaways: Offer opportunities to work on multiple projects at the same time; provide work-life balance; allow them to be self-directed and independent

Generational tips for 1:1 coaching

Traditionalists: Recognize the value they are providing by giving positive reinforcement.
Pro tip: Don't force interactions with technology beyond their comfort zone, instead treat technology as a way to deliver more informed coaching and feedback.

Baby Boomers: Encourage their loyalty by regularly offering or scheduling one-to-one coaching sessions.
Pro tip: This cohort may have varying degrees of comfort with AI, so provide context into why certain recommendations are made.

Gen X: Give them structured guidance, but enough flexibility to execute upon that guidance as they see fit.
Pro tip: Use AI to provide the structure to steer these independent employees in the right direction, vs. being too heavy-handed.

Milennials: Use data to set benchmarks and stretch goals.
Pro tip: Leverage data-driven feedback to inspire this group's ambition, and regularly reward progress.

Generation Z: Give them a window into the data and the technology you're using, and how it informs specific outcomes.
Pro tip: Technology comes as second nature to this generation, so they may find extra value in a look behind the scenes.
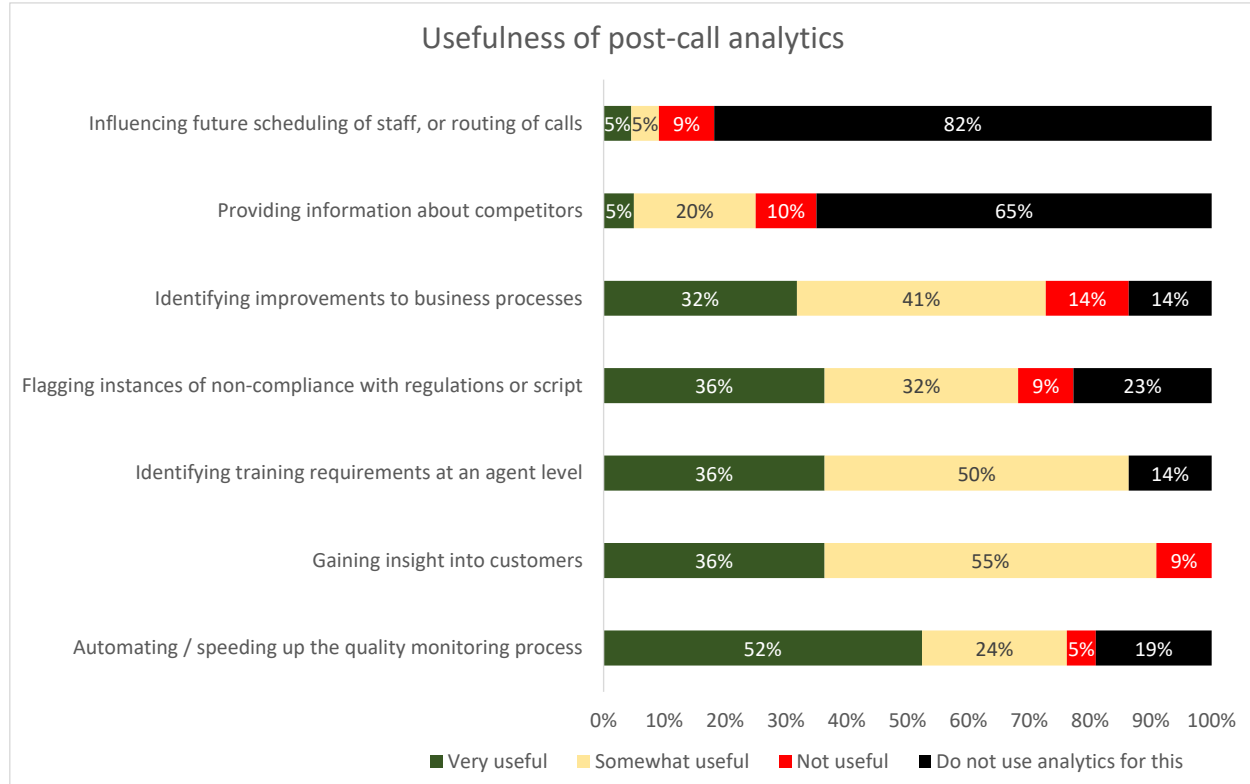
POST-CALL ANALYTICS

Initial implementations of speech analytics solutions were focused upon analyzing large numbers of recorded calls, often a long time after the actual event. Many of the original users purchased these solutions to assist with compliance and as part of a larger quality assurance system, and these benefits have not decreased over time. Being able to analyze 100% of calls automatically can provide high quality information for the QA process, giving a fair and accurate reflection of the agent's performance.

Post-call speech analytics is vital for business intelligence, performance improvement, QA and compliance. As the majority of contact centers have call recording in place, the raw material is already available. In fact, the amount of recorded voice data available to most businesses can be overwhelming, and post-call speech analytics that analyze 100% of recorded calls is proving hugely valuable.

It should be noted that some recording environments are still mono rather than stereo, meaning that there is no distinction between the caller and the agent except through context. This is a clear disadvantage for effective post-call speech analytics, as in order to learn from customer feedback and experience, clearly a business needs to know whether it is the customer talking about products, processes or competitors, rather than the agent. More recording systems are moving to stereo, and this will further improve the accuracy and potential benefit of speech analytics, and some vendors have restructured their solution to offer software-based speaker separation for analytics.

Figure 5: Usefulness of post-call analytics

Usefulness of post-call analytics

Category	Very useful	Somewhat useful	Not useful	Do not use analytics for this
Influencing future scheduling of staff, or routing of calls	5%	5%	9%	82%
Providing information about competitors	5%	20%	10%	65%
Identifying improvements to business processes	32%	41%	14%	14%
Flagging instances of non-compliance with regulations or script	36%	32%	9%	23%
Identifying training requirements at an agent level	36%	50%		14%
Gaining insight into customers	36%	55%	9%	
Automating / speeding up the quality monitoring process	52%	24%	5%	19%

■ Very useful   ■ Somewhat useful   ■ Not useful   ■ Do not use analytics for this

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Survey respondents are very enthusiastic users of analytics in order to gain insights into customers, and the use of the application for this purpose has grown greatly in recent years.

Analytics is also seen as being valuable for flagging instances of non-compliance with regulations or script, with 48% of respondents that use analytics for this purpose reporting that it is very useful.

The automated quantification of an individual agent's performance and capabilities, feeding into the training and skills upgrades required should be one of the most important outputs for interaction analytics, although somewhat less than half of respondents using analytics for this purpose state that it is very useful. A higher proportion indicate that analytics is very useful for speeding up the overall quality monitoring process as well through automation.

37% of respondents who use analytics for this purpose state that it is very useful in identifying improvements to business processes. Optimizing processes and gaining actionable insight that can be applied to the customer journey will become one of the most important uses of analytics, as users' sophistication increases and solutions' capabilities are explored more fully.

There is little enthusiasm around the use of analytics for providing information about their competitors, with more than half not using it for this purpose at all. This is a very underused area of analytical usage at the moment, and one which we would expect to see growing significantly in future years.

A growing proportion of respondents report that analytics helps influence scheduling or routing strategies, and as more tightly integrated WFO suites are used we would expect this to continue to change for the better.

REAL-TIME ANALYTICS

Some solution providers suggest that 'real-time analytics' should perhaps be more accurately referred to as 'real-time monitoring and action'. Analysis ("a detailed examination of the elements or structure of something[1]"), refers to the discovery and understanding of patterns in data, and is currently something that by definition only happens post-call when all data are fully present. Real-time monitoring on the other hand, looks for and recognizes predefined words, phrases and sometimes context, within a handful of seconds, giving the business the opportunity to act.

AI can be trained to understand intent and recognize patterns through immersion in vast quantities of historical data, so that when a call is taking place it can draw upon this knowledge and provide advice or action that has proven successful previously, moving towards the actual provision of real-time analytics.

AI assists in real-time speech analytics through applying the results of machine learning that have been carried out on large quantities of previously recorded conversations, providing:

- agents with the understanding of where their conversational behavior is falling outside of acceptable and previously successful norms (such as speaking to quickly or slowly, or in a monotonous fashion)
- an assessment of the meaning of non-verbal cues such as intonation, stress patterns, pauses, fluctuations in volume, pitch, timing and tone in order to support sentiment analysis
- understanding the actions and information that have been seen to provide successful outcomes in previous similar interactions, and relaying this to the agent within the call.

For some businesses, real-time analysis is an important and growing part of the armory that they have to improve their efficiency and effectiveness. There is potentially a great deal of benefit to be gained from understanding automatically what is happening on the call, and in being able to act while improvements are still possible, rather than being made aware some time after the call of what has happened.

Real-time analysis can be used in many ways:

- monitoring calls for key words and phrases, which can either be acted upon within the conversation, or passed to another department (e.g. Marketing, if the customer indicates something relevant to other products or services sold by the company)

- alerting the agent or supervisor if pre-specified words or phrases occur

- offering guidance to the agent on the next best action for them to take, bringing in CRM data and knowledge bases to suggest answers to the question being asked, or advice on whether to change the tone or speed of the conversation

- escalating calls to a supervisor as appropriate

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[1] http://www.oxforddictionaries.com/definition/english/analysis

- detecting negative sentiment through instances of talk-over, negative language, obscenities, increased speaking volume etc., that can be escalated to a supervisor

- triggering back-office processes and opening agent desktop screens depending on call events. For example, the statement of a product name or serial number within the conversation can open an agent assistant screen that is relevant to that product

- making sure that all required words and phrases have been used, e.g. in the case of compliance or forming a phone-based contract

- suggesting cross-selling or upselling opportunities.

Many solution providers have worked hard to bring to market new or improved solutions to assist with real-time monitoring and alerts, and recognition of key words, phrases, instances of talk-over, emotion and sentiment detection, pitch, tone, speed and audibility of language and many other important variables can be presented on the agent desktop within the call, triggering business-driven alerts and processes if required. Speaker separation and redacted audio output (e.g. stopping sensitive data being included in text transcriptions) further add to real-time analytics' capabilities.

The speed of real-time analysis is crucial to its success: long delays can mean missed, inappropriate or sub-optimal sales opportunities being presented; cancellation alerts can show up too late; compliance violations over parts of the script missed-out may occur as the call has already ended. However, it is important not to get carried away with real-time analysis, as there is a danger that businesses can get too enthusiastic and set alert thresholds far too low. This can result in agents being constantly bombarded with cross-selling and upselling offers and/or warnings about customer sentiment or their own communication style, so that it becomes a distraction rather than a help.
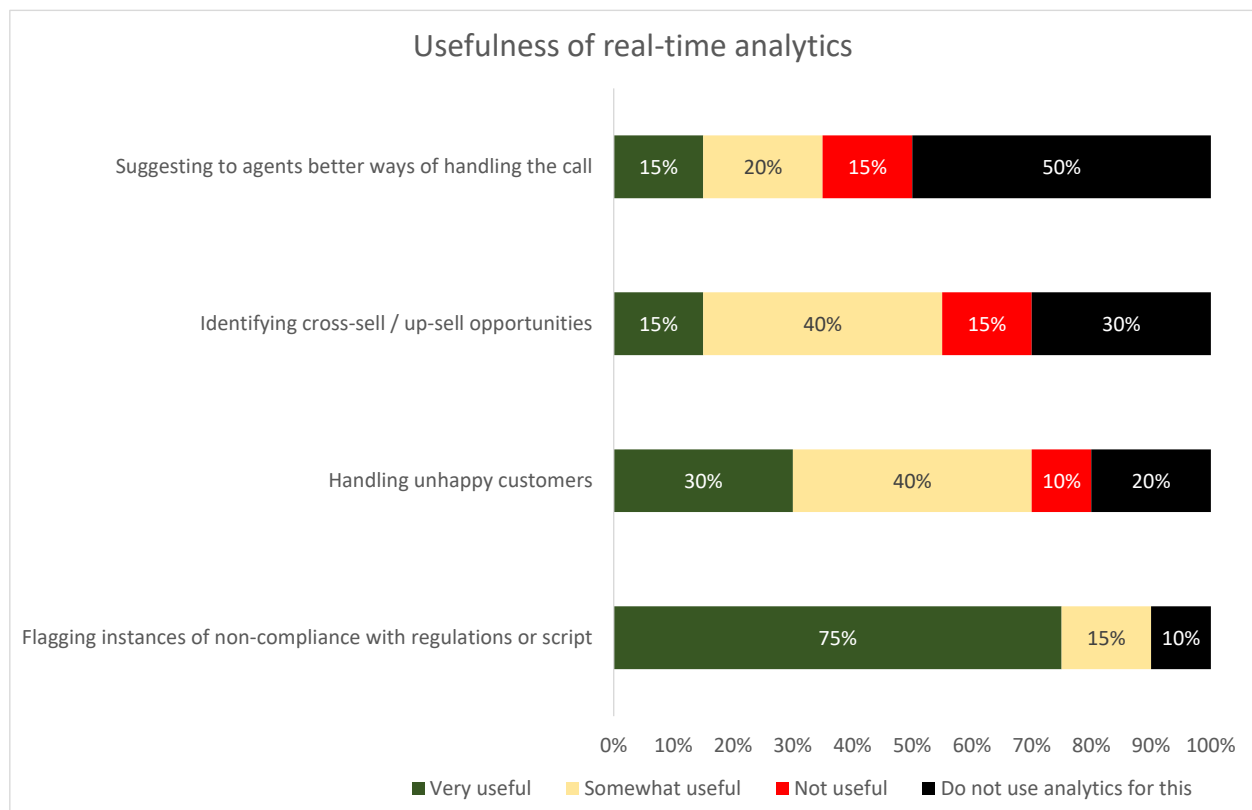
The effectiveness of real-time analysis may be boosted by post-call analytics taking place as well. For example, by assessing the outcomes of calls where specific cross-selling and upselling approaches were identified and presented to agents in real time, analysis can show the most successful approaches including the use of specific language, customer type, the order of presented offers and many other variables (including metadata from agent desktop applications) in order to fine-tune the approach in the future. Additionally, getting calls right first-time obviously impacts positively upon first-call resolution rates, and through picking up phrases such as "speak to your supervisor", can escalate calls automatically or flag them for further QA.

Real-time analysis offers a big step up from the traditional, manual call monitoring process, and is particularly useful for compliance, debt collection, and for forming legally-binding contracts on the phone, where specific terms and phrases **must** be used and any deviation or absence can be flagged to the agent's screen within the call. Finance, telecoms and utilities companies – and indeed, any business where telephone-based contracts are important – are particularly interested in this.

Respondents using real-time analytics report that it is particularly valuable for flagging non-compliance with scripts or regulations in real-time, and also in identifying and handling dissatisfied customers more effectively.

Real-time analytics' ability to identify cross-selling and upselling opportunities is less highly rated, with only 21% of respondents that use analytics for this purpose state that it is very useful. A relatively low proportion of real-time analytics users report that they use it to suggest better ways to the agent of handling the call.

Figure 6: Usefulness of real-time analytics

Usefulness of real-time analytics

Category	Very useful	Somewhat useful	Not useful	Do not use analytics for this
Suggesting to agents better ways of handling the call	15%	20%	15%	50%
Identifying cross-sell / up-sell opportunities	15%	40%	15%	30%
Handling unhappy customers	30%	40%	10%	20%
Flagging instances of non-compliance with regulations or script	75%	15%		10%

■ Very useful   ■ Somewhat useful   ■ Not useful   ■ Do not use analytics for this

As with speech analytics, text analytics can be applied historically or in real time. It can be applied to interactions between customers and agents (as in the case of email, web chat or social media contact), or by looking at customer feedback, whether on the business's own website or on third-party sites. Unlike speech analytics, text analytics does not require a speech recognition engine to identify the words being used, but the general principles and opportunities are similar. Much of the data analyzed by text analysis is unstructured (i.e. is not found in traditional structured databases), such as emails, web chats, message boards, RSS feeds, social media etc. The collection and processing of this data may involve evaluating the text for emotion and sentiment, and categorizes the key terms, concepts and patterns.

Historical text analysis is useful for business intelligence, whether about how the company and its products are perceived, or the effectiveness of the customer contact operation. It is important to note that many uses of historical text analysis work best when they are used shortly after the comment is made, rather than weeks or months afterward: an issue that is commented upon by many customers may need to be acted upon rapidly. For example, confusion about a marketing message, complaints about phone queues, or a case of system failure which prevents customers from buying on a website need to be identified and handled as quickly as possible. For longer-term issues, such as gathering suggestions on new functionality for a product release, such urgency is less important.

Most large companies will have formal customer satisfaction and feedback programs, and also will monitor third-parties such as TripAdvisor or Yelp, which provide structured data in the form of scores, and efforts should be made to identify the most important data sources. Text analytics helps to dig deeper into the actual unstructured comments left by customers, which are otherwise very difficult and time-consuming to categorize and act upon, especially where there are many thousands of comments. Industry-specific vocabularies can be used to identify and understand more of the relevant comments, and place them into the correct context. Solutions should also be more sophisticated than simply to identify key words or phrases: the sentiment of the whole comment should be considered (for example, "loud music" in a shop may be exciting to one customer, but irritating to another). Many comments are mixed-sentiment, and may also mix a 5-star review with some more critical comments, which the analytics solution will have to take into account: the comments are where the real value is found, with both positive and negative insights available to be understood.

Perhaps the most obvious potential contact center use of AI-enabled text analytics is in handling digital enquiries, where web chats generally take far longer than phone calls (due to agent multitasking, and typing time) and some email response rates can still be measured in days. As the cost of web chat is broadly similar to other channels such as email, voice and social media, there is considerable room for increasing efficiencies and lowering costs. Real-time text analytics can be used to assist agents when answering emails or handling web chats, or to identify customers at risk based on feedback comments they have left, initiating an action aimed at alleviating their problem immediately.

PREDICTIVE ANALYTICS

Predictive analytics is a branch of analysis that looks at the nature and characteristics of past interactions, either with a specific customer or more widely, in order to identify indicators about the nature of a current interaction so as to make recommendations in real-time about how to handle the customer.

For example, a business can retrospectively analyze interactions in order to identify where customers have defected from the company or not renewed their contract. Typical indicators may include use of the words "unhappy" or "dissatisfied"; customers may have a larger-than-usual volume of calls into the contact center; use multiple channels in a very short space of time (if they grow impatient with one channel, customers may use another); and mention competitors' names. After analyzing this, and applying it to the customer base, a "propensity to defect" score may be placed against each customer, identifying those customers most at risk. Specific routing and scripting strategies may be put in place so that when the customer next calls, the chances of a high-quality customer experience using a top agent are greater and effective retention strategies are applied.

AI can be applied across the entire customer journey, including sales, marketing and service, helping organizations understand customer behavior, intent and anticipating their next action. For example, an AI solution may find a pattern amongst previous customers that they are likely to search for specific information at a particular point in their presales journey, and proactively provide this information (or an incentive) to the customer before they have even asked for it. AI can also help with customer onboarding through predicting which customers are likely to require specific assistance.

Machine learning will allow AI to go beyond simply what they have been programmed to do, seeking out new opportunities and delivering service beyond what has simply been asked of them. Through understanding multiple historical customer journeys, AIs will be able to predict the next most-likely action of a customer in a particular situation, and proactively engage with them so as to avoid an unnecessary inbound interaction, providing a higher level of customer experience and reducing cost to serve.

SCREEN/DESKTOP ANALYTICS

Desktop analytics (also known as screen analytics) allow businesses to record an agent's desktop in order to assist with quality assessments at an agent level, and also to identify areas within systems and processes that cause delays within customer interactions.

Additionally, management can search for examples where agents skipped compulsory screens or ignored guidelines around how best to close the sale, in order to maximize future compliance with regulation and company procedure.

Average call duration is a metric that has been measured in contact centers since their very first inception. However, businesses have had to rely upon anecdotal information in order to decide whether excessively lengthy calls are a factor of agent inexperience or inability to answer the customer's question, or if there is a particular step within the procedure when delays are occurring in an otherwise competently-handled call (for example, from a lack of training about a particular area, or a badly designed screen layout).

Desktop analytics can provide information about exactly how long each step with an interaction takes, providing management with the insight as to which processes could potentially be automated, and how much time (and thus, cost) would be saved. Businesses would also gain insight into how agents actually research issues that they cannot immediately answer (for example, do they research the company website, a knowledge base or the wider Internet, and if so, which method is the most successful?).

The back office is the part of the organization that processes activities supporting the rest of the business, such as order processing and fulfilment, payment and billing, and account creation and maintenance. Much of what the back office does is driven by interactions in the contact center which trigger the relevant processes, which the back office then have to deliver upon. ContactBabel research has found that around 4 in 5 complaints are actually about failures occurring within back-office processes rather than within the contact center itself, so analyzing and improving the back office is in the interests of the customer-facing departments as well.

WFO solution providers are developing applications that can be used in the back offices and branches of large organizations as well as their contact centers. Far more employees work in these spaces than in the contact center, although many back offices lack the same focus upon efficiency and the tools to improve it. With the increased focus on the entire customer journey, back office processes are starting to fall within the remit of customer experience professionals, who have the remit to alter and optimize any area of the organization that impact upon the customer experience, no longer being restricted to the physical environment of the contact center. The industry is likely to see back office and contact center workforce management systems being closely integrated, or even working as a single centralized function that can track and analyze the effect of different departments and processes on others throughout the customer journey.

The back office has somewhat different requirements to the contact center, and will require different functionality, including:

- supporting different metrics and deadlines to those of the contact center
- presence management, needed where there are multiple steps within a process that must be carried out by different individuals
- deferred workload and backlog management
- workload allocation based on large batches of work arriving at once, rather than be distributed throughout the day such as is found within the contact center
- forecasts built on contact center events and volumes
- different service levels and resource requirement calculations: many back office processes take considerably longer than a contact center interaction
- adherence to schedule without data from an ACD and capacity modelling (which includes employee skills and resource availability)
- the identification of bottleneck processes.

The use of desktop analytics and screen recording in the back office means that even non-customer-facing employees to have their performance measured and optimized in the same way as their front office colleagues.

CUSTOMER JOURNEY ANALYTICS

In the long-term, the use of customer contact analytics will improve the customer journey as many business process improvements will be enabled by the complete understanding of what is happening each step of the way, whether within the customer interaction cycle, or in one of the other processes occurring elsewhere within the organization.

Businesses that understand the reasons that customers are contacting them are able to staff and train agents appropriately, provide feedback on company products and services to relevant departments, and identify suitable self-service opportunities. They are also able to understand the various levels of customer effort required at each stage within the interaction process.

While it is impossible to quantify ROI upfront, there is a strong argument that "you don't know what you don't know". An individual agent may not notice that a new trend is happening until they receive several calls about it, but even if they are proactive, they may not receive that type of call again for several hours or even days. Analytics and closed-loop feedback identifies trends across the entire operation as they happen, instead of waiting on agents to realize something out of the ordinary is happening.

However, there is no guarantee what will be found, and few businesses will initially implement analytics in the hope that optimizing the customer journey and hopefully gaining insight will save costs and increase revenue. Many solution providers comment that early adopters of analytics – who often started with compliance and agent quality assurance – are now looking at how they understand sales effectiveness, marketing campaigns and process improvements. Longer term, understanding and optimizing each part of the customer journey will be a key use of analytics.

Customer journey analytics aims to gather together the various data sources, channels, triggered processes and customer touchpoints involved in the customer interaction in order to optimize the overall customer journey. By fully understanding the customer experience, businesses can identify and rectify inefficiencies, helping to break down the boundaries and siloes between channels and between the front office and the back office.

Customer journey analytics goes beyond the measurement of individual interactions and touchpoints. Sophisticated analytics solutions use data inputs from multiple sources, both structured and unstructured, in association with journey maps, which are produced by employees in multiple roles within the organization who document how various processes currently work and how they could be optimized. This is particularly the case in larger businesses which are increasingly looking at the effectiveness of back office processes that can impact upon whether the customer has to contact the business multiple times.

Customer effort and engagement is very dependent upon the effectiveness with which channels work together, as well as the level of first-contact resolution. Proactively engaging the customer at the appropriate time within the customer journey has an opportunity to reduce the effort required for the customer to fulfil their interaction completely. As part of a wider omnichannel engagement, businesses must seek to understand how and why customers prefer to engage with them, optimizing the flow of information throughout any connected processes and channels so that the organization becomes easy to do business with.

Customer surveys have been an integral part of most businesses since time immemorial. Recently, there has been a great increase in the number of organizations implementing "Voice of the Customer" (VoC) programs, increasingly based around large-scale analysis of call recordings, as well as using formal surveys of customer experience to offer the customer a chance to feed-back, and the business to learn.

VoC programs strive to capture customer feedback across multiple channels of engagement (IVR, live agent, email, etc.), while enabling closed-loop strategies to support customer retention, employee development and omnichannel experience optimization. VoC programs typically trigger alerts with role-based delivery via the use of text and speech analytics, offer statistical modelling services to pinpoint root causes, and digitally track progress and results with case management.

The definition of what a VoC program includes runs the gamut across vendors from simply sending alerts based on key words derived from a survey, to more complete solutions that directly contribute to contact center optimization and overall CX improvement. Examples of more complete VoC program features include:

Closed Loop

- Automated Alerts: as surveys are completed, real-time alerting capabilities will immediately identify and inform teams of customers in need, while assigning ownership for follow-up

- Callback Manager: an interactive system that enables callback teams to conduct detailed case reviews and disposition follow-up activities for eventual root-cause analysis

- Case Management: root-cause exploration tools enable back-end analysis of the customer's initial concern, enabling operational support teams to proactively uncover, track and mitigate systemic problems.

Coaching

- In-The-Moment Coaching Tools: as surveys are completed, real-time alerting capabilities will identify when a frontline employee is in need of immediate coaching intervention

- Performance Ranker: the performance ranker helps managers develop weekly and monthly coaching plans by outlining strengths and weaknesses for each employee, while identifying opportunities for peer-based knowledge sharing

- Behavior Playbooks: playbooks with scorecards help managers coach to specific behaviors by outlining how to best demonstrate each behavior, showcasing best-practice examples and suggesting sample role-plays.

Reporting

- Real-time Insight – text analytics zeros in on key issues from multichannel survey feedback

- Role-based Reporting – define type and frequency of report delivery based on responsibility, title, geography and more

- Call Recording – drill-down detail can include IVR and live agent call recording for additional insight.
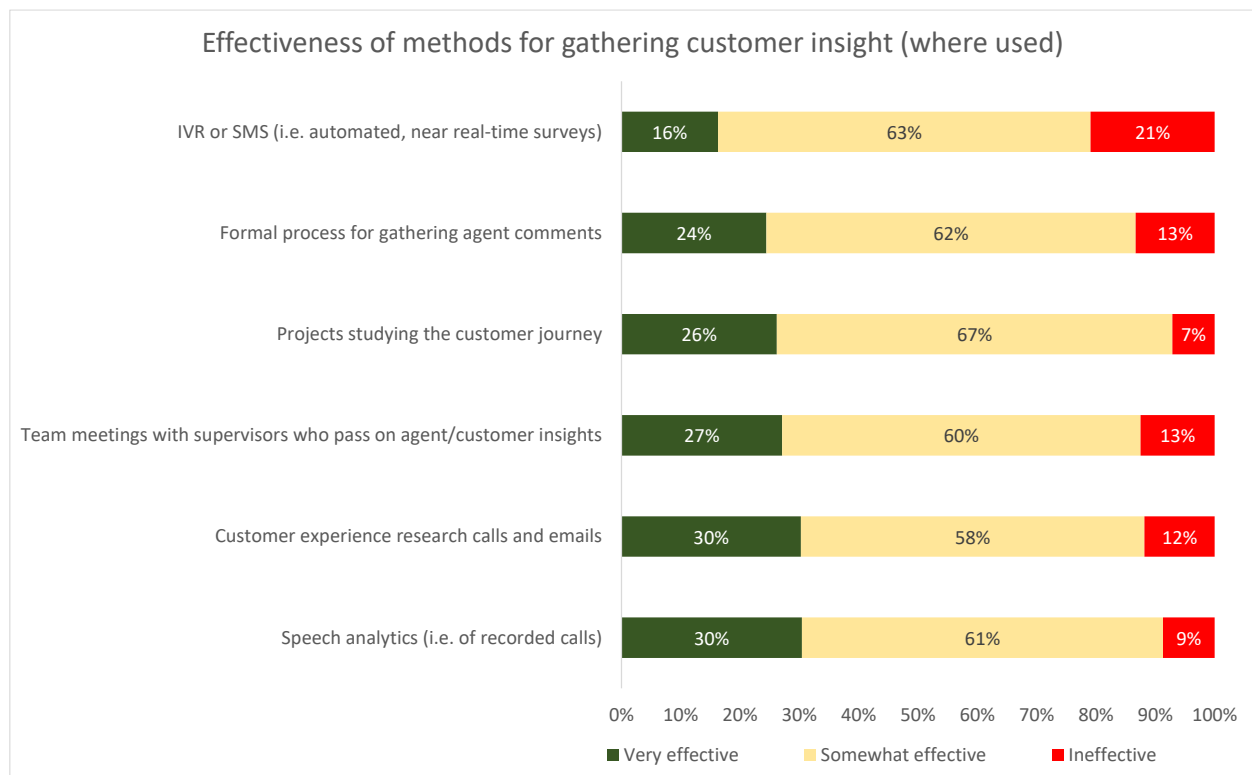
VoC programs are frequently ongoing engagements with result measured by internal CSAT scores, NPS benchmarks and efficiency improvements. VoC surveys discover what the company is doing wrong (and right), where improvements can take place, how the company is perceived against its competition and how it can improve. It is important to view the survey from the customers' perspective, rather than checking boxes that just relate to internal company metrics, which is self-serving. Surveys should also be ongoing, to check whether real improvements are being made after the issues have been identified.

It is vitally important before beginning to survey customers, that a business:

- Clearly determines the purpose and aims of the survey

- Considers adopting a variety of question types. Scored questions enable a business to produce statistically significant and representative data. Free comments allow the gain of real insight into customers' perception of service

- Selects an experienced company to set up and host the survey. Businesses will benefit from their expertise and knowledge and avoid potentially costly errors

- Ensures that the survey can be carried out throughout the day, including peak times and through different channels, to gain a truer picture of the customer experience

- Makes sure that the results of the survey can be collated and analyzed in a wide variety of ways. It is pointless to amass information if it cannot be evaluated and the results disseminated usefully

- Has procedures in place to act upon the information that it finds. The survey may have uncovered some broken processes in the service which need attention. It will also inevitably throw up disgruntled customers whose specific concerns need addressing. In this instance, the survey platform should provide some mechanism for alerting and following-up to ensure that dissatisfied customers are escalated to the appropriate staff

- Adopts a unified approach across the business to assessing and monitoring customer satisfaction. If a business continues to reward agents based on traditional call performance metrics, it is merely paying lip service to good service. If agents are rewarded based on customer satisfaction ratings, it will increase agent engagement and retention at the same time as improving the service it offers to customers.

Alongside these direct customer surveys, VoC analytics solutions can also gather insight from recorded digital and voice channels. Aggregation of customer surveys and analytical results can identify the root cause of any issues identified, and provide actionable insight for changing processes and/or agent handling techniques. VoC should be seen as a continuous process, rather than a one-off project, and ongoing analysis allows the business to operate a closed-loop system, whereby identified issues can be actioned and continuously checked to make sure that the problem does not reoccur.

Figure 7: Effectiveness of methods for gathering customer insight (where used)

Effectiveness of methods for gathering customer insight (where used)

Method	Very effective	Somewhat effective	Ineffective
IVR or SMS (i.e. automated, near real-time surveys)	16%	63%	21%
Formal process for gathering agent comments	24%	62%	13%
Projects studying the customer journey	26%	67%	7%
Team meetings with supervisors who pass on agent/customer insights	27%	60%	13%
Customer experience research calls and emails	30%	58%	12%
Speech analytics (i.e. of recorded calls)	30%	61%	9%

The previous chart looks at contact center professionals' opinions of the effectiveness of each method of gathering customer insight.

Automated analytics solutions get reasonable approval ratings, although IVR/SMS surveys get a mixed response. However, these methods are used by less than half of respondents as the following table shows.

Figure 8: Use of methods of gathering customer insights

Method	Proportion of respondents using this method
Meetings with supervisors who pass on agent insights	94%
Formal process for gathering agent comments	88%
Customer experience research calls and emails	74%
Speech analytics (i.e. of recorded calls)	44%
IVR or SMS (i.e. automated, near real-time surveys)	41%
Projects studying the customer journey	40%

As part of the research for this report, thousands of contact center professionals were asked for their views on interaction analytics, particularly about what would hold them back from implementing it. By far the most important issue raised was how to build a strong enough return-on-investment (ROI) case to get the required corporate buy-in.

Return on investment for customer interaction analytics can come from numerous sources, depending upon how the solution is used. Generally, it will come from the avoidance of a specific cost, (including the reduction of a risk in the case of compliance), or the increase in revenue.

The return on investment of customer interaction analytics used for compliance can at first glance be difficult to prove, but it is the avoidance or reduction in litigation and regulatory fines which can be placed against the cost of the solution. Large banks will have funds put away running into the tens of millions of dollars each year against the possibility of paying out, and any significant reduction in fines would pay for a speech analytics solution very quickly. In the UK, the banking industry had put aside several billion pounds to pay compensation for the mis-selling of PPI (payment protection insurance), and having the ability to prove that no regulations had been broken would have been of great use.

Most vendors have tools which can be used to estimate return on investment, often based on what they have seen in similar operations elsewhere, and they are keen to share them with potential customers. Estimates of the time taken for the solution to pay for itself usually vary between 6 and 18 months.

Variables to be considered for ROI measurements include:

Cost reduction:

- Reduction in headcount from automation of call monitoring and compliance checking
- Understanding and minimizing the parts of the call which do not add value
- Avoidance of fines and damages for non-compliance
- Reduction in cost of unnecessary callbacks after improving first-call resolution rates through root cause analysis
- Avoidance of live calls that can be handled by better IVR or website self-service
- Reduced cost of QA and QM
- Understand customer intent, e.g. an insurance company received a lot of calls after customers had bought policies from their website. Analysis was able to show that customers were ringing for reassurance that the policy had been started, meaning the company could immediately send an email to new customers with their policy details on it, avoiding the majority of these calls
- Lower cost per call through shortened handle times and fewer transfers
- Lower new staff attrition rates and recruitment costs through early identification of specific training requirements
- Identifying non-optimized business processes (e.g. a confusing website or a high number of callers ringing about delivery) and fix these, avoiding calls and improving revenue.

Revenue increase:

- Increase in sales conversion rates and values based on dissemination of best practice across agents, monitored by script compliance
- Increase in promise-to-pay ratios (debt collection)
- Optimized marketing messages through instant customer evaluation
- Reduced customer churn through dynamic screen-pop and real-time analytics
- Quicker response to new competitor and pricing information
- Increase sales revenue by automating manual, non-revenue generating activity by identifying and improving self-service options
- Route specific customer types to the best available agents to optimize empathy by matching communication styles
- Some businesses assign a revenue value to an improvement in customer satisfaction ratings or Net Promoter Score®
- Understand and correlate call outcomes, using metadata and call analysis to see what works and what doesn't.

Also, the improved quality of agents, better complaints handling and improved business processes outside the contact center should be considered.

It is important for the CFO to see the customer data and brand loyalty as assets, and to consider the effect that complaints and general dissatisfaction have upon those assets. Analytics helps businesses to understand why these assets (i.e. the customer base) may be shrinking over time, and to put actions in place to turn that around. In order to get sign off on an analytics project, these benefits must be monetized.

Against these potential positives, costs to consider include:

- License fees or cost per call analyzed
- IT costs to implement (internal and external)
- Upgrade to call recording environment if required
- Bandwidth if hosted offsite: the recording of calls is usually done on a customer's site, so if the speech analytics solution is to be hosted, it will involve of lot of bandwidth, which will be an additional cost, especially when considering any redundancy
- Maintenance and support agreements, which may be 15-20% annually of the original licensing cost
- Additional users – headcount cost – decide who will own and use it, do you need a speech analyst, etc.
- Extra hardware e.g. servers
- Ongoing and additional training costs if not included
- Extra work generated by findings
- May need extra software to extract data from the call recording production environment.

Any business case needs to be built with support from the potential end-users, understanding the specific key performance indicators that are important to them, rather than focusing on IT specific issues. Whatever the variables and factors that businesses choose to build the ROI and business case, it is important to gather benchmark data before the solution is deployed, so as to be able to quantify any change accurately. If possible, use a 'control and experiment' approach : for example, one sales team carries on as they were, while the other may have their scripts changed or receive tailored training based on analytical insights. It is also important to get business users involved early in the process, giving them a key part in defining the right business case and the desired ROI.

DEVELOPING THE USE OF ANALYTICS

Once the implementation has been made, businesses then need to make sure the solution delivers what was promised, and hopefully this initial success will provide a platform for the analytics solution to be directed elsewhere.

Vendors strongly recommend that businesses put baseline measurements in place before any implementation takes place, such as how many calls are tagged with a particular issue. The vendor and customer implementation team monitor and suggest changes to processes and approaches based on findings of the initial analysis, and measurement post-implementation will quantify the cost savings or alteration to other key metrics.

If the initial use of analytics is successful, the business can seize the opportunity to use this enthusiasm and positivity to roll analytics into other areas. Analytics can deliver insight which is of use to other parts of the business as well as the contact center, and is an opportunity to demonstrate to the rest of the business that there is a wealth of information that can be mined to support the decisions that other departments have to make. Pointing to examples where customers are changing supplier due to superior products from a competitor, or where another business's marketing campaign is creating a high turnover in your customer base will grab the attention of senior decision-makers elsewhere in the enterprise.

To be successful, analytics must be integrated into the existing systems, processes and structure. Embedding it within the overall culture of the wider business is perhaps the surest way of ensuring success. At a contact center level, connecting analytics output with the quality management process means that the operation can find a place for analytics within their world, which will encourage them to consider it for business intelligence purposes later on. Businesses may also wish to consider solutions where analytics output is shown automatically across the organization, sharing dynamic reports and graphics on a regular or exceptional basis to business owners elsewhere in the enterprise.

Although every user's requirements from analytics will be different in some way, it may be useful to consider looking for some of the following key words and phrases:

- names of competitors
- obscenity or profanity
- names of your specific products or services
- references to management (e.g. "supervisor" or "manager") as this may indicate the customer is dissatisfied with the agent
- active opinion (e.g. "it would be good if", "I would like", "I want")
- key commercial words (e.g. "buy", "purchase", "interested in")
- phrases which indicate compliance, such as those found in the terms and conditions
- customer dissatisfaction (e.g. "I'm not happy", "I want to close my account")
- references to the agent's performance (e.g. "you've been really helpful", "rude").

Two examples of interesting, value-add opportunities that analytics provides are root cause analysis, and discovery.

'Tell-me-why' or root-cause analysis

Tell-me-why is a starting point for analysis. A business which knows it has a problem with its web self-service function can find out more about the problem through automated analysis of calls, rather than through asking agents directly or listening to recordings. Inputting 'website', 'web' or similar, searches the index of words or phrases and returns likely calls. Speech-to-text-based systems can search for other words in the conversation that occur frequently (without the need for users to predefine these searches in advance), and group them together into categories, rated by relevance, importance of words etc. (e.g. if 'website' and 'password' occur together far more frequently the usual, this is probably an area to explore further). The use of speaker separation – whether through having dual channels or using software-based algorithms – means that the system can differentiate the customer from the agent, giving a greater accuracy of results.

Discovery

'Discovery' is a term often used within the customer contact analytics industry, and refers to a deep, automated analysis of trends, patterns and results which are identified by the speech analytics solution rather than the knowledge or insight of the human operators. Discovery will help users to find calls that are similar to each other, perhaps through similar groupings of words or phrases, and explore these links to discover the issues driving them. Many solutions offer automated discovery and this is an area that will always be improving and becoming more subtle and effective, having huge potential benefits for businesses.

The ability to see trends – to know that the instances of the words 'website' and 'password' have increased by 2,000% this week compared to the norms of the past 6 months - quickly identifies likely pain points for the customer and potential broken processes. The continual tracking and analysis of similar information or categories over time also allows a business to see whether the remedial action that they put into place has actually worked.

Of course, any analysis where the direct beneficiary is not the contact center must be properly aligned to the organization's objectives and strategy, encouraging changes to be made to areas that have already been earmarked as needing improvement. Otherwise, if the focus is not aligned with strategic goals, information merely becomes 'nice to know', rather than actionable.

Customer interaction analytics has the ability to tear down the virtual wall between the contact center and other areas of the business, meaning that the business intelligence extracted can be shared and valued by parts of the organization that otherwise have little to do with the contact center. With the historical and ongoing difficulty in getting the business to value the customer contact operation fully, this can only be a good thing politically.

Some real-life examples of where analytics has delivered improvements include:

- an insurer improved first call resolution by over 6 percentage points by understanding and correcting how agents respond to specific types of denied claims issues

- Identifying the types of low-to-medium complexity calls that could be handled less expensively but still effectively via self-service channels. The result can be either reduced headcount or extended service hours

- improved sales conversions by 41% and collections revenue by 20% by identifying the skills that differentiated top performing agents from bottom performing agents, and then focusing training and coaching programs on those key skills

- analyzing and fixing back office processes that were generating unnecessary repeat calls and driving poor customer satisfaction

- highlighting the five key customer queries and developing FAQs for agents, which significantly reduced average handle time on these calls

- reducing call volume by 2% by identifying and fixing issues with the password reset process

- identifying opportunities in verbatim customer feedback to address specific customer segment needs, increasing sales by 30% the following year

- categorizing all customer calls by reason for the call and any subtopics, measuring agent performance (handle time, customer satisfaction rating, and issue resolution) by call type. Identified the type of calls that had excessively high handle time due to sub optimal customer identity verification, and improved coaching and training decreased handle time by an average of 36 seconds, saving $5 million per year

- determining that 57% of calls could be handled through a self-service web portal, but the customers were not aware that they could do this online

- quality program was transformed by providing targeted data on the major reasons for customer dissatisfaction

- discovering that only 2% of calls taken at night were critical, reducing headcount on the night shift

- reducing QA headcount from 40 agents to fewer than 10 by implementing automated scoring on 100% of calls.

For more information about interaction analytics, please download ContactBabel's free "Inner Circle Guide to Customer Interaction Analytics".

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

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