The Inner Circle Guide to Customer Contact Analytics
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About ContactBabel
CallMiner helps businesses and organizations improve contact center performance and gather key business intelligence by automating their ability to listen to every customer interaction. CallMiner’s market leading cloud-based voice of the customer analytics solution automatically analyzes contacts across all communication channels: calls, chat, email, and social.

CallMiner offers both real-time monitoring and post-call analytics, delivering actionable insights to contact center staff, business analysts, and executives. The results include improved agent performance, sales, operational efficiency, customer experience, and regulatory compliance.

With over 12 years of industry leadership and over 2 billion hours of conversations analyzed, CallMiner serves some of the world’s largest call centers, delivering highly effective, usable, and scalable speech analytics solutions.

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UNLOCK BUSINESS INTELLIGENCE AT RECORD SPEED

It shouldn’t take weeks to find out what’s going on in your customer conversations. CallMiner’s award-winning contact analytics solution makes it easy to discover and act on key insights, all without expensive service engagements.

- Flexible search tools in a familiar web-like interface
- Full conversational transcripts with preview snippets
- Guided root cause analysis that automatically highlights outliers
- True organic discovery, no need to pre-define what you’re looking for

Speech analytics powered by

Take a free contact analytics test drive with your own phone calls!

http://callminer.com/free-speech-analytics/
USES OF CUSTOMER CONTACT ANALYTICS

Most contact center solutions have a specific, easily-communicated reason for purchase, usually around cost savings. The most popular and widespread solutions, such as IVR, workforce management, CTI and outbound dialing, have all had a clear and quantifiable route to cost savings and improved efficiency. Customer contact analytics has a different appeal to contact centers, and 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, and to the cynical, it can seem as though analytics is claiming to solve every problem that a contact center could possibly have.

While many businesses initially implement customer contact analytics to solve a specific problem, successful usage of analytics solutions often encourage a more strategic approach to the technology later on. While there are various ways to segment the uses of customer contact analytics, 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

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COMPLIANCE

Compliance with legal regulations

Many businesses, especially those in finance, insurance, public sector and debt collection, have become encumbered with regulations which they must follow strictly, with potentially expensive penalties for failure, including heavy fines and criminal prosecution. Contact centers have tried to reduce their risk through scripting, call monitoring and call recording, but these do not offer any guarantees or proof of compliance. Speech analytics means that 100% of calls can be verified as compliant - and be proven to be so - preventing disputes or escalation of enquiries by monitoring the exact language used within each call.

This is true for both inbound and outbound operations: purchasing insurance, for example, may require a long script to be read by the agent and agreed to by the customer; whereas outbound debt collection agencies may have to identify themselves and the purpose of the call clearly or else be found to be in breach of regulations. In such cases, using analytics to check and be able to prove that 100% of calls are compliant is a popular option.

Return on investment comes from the avoidance of litigation and fines, and the use of speech analytics for compliance is very prevalent, especially in North America.

Debt collection and improving cross-selling & up-selling

Although many debt collection firms have detailed scripts for their agents - often driven by the need to comply with regulations - the results, such as the promise-to-pay ratio - can differ widely by agent. Speech analytics provides two benefits for debt collectors: the ability to prove compliance (which is usually the primary reason for purchase), and through the analysis of successful and unsuccessful calls, the chance to understand the type of agent language and behavior that yields the best results, and share these with underperforming agents.

The same principle of matching successful outcomes with particular call traits can be used for improving cross-selling and up-selling rates in sales environments.
Real-time compliance and adherence to script

Real-time call monitoring means that phone-based contracts can be seen to be completed first-time, with all relevant information provided to the customer on the call, and red-flags on the agent’s screen if they have missed saying anything vital, or made an error. This reduces the need to call a customer back and avoids any dispute over whether a legitimate contract has been made.

While some compliance solutions use historical analysis to check that regulations have been adhered to, other solution providers take the view that compliance should be enforced within the conversation itself, and trigger alerts to the agent desktop to make sure that all of the relevant script and customer responses have been included.

Redaction and blocking of card information from recordings for PCI compliance

PCI guidelines prohibit the storage of sensitive authentication and payment card data (such as the 3- or 4-digit code found on payment cards). If the contact center does not use pause and resume recording, or similar functionality within the original call, some speech analytics solutions offer an option to be run retrospectively against recordings in order to identify payment card information and any other sensitive data that should not be stored, redacting it (rubbing it out) from the recordings. It is also possible to remove this information from transcriptions as well.

Other analytics solutions look for predetermined phrases within the conversation as it occurs, blocking the voice within the call recording.
IMPROVING THE QA / QM PROCESS

Improve the quality monitoring program

Interaction analytics tries to take the guesswork out of improving customer experience, agent performance and customer insight. By moving from anecdote-based decisions, from qualitative to quantitative information, some order is put on the millions of interactions that many large contact centers have in their recording systems, improving the reliability of the intelligence provided to decision-makers. The need to listen to calls is still there, but those listened to are far more likely to be the right ones, whether for agent evaluation or business insight.

Organizations using customer contact analytics can carry out an evaluation of chosen calls - for example, unhappy customers - the results of which can be then be fed back into the existing quality assurance process. These are then treated in the same way, without upheaval or any need for altering the QA/QM process, only improving the quality and accuracy of the data used by the existing solution.

The limitation of a recording-only quality management approach is that it lacks scale, objectivity and relies on the consistency of multiple supervisors and analysts: the only reason that a business would not want to monitor the quality of every single interaction in and out of the contact center is because it is far too difficult to get reliable, timely and accurate information via human means alone.

Being able to monitor 100% of calls with 100% of agents means that it is possible to make sure that agents comply with all business rules as well as regulations. Linking this information with metadata such as call outcomes, sales success rates and other business metrics means that the most successful behaviors and characteristics can be identified and shared across agent groups.

Some solution providers report that automating the QA/QM process has enabled large contact centers to decrease headcount of these teams by as much as 75%, making very significant cost savings.
Identification of training needs

Apart from 100% monitoring of calls, speech analytics can be used to flag cases of talk-over, as well as silence detection. The former can be a source of irritation to the customer, or an indicator of stress, and long silences can indicate lack of agent knowledge, although long system navigation times or delays in system response times can also cause this. The analysis of these types of call will identify which of these issues is really the problem.

Additionally, customer contact analytics will also make the training and coaching received by new agents in particular far more effective and targeted. This is especially important for this class of agent, as many operations report that half of their overall staff turnover occurs in the first 90 days of the job, when agents are obviously less-skilled or confident about their role or the organization. Customer contact analytics can identify the types of behavior - good and bad - that lead to successful call resolution or otherwise, and these can be presented in a targeted way to the new agent to fast-track them to a level of competency that should reduce attrition and improve quality.

There is also increased interest in agent self-assessment of calls, where they can view automated quality scoring results, and request relevant training.

Improve the workforce optimization suite

One of the strongest messages to come out from the research carried out for this report was the long-term view that solution providers have of the integral role of customer contact analytics as an enabler and optimizer for other solutions. Many analytics vendors have a complete workforce optimization suite, and are constantly working to automate and integrate findings and actions from the analytics solution into their overall WFO suite.
AGENT OPTIMIZATION

_Predictive behavioral routing_

Although different from the rest of the solutions around customer contact analytics, predictive behavioral routing uses insights gathered from historical calls and the analysis of customer communication types in order to choose the agent whose skills and characteristics are most likely to achieve a positive response from the next caller in the queue.

Predictive behavioral routing uses millions of algorithms to decode the language used by agents and customers, in order to understand their state of mind, personality, communication style, engagement levels, empathy and transactional attributes (such as ability to overcome objections, willingness to sell, success rates, the number of times supervisor assistance is required, etc.). Through analyzing historical interactions, each customer can be matched against a specific personality style. When this customer calls again, they are identified through the IVR or the dialing number, and the call is then routed through to an agent whose performance when interacting with this specific personality type has been seen to be positive.

This increase in empathy and the matching of communication styles has seen these matched agent-customer pairings get significantly higher sales closure rates and better customer satisfaction scores.

Predictive behavioral routing has its roots in communication-based psychological models for assessing personality type and identifying behavioral characteristics. One vendor’s solution, for instance, is based upon a personality model developed in the 1970’s to assist NASA with astronaut selection; the premise of this model is that individual personality type can be derived from a person’s use of language. By understanding the type of customer, calls can be routed to agents who are best at handling the caller. Agents who are skilled at handling many types of callers’ personality styles can be saved for callers whose character type is unknown, perhaps as this is the first time that they have called.

By tracking agent performance across various personality types, information can be fed into the performance management process to help that agent improve, and agent capabilities are regularly reassessed to promote optimal routing.
Identifying actionable insight

Solution providers are at pains to point out that knowledge gained from analytics in itself means nothing. The key word is “actionable”.

Being able to change the flow and nature of a conversation - improving the chances of first call resolution, better customer satisfaction or, probably most interesting to businesses, improved sales revenue - is one of the most potentially appealing uses of customer contact analytics.

Being able to use metadata - such as call outcomes, the product being discussed, the nature of the customer, etc. - as well as analyzing the call itself, can reveal patterns that would otherwise be very difficult to identify. The example on the next page shows how the reason for different upselling success rates can be understood more effectively through the use of customer contact analytics. In this case, optimal agent behavior and training could be identified and delivered, using insights that would otherwise be unavailable.

Improving the effectiveness of calls is one of the areas focused upon by providers of real-time analytics and monitoring solutions, many of which search for keywords or phrases occurring within the conversation, which can trigger an event such as a pop-up on the agent’s screen prompting them to sell a relevant product, or - for example in cases where raised voices, talk over or obscene language is detected - an escalation to a supervisor is triggered. Some solutions offer an agent dashboard, showing in-call performance such as speed of speech, instances of talk over, volume and stress.

Real-time monitoring can require significant processing power, so customers would do well to check what additional IT resource is required, apart from user licenses. However, the ability to affect the outcome of the call, rather than wait till afterwards to analyze what should have been done, is something which is of growing interest to many businesses.
ONE-OFF & AD-HOC ANALYTICS

As will be discussed later, it is worth mentioning that many solution providers offer a managed services option, whereby the processing and analytics happens off-site, with insights being fed back on a regular basis to the business.

One element of this is the ad hoc, one-off analysis of particular issues. For example, if an investigation of a particular issue - for example, insider trading - needs to take place, a business can ask a solution provider to analyze audio and data recordings in order to report upon them in a timely fashion. This is often the case for emergency compliance or evidence production, usually in the finance industry, and may be an on-site, secure analysis of specific data. However, businesses may also decide to investigate particular commercial issues, such as any mentions of a marketing campaign, and may pass these the solution provider for ad hoc analysis. In many cases, this acts as a first ‘toe-in-the-water’ for a full customer contact analytics implementation.

COMPETITIVE BUSINESS INTELLIGENCE

Customer contact analytics allows businesses to seek out key words and phrases, such as competitors' names or any instances of pricing, or to gather feedback after a marketing campaign goes out. Some businesses are actively using speech analytics to uncover competitive intelligence as well. For example, one wholesaler uses analytics to identify when competitors' pricing information is mentioned on a call, and passes this back to the commercial team to revisit their own pricing structure.

Some businesses carry out detailed and sophisticated analytics looking at a combination of variables, in order to seek out correlations. For example, a business may discover that a combination of two issues mentioned by the customer on a call, as well as the mention of a competitor’s name is correlated with an extremely high churn rate. In these cases, businesses may choose to use real-time monitoring to trigger a customer offer to be made if these factors are identified within the call, or may use post-call historical analytics in order to trigger a post-call event, such as an email, phone call or text message offering incentives to remain loyal to the company.
CUSTOMER JOURNEY OPTIMIZATION

There is an increasing requirement for, and interest in multichannel analytics, including email, text chat, IVR and web browsing sessions, to get the full picture of the customer's real journey in a single interaction, in order to identify and improve any channels that failed to fulfill their requirements. Improving self-service optimization is often a quick win that can provide immediate economic benefit to businesses: in the UK, a mean average of 9% of calls that go into an IVR system are 'zeroed-out' - rejected by the customer in favor of an operator - and in the US, a staggering 26% fail the self-service test.

Businesses using customer contact analytics to review these failed self-service sessions will be able to categorize many of them in order to improve the processes at a macro-level. Common findings from the analysis of these calls is that the IVR system was poorly worded, menu choices were not intuitive, or did not match current service choices. Other failures occur through mistakes in IVR routing, and there may also be problems with a lack of customer awareness that various activities can be carried out by self-service.

Integrating desktop data analytics into speech analytics allows businesses to tag valuable data automatically - such as account ID, product name and order value - from CRM, helpdesk and other servicing applications to recorded interactions. This additional desktop data can be used to enhance automated classification, which allows more targeted and efficient analysis centered on key business issues, such as customer churn, differences in call handling patterns between employees, frequency of holds/transfers associated with order cancellations and upselling and cross-selling success rates.

The use of desktop data analytics also allows the business to see what the agent is doing on the desktop (for example, are they spending too much time in particular applications, are they navigating the screens in the most efficient way, etc.), and for them to understand how much time is being spent in each section of the call.

The next step is to get rid of the silos between channels, allowing the customer to be identified at the beginning of their ‘journey’, and for the business to be able to analyze the efficiency and effectiveness at each stage, whether mobile app, website, self-service application or live call. The end goal is for businesses to understand where customers make their choice, where they drop out, and where the profit is within the multiple processes along the customer journey.

Many solution providers refer to 'the customer journey' as one of the major places where analytics will surely go in the longer term, once businesses have used analytics to handle shorter-term, more operational issues.
No other contact center solution apart from customer contact analytics can provide a solid understanding of why customers are calling. Categorizing types of calls, and then analyzing them for the occurrence of similar types of words and phrases can give an insight into the reasons for customers' calls. For example, a category such as 'sales' might be analyzed for patterns, and it is discovered that the words 'delivery' and 'website' are mentioned in a disproportionate number of them. Listening to some of these conversations, it may be found that the website does not highlight delivery times effectively enough, leading to unnecessary calls to the contact center, rather than the customer purchasing on the website.

The automatic categorization of calls, based on the types of words and phrases that typically get used within these types of calls, is a starting point. Analytics solutions can then add non-audio data, such as desktop activity or account status, and the tracking of word usage compared with its historical use (e.g. a 300% rise in the use of the phrase "can't log-on" after a software upgrade) can quickly indicate and identify issues that can be handed to the relevant department much more quickly than typical inter-department channels could usually manage. Regular references to competitors and their products can be captured, analyzed and passed to the marketing or pricing teams to provide them with real-life, rapid and accurate information upon which to base decisions. This categorization gives a starting point for analysis, meaning that businesses can listen to the right calls rather than getting them randomly or employing large numbers of people to get insight from customers’ calls.
On first glance, customer contact 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?

With high quality data inputs, mixing audio information with data such as call outcomes and revenues, analytics is also able to identify patterns which the business had no idea even existed, suggesting best practice and identifying areas for improvement at agent, contact center and process levels. There are numerous possibilities for how customer contact analytics can impact upon some of the key performance indicators of the contact center, whether sales- or service-focused, inbound or outbound. Analytics can also help organizations to identify which KPIs are actually most important to their business by correlating various performance and operational benchmarks against required business outcomes, such as understanding which operational KPIs and/or agent behaviors are linked with high levels of contract renewals or NPS scores.

**Call transfers**

Rather than making an agent use a call disposition code when they pass a call to another agent (which they may forget to do, or code inaccurately), speech analytics can identify the reasons for passing calls to other agents and putting customers on hold (whether lack of training, broken processes or lack of access to the right systems). Customer contact analytics can also uncover patterns of customer requests for a transfer that were not acted upon by an agent, indicating at-risk customers or agents with knowledge gaps.

**First-call resolution**

A major metric for contact center and customer experience success, first-call resolution can be increased by identifying repeat callers and eliminating the root cause of repeat calls.

An example of this was an organization where they had identified repeat issues as being a problem. Analyzing the calls categorized as such, it was found that agents were saying "we'll call you back within 3 hours". As the callers were very keen to get the issue resolved, they were prone to overestimate the time passing, so analysis found that many called back before the three hours were up. By changing the script to e.g. "It's now 11.45am, we'll call you back by 2.45pm", customer expectations were set and call-backs dropped immediately. A few weeks later, call-backs went back up, and it was found that many agents had gone back to the 'old ways', and had forgotten to give the exact time.
Average handle time

Average call duration / average handle time has traditionally been one of the main measures of a contact center’s 'success', at least when judged by those outside the operation whose focus has often been on cost reduction. In recent years, an increasing focus on the customer experience and first-call resolution has meant that AHT is viewed as less important than previously. However, almost every contact center still tracks this as a metric, as it is closely linked with cost and performance.

Long call durations may be linked with poor agent abilities, lack of knowledge, navigation between systems or very complicated calls, and of course, impact on cost, queue times and the customer experience. Short AHTs can be as bad, if not worse, as they can indicate lack of agent capabilities (so agents pass the call to a colleague, or even deliberately lose the connection), that the contact center is handling too many simple calls that might be better handled by self-service or that there is a quick and easily-resolved common issue, the solution to which could be propagated in the IVR announcement, on the website or via email/SMS. The problem for businesses is that they often don’t know with any level of confidence why call durations differ.

Customer contact analytics allows businesses to categorize each type of call, and through root-cause analysis, determine what a reasonable length for each type of call is, and investigate the outlying anomalies, either on an agent level, or more widely, by comparing the amount of time taken on each category of call now compared to the past. The identification of calls resolved successfully in a reasonable amount of time will also provide the training department with examples of best practice.

It is also the case that solving issues is much easier when the situation is understood and evidence presented, especially if this issue is associated with an area outside the contact center’s control, and interdepartmental politics have to be considered. Agents may give some indication if they see something happening in recent calls, but that does not provide enough information to act upon. Businesses will find it difficult to justify changing a whole campaign because an agent said that he had two customers struggling to understand it. Customer contact analytics helps to find out whether these issues are taking place across the entire call volume, and allows businesses to quantify and prioritize issues.
MULTICHANNEL & INTERDEPARTMENTAL IMPROVEMENTS

Everyone connected with the contact center industry has always known that there is huge insight and knowledge held within the operation and its agents, but which has never before been quantified or acted upon by the wider business.

Customer contact analytics offers the ambitious business the greatest potential for improvements in business processes, but there is a great danger of underachievement with so many departments and divisions potentially involved.

In the course of researching this report, we have found that the marketing and website departments are the non-contact center areas most likely to be benefiting currently from insights about customers’ views, but there are also examples of how delivery, provisioning, billing and even warehousing departments have learned from the analysis of customers’ experiences in the contact center. For example, tracking customer comments and outcomes after the advent of a marketing campaign can mean the difference between success and failure. Messages that are incorrectly understood can be identified and altered quickly before the contact center becomes swamped with calls about the issue.

The quality of insight and its actionability is totally dependent on a swift reporting process, simple yet rich intelligence, the ownership of process improvement at senior level and before/after comparisons to prove success. Cross-department rivalries or poor communication are a real risk to this.

Surprisingly, considering the rapid rise in multichannel customer contact over the past few years, few businesses are as of yet taking text analytics - around email, web chat and social media - as seriously as audio. In theory, multichannel analytics can analyze any source of text using the same underlying methods and tools, so that audio transcription and email transcription can both be mined to give business insight.

Solution providers report that a few businesses include web chat in their analysis, but as dedicated teams in large operations will tend to handle this, and volumes are relatively very small, this is far less importance than analyzing audio. Some solution providers point out that often a business will not know with whom they are conversing in a web chat, so it is much more difficult to pull in other relevant data that would provide detailed analytics and insight.

However, vendors report that some clients are asking how they can extract more information from customer interactions, not just for the contact center’s use, but for business data analysts and financial analysts as well. Another future trend that is broadly agreed upon is that customer contact analytics will be merged into the wider ‘Big Data’ arena, with the insights being beneficial for the commercial, financial and operational sides of the business, as well as the customer contact division.
CUSTOMER SATISFACTION ANALYTICS

There has been a great increase in customer satisfaction surveys in recent years, with the widespread uptake of Net Promoter® being a good example of companies' desire to learn what their customers actually think about them. However, research has shown that a 'satisfied' customer isn't necessarily a profitable or loyal one, and the results of customer surveys, particularly the written or telephone-based variety (the latter of which, despite its limitations and expense, is still seen as the best method), are carried out at a time when any feelings about the original interaction may have changed or dissipated, are prone to inaccuracy, delay and lack of detail.

With all of the methods of customer surveys, the questions are fixed in advance, and if the right questions aren’t asked, the level of actionable insight is low. In many cases, a business might know that x% of its customers are satisfied, and y% dissatisfied, but it still has no real idea why this is, or even how it will impact upon their profitability. As an alternative to customer satisfaction surveys, customer contact analytics allows a business to gather customers' views within the interaction itself - guaranteeing immediacy and accuracy - and can be applied across 100% of calls, rather than focusing on the outlying 'very dissatisfied' or 'delighted' customers. Furthermore, through widespread and detailed analysis of what the call is about, the type of language or messages used in the call, how the customer was handled, and the eventual outcome, businesses will be able to learn how to improve their customer retention and satisfaction in real-life, by-passing the standard metric (e.g. "83% of customers are satisfied") and getting to the root causes of satisfaction or dissatisfaction and sharing the results with the rest of the operation.

Some solutions use historical analysis of call characteristics, agent behaviors and interaction outcomes to estimate customer satisfaction or Net Promoter® scores on every call, and can also predict the attrition of customers based on what they have said and what has happened within the call, allowing the business to act swiftly. Other solution providers use this type of analysis to help online educators predict which students will pass the course, and which will drop out, meaning they are able to target assistance as required.
**HANDLING EXCEPTIONS**

*Complaints handling*

Complaints are a potentially rich environment for businesses to understand where they are going wrong, and which issues are in danger of turning a customer into an ex-customer. For many businesses, each complaint is dealt with on a case-by-case basis, with little in the way of categorization or structure being put in place formally, and little chance of communicating findings in an actionable way to the relevant department.

Customer contact analytics gives businesses a chance to quantify the reasons that customers complain, identifying the most important factors, assessing trends and spikes, and providing hard recommendations based on every call taken. 6% of UK calls and 5% of US calls received by contact centers are complaints, with respectively 80% and 77% of these being about problems elsewhere in the enterprise (rather than in the contact center). Understanding and acting upon what is driving these complaints will clearly make a huge difference to cost and customer satisfaction.

On an individual-call basis, real-time analytics allow businesses to track words and phrases related to complaints (such as 'supervisor', 'manager', 'complain', 'unhappy' etc.), allowing escalation to a supervisor, or screen-pop to the agent to provide them with a revised script or suggestions of how to handle the call. Emotion detection and sentiment analysis may also be used to identify unhappy or wavering customers within the call, updating supervisors who can then break into the conversation or advise the agent accordingly, or popping suggestions onto the agent’s screen automatically.

*Crisis management and reaction*

A solution with automated root-cause analysis capabilities - constantly looking for anomalies and new patterns - can identify spikes in unusual activity shortly after it happens, alerting specific users to the key issues so as to handle them before they run out of control, damaging brand or customer satisfaction.

*Managing customers at risk of churn*

Using real-time analytics, linked with a company's own CRM systems, agents can be provided with up-to-the-second advice on how to handle customers identified as being at risk of churn, including linking what the customer is saying on the call back to the transactional model in order to update the best offer available for that customer. Some businesses use customer contact analytics to identify phrases or behaviors that indicate potential likely cancellation, but protect their profit margins by making sure that agents are only offering incentives such as money-off coupons at appropriate points within the conversation, to those customers that are at risk of churning. Integrating speech analytics with desktop analytics allows CRM information such as the value of the customer to be added to the decisioning engine, providing extra accuracy and confidence that any offer made will be the right one.
Case Study: Better Agent Coaching with Speech Analytics

It has become standard practice for companies to record all customer conversations that take place in their contact centers, but traditional quality monitoring provides only a limited view of what is actually happening on customer calls. Using speech analytics, British Gas is able to analyze and search 100% of recorded calls to drive service excellence and increased revenue across multiple centers and thousands of agents.

Speech analytics has completely transformed how supervisors at British Gas analyze data and provide feedback to agents. Jason Gingell, Senior Business Analyst at British Gas, explains:

“Let’s say we start with two agents, Annie and Robert, and we can see their respective sales conversion rates: Annie’s at 2.5% and Robert’s at 1.9%. If the target sales conversion rate is at 2.2%, it appears clear that Annie is doing better than Robert. At a traditional review, we might see Annie getting continued encouragement, while Robert is told that he needs to do better. With speech analytics, however, we can now take a look at some additional metrics, such as how often Annie and Robert are actually promoting – or trying to sell. With this information, a much more helpful conversation can be driven. If, for example, Annie is promoting 60% of the time, while Robert only promotes 5% of the time, we can use this information to calculate how effective each agent is (of the calls they promote on, what percentage are converted). Now, we see that a much different conversation needs to occur – Annie’s sales effectiveness is 4.2%, while Robert’s is 38%. Annie likely needs some coaching on her sales method and we want to encourage Robert to promote more because he is very good at it."

British Gas was able to use the effectiveness metric to gain significant insight into how their agent teams were performing. What the company found was a much stronger link between agents who were the most effective and agents who were the best converters, as opposed to those that just promoted the most. Their top sellers were not the people that were asking the most, but the people who were best at identifying and taking the right opportunities.

The most effective agent group in the company had nearly double the conversion rate of the group that promoted the most. The most effective group also saved on average 194 seconds (36%) on their Average Handle Time. By gaining a clearer understanding of sales effectiveness with speech analytics, managers and supervisors are now driving the right performance conversations with their agents and increasing sales conversion rates.

www.callminer.com
Customer contact 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. There is also the very realistic possibility that while an analytics solution will 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.
DRIVERS

Fine avoidance

The US is a potentially-litigious market, and companies there are very aware of the risk of ruinous lawsuits, so a solution that goes some way to guaranteeing compliance has enjoyed a good audience. For example, debt collection firms have to read a 'mini-Miranda' statement on each call, identifying that they are a debt collector and that information gathered in the call will be used for collecting the debt. Failure to do so can easily incur significant fines, and both post-call historical analysis and real-time monitoring may be used to ensure compliance.

While analytics solutions have certainly been successfully used for regulatory compliance, there is an increasing interest and use of the solution for internal compliance purposes: adherence and compliance to script. For example, a business that has identified the most successful terms, characteristics and behaviors for increasing sales conversions or debt collections can use real-time monitoring to check the agent is using the right terminology on the call.

Cost reduction through automating QA

Solution providers comment that cost reduction is often the initial driver for investigating customer contact analytics, particularly when looking at automating the QA process, as contact centers look for an alternative to making decisions based on minimal data, and monitoring quality manually and patchily.

By monitoring and categorizing 100% of calls, only the most relevant can be passed through to the supervisor, greatly reducing the amount of time, and in some cases headcount, required to carry out QA. The resulting insights into individual agent’s performance, and business processes in general, are of a far higher standard than is possible through manual QA processes. Automated QA that focuses on specific call categories can also speed up the improvement cycle by automatically selecting personalized eLearning assignments for agents.
Improved profitability

Customer contact analytics has a provable ROI even for smaller businesses that carry out a lot of outbound, revenue-focused work, such as sales or debt collection. Quite apart from any regulatory need for script compliance, analysis of the sales techniques and terminology used by those identified as the most successful agents can be shared amongst the agent population, with either real-time monitoring or post-call analysis ensuring ongoing compliance.

Analytics can also be used to identify those customers who are most at risk from churn or contract cancellation, based on historical analysis of calls with similar customers, linked with metadata including customer segmentation. It is also possible to dig up the reasons for the different sales conversion rates between agents, by analyzing many more calls than would be possible in a purely manual process. As was shown earlier, sales conversion may be as much a matter of correctly identifying a sales opportunity, as it is about being an effective and persuasive sales person, and analytics of 100% of calls allows managers to understand where their agents’ strengths and weaknesses are, and to deliver the correct training or feedback.

Improved operational efficiency and reducing cost to serve

As was shown in the previous section, customer contact analytics is being used to improve first contact resolution rates, reduced call transfer rates and lower average handle time.

Solution providers note that some of the most sophisticated users of analytics have evolved to optimizing handle time, rather than simply reducing it. That is to say, they investigate the causes of longer calls, weighing up the profitability or any other positive element within each segment of the call, and aim to minimize the time spent on any part of the call which does not add value.

Understanding root causes offers businesses huge opportunities to improve their efficiency and effectiveness, such as:

- understanding any failures in cost containment processes, e.g. why does self-service not work?
- improving first call resolution rates, and reducing unnecessary callbacks
- microcategorization of elements within the call, which, when linked with desktop analytics and metadata, can identify those parts of the call which are most profitable and crucial to success
- identify the reasons that customers are calling, and see if some of these calls can be avoided without damaging profitability or the customer experience.

Some solution providers note that while the voice of the customer/customer journey analytics will almost certainly be a major use of this solution in the future, many current implementations are as yet based around activities where ROI measurement is more immediate and easily understood, particularly agent and contact center performance KPIs.
**Optimizing the customer journey, and business insights**

There is a great deal of enthusiasm and belief among solution providers that the long-term usage of customer contact analytics will be to improve the customer journey, one of many business process improvements enabled by the complete understanding of what is happening each step of the way, whether within the customer interaction cycle, or through one of the many processes kicked off 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 agent may not notice a trend that something new 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 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 is a likely use for analytics.
INHIBITORS

As not all customer contact analytics projects are the same - using different types of technology to address specific business issues - it is not the case that there are one or two easily identified inhibitors to implementation. However, most come into one or more of the categories: cost; complexity; business value; and change management.

Cost

There is a widespread belief that customer contact analytics is an expensive option. There is more detail in the following section on return on investment that shows the type of expenses that businesses should be prepared for, and would do well to bear in mind the total cost of ownership, as certain projects may do better with ongoing professional services being included. Certainly, the cost of analytics is not just about software licenses.

There is little consistent message from the vendor community as to what ongoing costs might be expected. Some aim for customers to become self-sufficient as soon as possible; others offer ongoing support and upgrades as part of a monthly subscription fee; some state that some projects may be extremely complex, and will require a considerable amount of expertise - whether in-house or through a managed services approach - in order to maximize return on investment.

Quite simply, there is no ‘typical price’ for customer contact analytics.

As such, solution providers offer various options of pilots and proofs of concept based around delivering tightly defined results in a specific area, at a fixed cost, as well as various real-life ROI calculators. Most note that proving cost savings through QA/QM improvement is easier than through business intelligence, although the improvements in profitability for the latter are potentially much higher.
Complexity

A major inhibitor to uptake is a belief within the company that their environment is not yet ready for customer contact analytics, in that they may still not have a reliable recording environment or an optimized QM or QA process. Some potential customers want to improve their recording environment, including having stereo recording and full metadata, and if the telephony system is at end-of-life, this can also delay a decision.

As analytics is not a simple plug-and-play application, there can be frustration with understanding where to start. With other, potentially more urgent projects taking up IT resource, it is easy to let initial enthusiasm and vision drift to one side.

Solution providers are becoming better at hiding the complexity of analytics, improving the presentation layer (using ‘wizards’ or simple text entry options to write queries, for example), without losing the power and functionality, and this democratization of customer contact analytics is likely to encourage greater uptake and usage.

Concerns over business value

Some businesses consider that their existing call recording and manual quality monitoring processes are sufficient, and fail to understand the potential business value of customer contact analytics. In such cases, it is possible to demonstrate how automating existing processes can improve quality and performance, while reducing the time and cost necessary to carry out QA/QM processes, and in fact this is one of the major initial purposes that analytics solutions are used for.

However, for an organization to make an investment in customer contact analytics where the end goal is improving business processes and finding out what is sub-optimal in the customer journey, proving business value to everyone’s satisfaction can be extremely difficult: trying to quantify the unknown is by its very nature impossible, and requires something of a leap of faith.
Change management

Solution providers and successful users of analytics solutions point out over and over again that analytics is not a self-contained solution: it identifies the areas in which businesses can improve their agent’s capabilities, their business processes, their customer’s experience and their contact center performance.

Customer contact analytics is a change enabler. Whether a business has the will or capability to act upon the insight that analytics can give them is not a matter for software companies, but something for the business to address itself. This is particularly the case with wider business insights, which are likely to cross over several departments and ‘fiefdoms’. Analytics can open a can of worms. Perhaps the greatest challenge for organizations is to be able to manage the change that analytics can demand: does it have the right people and attitude; is it willing to act; is there a person with the responsibility and enthusiasm to do what needs to be done, regardless of where it takes them?

The choice of whether to implement customer contact analytics should not be left to the IT department, or even the business users, except perhaps in clearly defined cases of QA automation or compliance monitoring. Solution providers are beginning to offer executive-level consulting programs that help companies to structure their processes and strategies to take advantage of the findings of analytics, and before any implementation takes place, businesses should try to anticipate possible insights and outcomes in order to prepare for change.
ESTIMATING ROI

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 contact 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 contact 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 pounds 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. Vendors’ own estimates of the time taken for the solution to pay for itself 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. For example, an insurer 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.

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 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.

END-USER QUESTION #1: WHAT APPLICATIONS OF CUSTOMER CONTACT ANALYTICS ARE THE EASIEST TO PROVE RETURN ON INVESTMENT FOR?

Since contact analytics monitors and scores 100% of agent interactions automatically, companies can realize ROI very quickly by eliminating costly outsourced QA contracts or reducing internal QA headcount. Longer term, contact analytics enables better performing agents and more efficient contact centers. Cost savings from automated call dispositioning, reduced silence time and shorter calls, and increased first call resolution can all be tied back to contact analytics.
In the late 1990s, data warehousing was a big growth industry, especially in sectors such as retail, where the widespread usage of customer loyalty cards gave huge amounts of data about customers, their buying patterns and preferences. However, getting the data into storage was not the difficult bit: the greatest value came from being able to identify and analyze the relevant and insightful patterns within these data, through data mining. In many cases, the reality never lived up to the hype, as the analytical capabilities of data mining tools and businesses’ ability to use them effectively did not match the ease with which the data warehouse was filled in the first place.

Customer contact analytics solutions are similar to the data warehousing and mining applications in as far as they analyze huge quantities of data and identify important and insightful patterns in caller and agent activity. Hence, speech analytics also called audio mining, and text analytics, text mining. (It should be noted that some analytics solutions act in real-time, so the analogy is not quite exact). However, unlike the gap in functionality between data warehousing and data mining that we saw a decade ago, analytics solutions offer a proven and insightful option to release the customer value that is stored in these enormous quantities of information: insight about the customer, the agent, the business processes and the products and services that the business sells.

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 at its zenith. Significant improvements can be 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 reports. 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 potential impact upon the cost, revenue, agent capability and customer experience that is possible through analytics is perhaps unprecedented.

Of course, it is not enough to plug in the technology and wait for results. The most important element to getting the most out of customer contact analytics is to use the application properly: ask the right questions, listen to the right calls, make the right decisions and get the right people to support and act upon findings.

Please note, that while the terminology ‘customer contact analytics’ is used within this report, the majority of implementations in usage are currently focused upon speech analytics. The new terminology is used to encourage readers to think of analytics in terms of its wider potential, rather than focusing entirely upon what is happening today in most analytics implementations.
THE ELEMENTS OF CUSTOMER CONTACT ANALYTICS

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 with high accuracy and completeness based upon the occurrence of those phrases, as no data is lost in conversion)

- **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 and web chat. 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, 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

- **Discovery**: requiring a transcription-based solution, analytics will dig 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.
Most customer contact analytics solutions use speech engines that are either phonetic or speech-to-text/LVCSR (Large Vocabulary Continuous Speech Recognition), also known as ‘transcription-based’.

In LVCSR, the call is transcribed into text in order for analysis to take place, and depends upon a language model and dictionary to identify words correctly. Unlike phonetics-based solutions, LVCSR does not require predefinition of words to search for as the content of calls is available in the index. Transcription processing is considerably slower than phonetic indexing (usually in the region of 4-20 x real-time for LVCSR, vs >1,000 x real time for some phonetics-based systems), but the search process is far quicker. It is generally accepted that 60-70% accuracy in word recognition is about average. This method allows companies to retain the entire content of calls, not just initially specified keywords and phrases, and is generally thought of as best for root cause analysis, and identifying clusters of terms that occur together, giving a starting point for deeper analysis.

Phonetics-based applications - which look for defined sounds or strings of sounds - attempt to match these sounds to target words or phrases in a phonetic index file. The phonetic indexing process converts the audio into symbols that represent the audio and the identification of issues relies upon the predefinition of the terms to search for. The phonetic search process leverages an acoustic model tuned to the specific language, with the search terms converted into phonemes and returns relevancy-ranked results. In circumstances where new phrases or words are frequently being used in conversations - for example, in retail, where new products may be emerging all the time - a phonetics approach means that analytics user can just type in the name and it can be searched upon. Using a transcription approach, the user has to add new words to the dictionary, and reprocess the audio, which can be time-consuming and may require professional services.

However, if the system accurately identifies a key word, there is no guarantee that it will be used in the correct context (for example, the word "website" may not just refer to a company’s own site, but to a competitor’s or something else entirely), or will be the right word (e.g. it may be a homophone - reed/read - or homonym bank / bank). Phrase recognition (such as ‘the website doesn’t work’, or similar) is used to alleviate this and reduce false positives, putting the words into a context. The longer the phrase, the more accurate and unique the results will be. Searching on a single word will bring back many more results, which can risk lots of false positives unless the word is very distinctive, like a competitor’s name, for example.

Solution providers that offer analytics based upon a phonetic speech engine emphasize its usefulness and speed where customers already know the type of words and phrases that they are looking for based on their business needs, and not having to identify the right words in advance to put into a language model means that unknown words and phrases can be found quickly, uncovering trends or events that are relevant to the business. However, a different query will require searching all the data again. Many vendors have significant experience with specific business sectors and call types, and can offer useful advice on how to maximize the volumes of data available for analysis along vertical market lines, also
pre-packaging typical words and phrases that are used in specific instances, so that their customers can get off to a quick start in using the application.

There are also solutions where a phrase-driven direct speech recognition engine recognizes entire phrases within recorded calls without first converting the speech into text or phonemes. This approach combines speech and business concept recognition by directly recognizing the phrases spoken during the conversation and comparing them to the phrases that are often found in these types of call (sales, complaints, etc.), or those that have been defined by the client, for example in the case of compliance or scripting which will support a real-time response. As calls are not recorded within this method, searching is not possible, so transcription or phonetic indexing is usually carried out on these calls as well.

Increasingly, solution providers are offering dual phonetic and transcription-based systems, in order to give their customers the best of both worlds. Although these solutions may be referred to as hybrid, the reality is that they use both methods in order to benefit from phonetics’ rapid identification of key words and phrases, while allowing in-depth discovery and root cause analysis by use of the transcription method. One possible way to use this is to analyze 100% of calls quickly with phonetic indexing, categorizing and viewing trends, then transcribing the calls that are identified as being of particular interest in order to conduct root cause analysis, without having to transcribe 100% of calls (which can require many servers in a high call volume environment).

Businesses should consider the most likely and frequent uses of the analytics solution while deciding upon a vendor. If they are likely to be searching the information many times a day as part of business intelligence or process improvement, then transcription may be preferred as searching is quicker. If the business will be processing large amounts of audio but searching it infrequently, for example in the case of evidence production or proof of compliance, then phonetics may be a more appropriate choice.

However, businesses should be aware that the speed, accuracy and precision of customer contact analytics technology is continually improving. Even amongst vendors, on both sides there is broad agreement that transcription and phonetics both work, and that they will both be around for quite some time to come. System integrators and consultants that implement both types of solution state that accuracy levels and phrase-finding capabilities are similar for each type of technology, and that both are able to provide historical analysis and reporting. There is also consensus that the major issue is not which flavor of analytics solution to choose, but the organization’s ability to deliver business change based on the insights that come out of whatever customer contact analytics solution is chosen.
END USER QUESTION #2: *WE ARE WORRIED THAT WE MIGHT BE LEFT WITH OBSOLETE TECHNOLOGY IF WE MAKE THE WRONG CHOICE BETWEEN PHONETICS AND TRANSCRIPTION-BASED SOLUTIONS. WHICH ONE IS BEST?*

Both technologies begin working the same way: by identifying the sounds in audio and converting those sounds into phonemes, the basic units of communication. Phonetics engines stop here, however, while transcription engines take the extra step of applying a language model to the phonetic index. Transcripts are much easier to work with than phonemes – searches are faster and analysts can preview the conversations and identify trending topics without guidance from a predefined list of terms. Ultimately, the final decision comes down to looking which technology is the best fit for solving your business problem in terms of cost, value, and manual effort.
MEASUREMENTS OF ACCURACY

Speech-to-text solutions are measured by the word-error rate: how many words are incorrectly identified? A speech-to-text transcript of a conversation can appear wildly inaccurate to the reader, yet will often provide enough accurate reference points and keywords upon which to perform complex and insightful analysis. Potential customers should be aware that there is far more to a successful speech analytics solution than getting close to 100% accuracy for word recognition.

Key measurements to understand, relevant to both phonetic and LVCSR solutions, are made up of precision rate (or accuracy), and recall rate (or detection):

- **Precision/accuracy**: if a search returns 10 items, with 7 of these results matching the search term, the precision rate is 70%.

- **Recall/detection**: if there were 100 instances of the phrase or word, and 60 were returned, the recall rate would be 60%.

If a solution has a high recall rate, but low precision rate - so that it identifies all instances of a phrase or word, but also a great many incorrect results - it is described as having a high number of ‘false positives’, which can be a particular problem for real time monitoring, where messages to the agent’s screen or process initiation can be triggered automatically by the solution.

Phonetic approaches will tend to have high recall rates, as there are many phoneme sequences they can be matched, but with correspondingly lower precision. Transcription will tend to have higher precision since searches are more likely to contain the actual words or phrases that were said, but may have lower recall rates due to word recognition errors.

The balance between precision and recall depends on what the analytics is being used for. If businesses want to find what is being said about a particular type of call, such as those mentioning the word “website”, it does not matter too much if a few are not identified, meaning that lower recall rates can be traded for higher precision rates, thus reducing the need to filter out false positives.

If there was a case of fraud detection or evidence production, which required every instance of somebody’s name to be identified, then recall rate would be dialed up to maximum so as to minimize the chance of missing any matches. Solutions can be set at a certain confidence level (i.e. confidence that there will be no more than x% of results as false positives or negatives), depending on the business need, as some issues, such as compliance, require very high confidence levels to be maintained.

When considering which solution to implement, customers should ask not only about the accuracy of the solution, but also about the recall, precision or completeness rates.

The call recording environment also has a significant part to play in these results, as digitally-recorded, stereo/dual channel recordings, or software-enabled speaker separation will provide more opportunities for the speech and analytics engines to identify words and phrases correctly.
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”), 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.

For some businesses, real-time 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 can be used in many ways:

- monitoring calls for key words and phrases
- alerting the agent or supervisor if pre-specified words or phrases occur
- offering guidance to the agent on what to do next, bringing in CRM data and knowledge bases to suggest answers to the question being asked
- escalating calls to a supervisor as appropriate
- detecting negative sentiment through instances of talk-over, negative language, increased speaking volume etc., that can be escalated to a supervisor
- triggering back-office processes and opening agent desktop screens depending on call events
- 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.

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1. [http://www.oxforddictionaries.com/definition/english/analysis](http://www.oxforddictionaries.com/definition/english/analysis)
The speed of real-time 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. It is vitally important however not to get carried away with real-time, as there is a danger that businesses can get too enthusiastic, and set alert thresholds far too low, resulting 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 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 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.

**END USER QUESTION #3: WHAT ARE THE CHALLENGES INVOLVED IN SUCCESSFULLY USING REAL-TIME ANALYTICS? WHAT DO WE HAVE TO PUT IN PLACE TO ENSURE THAT IT WORKS OPTIMALLY?**

All that is required to implement real-time monitoring is a desire to do so, but it’s very important to first have a clear understanding of what problems you are trying to address. Often times, deploying post-call analytics is more appropriate, since real-time monitoring is focused primarily on alerting and course correction during live calls. Post-call analytics is a better choice for companies that wish to evaluate overall agent performance, understand contact drivers, and gather business intelligence.
In businesses with multiple global operations, customer contact analytics solutions will of course require different searches and dictionaries for each language, but it is possible to unify reporting across languages if required.

If a business has multiple contact centers speaking the same language but with very different accents (for example UK English and US English), it is possible to use the same language model. However, for accents which are very different and has its own cadences and rhythms - for example, Indian English - a different language model may be required, although all the audio can be analyzed centrally within the same application.

**END-USER QUESTION #4: OUR CUSTOMER BASE HAS MANY DIALECTS AND ACCENTS, AS WELL AS DIFFERENT LANGUAGES. HOW DOES CUSTOMER CONTACT ANALYTICS HANDLE THIS, AND DOES WORD AND PHRASE RECOGNITION IMPROVE OVER TIME?**

CallMiner uses specific language models that are tuned according to different dialects and accents, and a word wizard to select words that reduce the rate of false positives. We also offer broad match and aliasing technologies to help improve accuracy. No speech analytics system will ever be 100% accurate, but advanced analytics systems offer sophisticated categorization capabilities which can identify more complex language patterns and are significantly more powerful than simple word or phrase spotting.
THE IMPLEMENTATION AND USE OF CUSTOMER CONTACT ANALYTICS

PRE-IMPLEMENTATION: SELECTING A SOLUTION

By the time that vendors are invited to pitch for any work, the business should have a clear idea of what they want any customer contact analytics implementation to achieve. At this stage, discussions with prospective solution providers can begin, and will look at the solutions’ capabilities, proving ROI, costs, IT resources, deployment models and the practicalities of how analytics will change operations.

It is vitally important even at this early stage to have a plan in place to deal with any insights and recommendations that the analytics process may create. Solution providers and consultants are in full agreement of the necessity to have a ‘project champion’: someone of sufficient cross-departmental seniority, vision and gravitas to carry out necessary change. Such a person is probably already in high demand, yet businesses that want to gain the most from analytics need to find a way to get that person involved.

Unlike some other technology implementations, analytics requires more face-to-face time with solution providers, and although many vendors stated implementation times might be a matter of weeks, the reality is that the most successful projects will require considerable amounts of planning effort on both sides upfront in order to understand what is achievable, and measure its success.

As customer contact analytics is becoming an increasingly important and integrated part of the overall workforce management optimization suite, a considerable proportion of businesses find that they are taking analytics as part of a wider solution.

While the general consensus is that it is wise to take one step at a time with analytics, businesses should also stretch their imaginations to consider how the solution might be used in the future. The scalability of the solution is certainly something to consider: currently, many businesses will keep calls for 90 days or so but there are indications from the market that there is a desire to carry out longer-term analysis. For example, data analysis over a 13 month period allows year-on-year comparisons of contracts and annual events to be made.
INITIATORS AND THE PROJECT CHAMPION

There is no generally-agreed job role that initially identifies the potential requirement for customer contact analytics, as any deployment depends upon the nature of the business issue being addressed. Lots of budget is held with marketing, website or customer experience teams, rather than at contact center level, and these teams are now seeing that the contact center is a big part of people's experience of dealing with a company.

Some of the relevant job titles for each implementation type include:

**Compliance:**
- Legal
- Head of Compliance

**Agent performance and QA improvement:**
- Contact center manager
- QA team
- Training team

**Contact center operational improvement:**
- Head of Contact Center / Customer Service

**Business intelligence and Voice of the Customer:**
- Marketing
- Head of Insight /Transformation
- Head of Customer Service
- Customer Experience Director
- C-level

**Small businesses:**
- CEO/COO.
In all cases, although the IT department tends not to be a key initiator, solution providers are vehement that their buy-in is needed at all stages of the process.

All solution providers agree that having a senior and empowered contact within the business who knows what they want to achieve through customer contact analytics is vital to the success of the project. The champion must have a strategic view of what analytics can provide, as well as understanding the operational and technical requirements of the contact center and IT teams, and be able to deliver cross-functional business change.

It should also be noted, that post-implementation, well-trained and empowered supervisors, trainers and coaches are also key to getting and maintaining a positive outcome from the use of the solution.

In many larger organizations, a new role – perhaps called “Customer Experience Director” or “VP of Customer Care” has emerged, and it is this type of job role that has the responsibility, knowledge and credibility within the organization to drive both the use of analytics, and more importantly, any cross-departmental changes identified as necessary by the analytical process.

Once the project champion and any cross-departmental working groups have been identified, along with a clear and realistic understanding what any implementation of analytics might be expected to do, businesses will then talk to vendors to understand if and how they can help, and to get further assistance with developing their business case, including return on investment.

Some milestones in the project include:

- Identify interested cross-functional parties in the organization and get a senior project champion
- Choose a specific area of improvement and benchmark it (baseline analysis). This may be something to consider in trial mode - as it is manageable, quick to identify, not reliant on other elements or affecting them, so a fair before & after measurement is possible.
- Input from relevant departments into deliverables, explaining and agreeing what they have to put into this themselves
- Create a vendor longlist and have informal discussions with them
- Consider technical constraints and internal cultural preferences (e.g. propensity to host vs CPE) and build vendor shortlist / request for proposal
- Selection, including their ability to build an ROI model / proof-of-concept trial for you, plus referenceable sites if required. Check interoperability and willingness to work between incumbent recording vendors and new customer contact analytics vendors. Reference sites using same combination of vendors recommended if possible
- Deployment either as trial or full roll-out.
DEPLOYMENT OPTIONS

Recent ContactBabel surveys found that only 8% of customer contact analytics implementations in the US were reported to be cloud-based, with the figure for the UK being 22%\(^2\). With the Aberdeen Group estimating in 2013 that around one-quarter of speech analytics implementations were cloud-based\(^3\), it seems fair to state with some confidence that most are currently in-house. However, some solution providers comment that multiple-site organizations are more likely to use a hosted solution.

While most solution providers state that the functionality available in the cloud-based solution is similar to that in a CPE environment, there are some issues to consider:

- businesses in the finance and insurance industries are particularly reticent about letting their data offsite, as are larger, high profile organizations
- most CPE implementations have a significant element of upfront capital expenditure along with ongoing maintenance costs. Cloud-based deployments are likely to offer a reduced implementation cost, although some vendors offer SaaS-based pricing options even for CPE implementations
- cloud is usually quicker to deploy
- transmission of call recordings into the cloud is likely to require a large amount of bandwidth, unless calls are being recorded there in any case
- cloud-based deployment does not require any extra hardware.

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2 ContactBabel, “The US & UK Contact Center Decision-Makers’ Guides, 2014 & 2013”
3 Aberdeen Group, quoted by mycustomer.com
Many solution providers will offer a managed service approach to customer contact analytics deployment. This will usually consist of a dedicated analyst or team that will run analysis of a client’s call recordings, and report back on insights and actions required. It will also provide any necessary updates to functionality, checking the health of the solution and the effectiveness of the analysis, and making any changes to topics, reports and general solution tuning.

A managed service approach can be particularly useful for certain businesses or circumstances:

- medium-size organizations may not have the necessary analyst or IT resource to use or maintain the solution
- in case of budget restraint or other internal inhibition, managed services can be a toe in the water to prove the concept and support a business case
- managed services may be used as one-off projects for root cause analysis, which will often lead to a full deployment. Some businesses, especially those in financial services, may use this for fraud investigation purposes and evidence production
- a managed service solution can include ongoing consultancy, which will keep the business at a cutting-edge, rather than allowing alternative business and IT issues to take their eye off the ball
- solution providers emphasize strongly that analytics takes energy and commitment, and it is vital to keep the momentum by reviewing and mapping out new projects and priorities, keeping queries live and relevant to maintain accuracy and build on what has been done before
- a managed service approach can wed the supplier to the customer, keeping the solution provider on their toes and making sure that they earn their money, making sure that the implementation is a mutual success.

Depending on the contract agreed, a managed services solution can include a regular process of automatic subject discovery, caller intent, root cause analysis and improved categorization.

END-USER QUESTION #5: WHAT SHOULD WE CONSIDER WHEN CHOOSING A DEPLOYMENT MODEL? IS THE SAME FUNCTIONALITY AVAILABLE FOR CLOUD-BASED SOLUTIONS AND CPE?

With CallMiner, analytics functionality is the same whether the software is deployed in our cloud or on premise. If analytics is provided as a hosted service then the customer requires only minimal internal IT support to enable integration of the audio. If analytics is deployed on premise then the hardware resides in the customer’s data center and requires the typical infrastructure support required by any on premise application.
THE IMPLEMENTATION PROCESS

In many cases, customer contact analytics is integrated into an existing call recording environment, although some vendors report that a significant number of their implementations are occurring as part of a wider workforce optimization suite implementation. With 13% of UK contact centers, and 21% of US operations that use call recording stating that they are looking to replace it, there are significant proportion of implementations whereby analytics is included within a new recording environment.

Additional hardware in form of servers will be required for audio processing and analysis, the number of which is dependent on the volume of calls and the speed which customers require the analysis to be completed by - a stack of servers might be required for multi-thousand agents and real-time monitoring, whereas a smaller and less process-heavy environment might only require a single server.

PROOF OF CONCEPT AND SOFT-START IMPLEMENTATION

Most analytics vendors recognize the need of the business to prove the value of an investment and will provide a range of options for interested parties.

Many offerings include running a proof-of-concept implementation, where a specific issue or KPI is targeted, analyzed and the results acted upon, providing proof of the solution's ability to deliver ROI, and engaging the business more closely with the solution. Rather than rely on spreadsheets to demonstrate ROI, customer contact analytics vendors are in general an active bunch when it comes to engaging potential customers with a real business issue, as a definite and measureable improvement after a trial period makes a fuller implementation so much easier to sell internally. Such projects tend to last between two and eight weeks. They may be carried out at the customer's site, or the vendor can take a significant chunk of call recordings, analyze them and present the results and recommendations, thus proving the level of actionable insight that such solutions can provide. Many of these pilot projects are either no cost, or low-cost.

The initial, well-defined business case will tend to be either around cost-reduction or revenue-enhancement, depending on the type of business, and larger contact centers will often be focused upon the former due to potential for economies of scale. For example, an operation with a large and inconsistent spread of call handling times might wish to understand why this is happening, with a view to improving it. The proof of concept could involve identifying that longer calls are far more likely to have the word 'charges' in them, which gives the business a point at which to aim. At this stage, vendors will carry out deeper analysis of these types of call - some will process the calls on the customer's site, others at their own facility - and will perhaps find out that customers are confused by the literature about charges being sent out to them, or that information about charges is not easily available on the website, either of which can be acted upon. Such a proof of concept shows that real results can be achieved, and trains the customer how to use the solution at the same time.
In order to prove the success of the initial project, it is necessary to benchmark before and after implementation, agree on the specific KPI or business issue, and calculate any benefit definitely accruing through the implementation. The pilot project is also an excellent place to identify and train people within the organization on how to use the solution and influence change management. Some solution providers also offer ‘Quick Start’ templates based around the needs of specific vertical markets or business issues (e.g. customer complaints, QA), that can be used as-is or be easily customized.

If for some technical reason, a CPE implementation is not suitable at first, some vendors offer a managed service solution, and although the levels of integration with the user’s systems may not be what the more complex solutions would thrive upon, it serves as a base to introduce the benefits of speech analytics, and to train users in how to get the best from it.

MULTIPLE-VENDOR ENVIRONMENTS

A potentially thorny issue occurs when a new customer contact analytics solution is to be implemented in a different vendor’s recording environment.

Some recording vendors will provide data extraction tools which will export the audio data from the live production environment without endangering it (a risk that is viewed as being at various levels of importance within the speech analytics vendor community, depending on who is speaking), but this comes at an additional cost per seat and should be considered in any study of total cost of ownership.

Both solution providers and end-users have commented that getting the incumbent recording vendor to provide unencrypted audio data to the speech analytics vendor (which is often a competitor) can be a struggle in some cases and that this can cause delay, although there is usually a solution found in the end. In reality, there is little motivation for an incumbent call recording vendor to make things easy. Potential customers would be advised to talk frankly to both potential speech analytics vendors and incumbent recording vendors before decisions are made, and to gain firm assurances about such matters.

In some cases, the incoming analytics provider will also implement their own recording solution, which is used only for analysis of calls. Running two recording environments side-by-side negates the need to touch the recording production environment at all. In some cases, analytics is simply a part of a larger workforce optimization suite implementation, which would include recording, performance and quality management, workforce management and text analysis, as well as speech analysis.
END-USER QUESTION #6: IS IT DIFFICULT TO IMPLEMENT CUSTOMER CONTACT ANALYTICS IF A RECORDING VENDOR IS ALREADY PRESENT? IF SO, HOW DO WE HANDLE THIS?

This is not true. The CallMiner multi-channel contact analytics platform is agnostic to the source system that captures data, supporting integration with all market leading call recorder, chat, and email systems.
TIMESCALES

The roll-out of the customer contact analytics phase is said to be swift: for phonetics-based solutions, a 1 or 2 week technical implementation is then followed by period of 4-6 weeks after initial roll-out spent in fine-tuning the base model. Larger and more complex implementations, including those using both the phonetic and speech-to-text elements, may take longer, with 2 weeks to set up the servers, and perhaps 6-12 weeks to carry out the initial implementation, and carry out category and topic creation as well as reports and dashboards. Some vendors provide pre-built categories as a part of their baseline solution, which speeds up the implementation and ROI.

Analytics implementations will benefit from further review and tweaking further down the line. Of course, these vendor estimates assume an existing technical environment that does not require any hardware or software upgrades, and the incumbent recording vendor is open-handed with providing access to the recordings, if they themselves are not the incumbent. In the case of situations where analytics is being put in as part of a wider workforce optimization suite, implementation times will of course be longer. There are estimates of 6 to 8 weeks to make sure that the recording element can feed analytics, and to implement the wider workforce optimization package, before the analytics element can be addressed. Some businesses may also implement desktop data analytics beforehand, which will take 1 to 2 weeks to tag data to recorded interactions.

Interestingly, consultancies and system integrators are likely to estimate longer timescales for full implementation, compared to software solution providers, as they are likely to be providing professional services long after the software has been implemented, and point out that it can take many months of familiarization and fine-tuning before the full benefits are reaped.
Key activities for an implementation may include:

- Initial assessment - a non-technical, business-focused discussion with business champions around the existing processes and the goals that the business would like to achieve, matched with the capabilities of the speech analytics solution
- Operational assessment, where the processes of the contact center are observed, and system definition to assess the existing technical environment
- Preliminary targets and ROI estimates created based on baseline metrics
- Call categorizations, main dictionaries and reports are set up
- Out-of-dictionary additions and root-cause analysis, review of initial results
- Ongoing training of key staff in use of solution
- Review of key business, operational and commercial aims set at the beginning of the project
- Hand over to business and full solution activation if not done so already
- Post-implementation support - opportunity to quantify cost savings or other metrics, including review of trends.

As analytics is an ongoing, learning process, businesses should also bear in mind that there will need to be a period of training both for IT and business users, which will probably need to be repeated and revisited over time as the focus of the analytics solution changes.
POST-IMPLEMENTATION: USING CUSTOMER CONTACT ANALYTICS SUCCESSFULLY

Once the customer contact analytics solution is in place, what then? Businesses will have run through a proof-of-concept trial aimed at understanding and improving one discrete process or element, but after this, the flexibility and power of analytics can be fully explored.

Common pitfalls that businesses make with customer contact analytics implementations include:

- failing to engage all relevant stakeholders
- not having a project champion with the vision or capability to carry out cross-departmental change or carry out internal PR to raise awareness and enthusiasm
- failing to define the scope of the project, or benchmark the changes in relevant processes before and after implementation. Businesses should start slowly, and look for the quick wins so that they can familiarise themselves with the solution, and point to a track record of success using the solution when having internal debates
- choosing success criteria which are not measurable
- choosing projects that do not deliver significant business change
- treating this as an IT project rather than getting business analysts to define the objectives and follow through on project delivery. Analytics is not just about having people who can create queries and produce reports: they need to be able to make recommendations for changes within the business as well
- failing to put change management processes in place that are appropriate in size and scope to the insights emerging from the analytics solution
- not having the in-house expertise available to take the solution beyond basic functionality. The use of managed services could alleviate this
- setting unrealistic expectations and over-committing to a ‘Big Bang’ deployment, before having had some measurable and definite success in a smaller and well-defined area, which would also have the benefit of introducing the business to the potential benefits, as well as teaching users how to get the most out of the product in a low-risk environment
- not understanding and communicating internally that analytics can be a disruptive process, the end result of which may well be to change the status quo
- choosing the wrong solution for the business process that is being solved. Complexity, functionality and ease of use should be matched to the issue in hand. For example, using a desktop data analysis module may be a more appropriate and cheaper option than speech analytics in some cases
- once the initial projects and goals have been achieved, it is important that momentum is not lost. Analytics requires dynamism and a continual revisiting and tuning of the solution, as the business environment is changing all the time.
END-USER QUESTION #7: WHAT ARE THE MOST COMMON PITFALLS TO AVOID IN IMPLEMENTATION AND WHEN IN FULL PRODUCTION?

The 2 most common pitfalls we see are not having a dedicated analyst/owner of the speech analytics system and trying to do too much at once. In order for a speech analytics program to be successful, it needs the support of a dedicated resource that understands analytics and is involved in the project from the very start. It’s also important to start slowly. Identify and execute incrementally, prioritize objectives, and evangelize the use of analytics. Show success by tackling the “low hanging fruit” first instead of getting bogged down in multiple complex projects.
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, offering dynamic and emailed reports on a regular or exceptional basis to business owners elsewhere in the enterprise.

A couple of examples of the more 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.

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 identify 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.

Some solutions already offer automated discovery, and other vendors state they will offer it in their next release. However, this is an area that will always be improving and becoming more subtle and effective, and which has huge potential benefits for businesses.

Of course, any analysis where the 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 contact 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.
END-USER QUESTION #8: IT IS THE OCCASIONS WHERE THE ANALYTICS SOLUTION MISIDENTIFIES A PHRASE THAT STICKS IN THE MINDS OF THE BUSINESS MANAGERS, AND REDUCES THE IMPACT OF THE FINDINGS. HOW CAN WE BEST PRESENT DATA, AND FOCUS MANAGERS ON THE PROBLEMS THAT NEED SOLVING?

There are several approaches to solve this problem. One way to handle this situation is to simply not show the full transcripts as part of the reporting process, or to only highlight the words and phrases that have a higher recognition rate and have the highest business value. The second solution is to position the alternative in a negative light, for example – admitting that, yes, there are a few mistakes and no system is perfect, but look at all the data available now that were previously inaccessible. Finally, if there is a consistent misrecognition on a specific phrase and there is no business value in that phrase, it can be mapped to the proper name using an alias.
TRAINING AND ONGOING RESOURCE REQUIREMENTS

Initial training

Solution providers offer courses for both technical and operational staff, targeted at specific user roles and responsibilities, including end-user, reporting, performance management, administration, and maintenance. There is often a choice of on-site or remote training. Ongoing support after implementation is standard for the industry.

Some solution providers recommend that there are always at least two or three people who are trained initially, due to job shifts and attrition. It may be the case that customers do not have anybody appropriate on-site to understand how to work with the output, so managed services is a good stopgap solution in this case.

Some solution providers offer packages that include pre-selected phrases relevant to that particular type of business, which means the initial discovery and implementation time is reduced somewhat.

Vendors offering a complete workforce optimization solution may have developed a new quality framework to assist customers to change and optimize their business processes in such a way that will get the most out of their WFO solution, with the analytics solution being one of several key elements.

Ongoing resource

Vendors’ opinions on the requirement for a full-time, dedicated speech analyst differ widely. Some of those offering solutions based on a phonetic speech engine state that an existing business analyst or member of a quality assurance team will be able to handle analytics as well, yet others state that the more a customer can put into the solution (e.g. a full-time speech analyst), the more they will get out of it.

The complexity and sophistication of the solution is only one element to this: of more importance is what the business wishes to get from customer contact analytics - managing compliance and improving the QA/QM process is likely to require less full-time support than an ambitious cross-department project to investigate and optimize business processes.

Vendors comment that centers with under 250 seats may see analytics handled by the existing QA team, those with up to 1000 seats will often have analyst resource in-house already, and super large operations, possibly dotted across several sites will almost always use a dedicated speech analyst.

Requirements for end-user resource depend to some extent on the delivery method: a managed service, by its nature will not require any resources apart from a business-focused liaison contact; a hosted model requires a business owner to specify needs and be able to gain insight from the system; a full CPE deployment is more likely to require two points of contact, one technical and the other business-orientated.
If businesses decide to have dedicated analyst resource, they may come from a specific business unit that is using analysis (for example, collections), the quality management team or an existing analyst function. It has been noted that people with a journalistic, enquiring nature may be best suited for this role, as understanding business transformation is key, rather than being technically skilled. It is recommended that they have a certain seniority within the company so that their insights carry authority.

Having said that, for some solutions, a technical resource may also be required to write queries and create reports although most solution providers are working hard to make the presentation layer easier to use for business users.

Customer contact analysts will write queries, listen to calls, carry out qualitative analysis and communicate and influence departments and business areas. By far the largest amount of time is spent analyzing data and communicating findings elsewhere, with only around 15 to 20% of an analyst’s time said to be spent listening to calls. Of course, the purpose of the implementation makes a great difference to this as well.
THE MARKET LANDSCAPE OF CUSTOMER CONTACT ANALYTICS

THE USERS OF CUSTOMER CONTACT ANALYTICS

The following two diagrams are based on responses from the 200+ respondents to “The 2014 US Contact Center Decision-Makers’ Guide”, the largest ongoing survey of customer contact operations available.

**Vertical market**

Against a virtual ubiquity of call recording, the penetration rates of customer contact analytics are much lower, with only 24% of respondents using it in 2014.

While vertical market figures have been provided, readers should not rely on these as the segmented research base was relatively low for this question.

*Figure 2: Current and future use of interaction analytics, by vertical market*
Solution providers interviewed for this report state that some vertical markets are particularly enthusiastic to implement customer contact analytics:

- Financial services: (compliance in collections and debt recovery)
- Government: (QA / QM improvements)
- Healthcare: (regulatory compliance)
- Insurance: (regulatory compliance)
- Outsourcing: (compliance to contracts; efficiency; sales and retention improvement)
- Retail: (sales improvement)
- Telecoms (business intelligence; QA)
- Tourism (sales)
- Utilities: (regulatory compliance; QA).
Size

The correlation between size and technology penetration rate is very noticeable for customer contact analytics, which may require significant investments. Having huge volumes of recorded calls and a large customer base means that business patterns can be identified more accurately, and any improvements reap correspondingly higher rewards.

43% of respondents from large (i.e. 200+ seat) US contact centers are already using customer contact analytics, with those in the mid-sized sector also demonstrating enthusiasm in the near future, as the mid-market becomes increasingly well catered for by vendors, with cloud-based options being available.

Figure 3: Current and future use of interaction analytics, by contact center size

Many solution providers indicate that there is a minimum size below which the benefits tend not to outweigh the costs. Some put this at around the 100-seat mark – customer contact analytics works best when there is large amounts of data to analyze and draw conclusions from - but some vendors have a cheaper entry-level option for sub-100 seat operations as well (often cloud-based, and with entry-level functionality).
A 50-seat contact center, typically working 6 days a week and open for 12 hours a day can easily produce 9,000 hours or more of audio per month, a volume which cannot be adequately monitored manually, and which is large enough to begin drawing some analytical conclusions from, in order to propagate findings through the wider business. However, customer contact analytics vendors state that the smaller contact centers interested in analytics tend to be sales-focused or debt collection agencies, as improvements in sales conversions or promise-to-pay ratios can make a much bigger difference to profitability than any cost-savings in a smaller operation.

Apart from a 'soft-floor' of around 75-100 seats in the customer service environment, several solution providers have stated that there is not really a typical customer contact analytics customer, with many of the early adopters of customer contact analytics having simply been ambitious to get ahead of their competitors.
COMPANY PROFILE: CALLMINER

CallMiner’s voice of the customer analytics platform automatically analyses contacts across all communication channels: calls, chat, email, and social. Within the analytics solution set, there are various products:

**Eureka:** CallMiner’s flagship multichannel, text and voice analytics solution, which takes a single approach towards analyzing, categorizing and searching, regardless of channel. The solution provides ad hoc search, root cause analysis, data visualization, categorization and automatic QA scoring of calls. Performance insight is delivered through the Eureka analyst application, which provides flexible ad-hoc analysis of customer interactions, with the search and discovery features allowing analysts to find and play back contacts containing certain words and phrases or other characteristics. Eureka also helps determine root causes through topic analysis and automatic outlier identification.

**myEureka:** a direct portal for performance information for agents and supervisors (i.e. non-analyst functionaries) which automates agent performance management by providing direct performance feedback to the relevant operational parties.

**EurekaLive:** CallMiner’s real-time solution, using the same analytical technology to provide QA and alerts in real-time to supervisors and agents, monitoring in-progress calls for the presence or absence of specific language or acoustic characteristics such as escalation attempts, churn language, profanity, compliance scripts, or high emotion. EurekaLive Agent Assistant monitors every live call in real time (within 3 - 10 seconds), offering script compliance monitoring, emotion detection, next-best-action guidance, event alerting, and automated context-driven workflow initiation directly to agents.

**Redactor:** CallMiner Redactor uses speech analytics technology to remove PCI sensitive authentication and cardholder data from incoming call recordings or archives. When PCI-sensitive information such as account numbers or security codes is spoken or identified, the audio is muted or rubbed out, taking call recordings out of PCI scope.

**Interceptor:** CallMiner Interceptor captures voice data packets either within the telecommunications network or the organization’s network. The cloud-based recordings do not suffer from high and multiple levels of compression experienced in some traditional premise-based recorders, and using speaker separation, is able to detect which side of the conversation comes from the agent and which from the customer, meaning that these can be searched, analyzed, and categorized independently for improved analytical results.
Implementation and Customers:

CallMiner has around 100 customers, most of which are based in North America, and are a mixture of cloud and CPE deployments. Referenced clients include British Gas, Pershing LLC, Santander Consumer USA, Bluegreen Vacations and Vodafone. More than half of their clients have very large contact centers (over 500 agents), although they are seeing considerable growth in the 100 to 250 seat range, with a significant minority of revenue in the sub-100 seat sector as well.

Technical implementation takes between 6 and 12 weeks, depending on access to recordings and metadata. CallMiner believes that it is best practice to have a dedicated analyst in the QA department taking responsibility for the speech analytics program and configuring the system for specific business objectives. Automation of quality monitoring and improvement of agent performance are the easiest ways to prove ROI, and after successful projects around these areas, customers tend to become more ambitious in looking for wider ranging opportunities to use business intelligence.

CallMiner is agnostic to the source system that captures data, supporting integration with all market leading call recording, chat, and email systems and popular social networking sites.

Market opinion and strategy:

CallMiner notes that ROI for customer contact analytics is easiest to prove through the reduction in the cost of quality monitoring through headcount (for example, having 40 people associated with QM can be reduced to less than 10 after the implementation of analytics), and improvements in first call resolution rate and average handle times can also be extremely positive. A more accurate agent performance evaluation across 100% of contacts leads to better performing agents and an improved customer experience.

Compliance is often seen as the initial driver for an analytics implementation, although things rarely stop here. For example, while collections contact centers’ initial reason for using analytics is compliance (the FDCPA Act means that 100% monitoring is required), they often then move beyond this to improve their collections efficiency and performance. For example, if some agents sell or collect the most, why is this? Tracking all agents and identifying which behaviors and agents do best can lead to the promotion of best practice throughout the contact center.

CallMiner’s clients are currently mostly focused upon audio, although some do text mining as well (particularly chat and direct social media). ROI is easiest to prove in the contact center environment, and contact center performance improvement is the main reason for implementation. While only a relatively small number of customers use real-time monitoring, there is lots of interest in this, and CallMiner states that real-time agent performance analytics will increase in sophistication, usability and power.
In the longer term, CallMiner sees voice of the customer initiatives, such as predictive churn analysis, as holding the greatest potential value for businesses. Using analytics for business intelligence and process optimization, despite the potentially huge benefits involved, can be especially difficult as it requires numerous departments to work together. It is also necessary to simplify the analytical process, and create ways to get information such as agent performance out of systems with less user effort and training.
FUTURE DIRECTIONS FOR CUSTOMER CONTACT ANALYTICS

From discussions with customer contact analytics vendors, we have identified the areas which most research and development efforts are going into. In some cases, functionality is available today, and it is the capability and sophistication of the solution which will change. However, it is worth pointing out that the relative immaturity of the customer contact analytics market means that for most companies, even using what is available today would be a big step forward.

WORKFORCE OPTIMIZATION

Vendors of full-suite WFO solutions recognize that customer contact analytics is of great potential value to a business in terms of discovery, compliance and business process optimization, but they are also very keen to point out the improvements that the outputs from analytics can offer to other elements of the WFO suite, such as agent performance and training. Scorecards based on 100% of calls rather than a small sample are much more accurate, and support better training and eLearning techniques, and have great potential to cut the cost of manually QAing calls.

By monitoring and scoring 100% of calls, the opportunity exists to connect analytics, quality assurance and performance management, collecting information about, for example, first-contact resolution rates, right down to the individual agent level. Automatic evaluation of all calls means that businesses will no longer rely on anecdotal evidence, and will be able to break the call down into constituent parts, studying and optimizing each element of each type of call, offering a far more scientific, evidence-based approach to improving KPIs than has previously been possible. Solution providers also believe that embedding analytics more closely into WFO is relatively culturally unchallenging (for the QA team at least), in that the operation is automating and improving something that they’ve done for many years. There is, however, an acknowledgement that agents will need to be sold on the benefits of automatic QA of 100% of calls, in order to avoid the appearance of a ‘Big Brother’-like omniscience.
TECHNICAL DEVELOPMENTS

While most long-term technical developments are understandably shrouded in secrecy, there are a few technology-related trends that have emerged from interviews with solution providers:

- there has been, and continues to be a drive towards providing both transcription and phonetics technology within the same solution

- many 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 analytics, as in order to learn from customer feedback and experience, clearly a business needs to know whether it is the customer taking 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

- some solution providers are talking including voice recognition within the solution, so as to be able to prove for compliance and fraud prevention purposes that the person speaking was who they said they were.

EMOTION DETECTION AND VOICE BIOMETRICS

Emotion displayed on calls can be extremely difficult to track accurately and meaningfully, as everyone has their own way of expressing themselves, words and feelings may not match up, or external irritations not related to the topic of conversation may intrude. Some vendors argue strongly that detecting emotion on each call is a useful tool - for example, by passing irate customers to a supervisor - and further developing their ability to detect voice-stress on a call in order to flag these to a supervisor, with some real time monitoring solutions measuring indicators such as speed of speech, volume, use of key word triggers, instances of talk-over or silence, etc.

There is another viewpoint, taken by those that offer solutions based on the analysis of masses of recordings, that says that the real value comes from looking at very large samples of data to identify those agents, processes and circumstances where emotion (often negative) runs highest, and taking into account the outcome of the call as well. While emotion detection has a relatively low profile for many solution providers, there is certainly the likelihood that the sophistication and use of this will increase both in real time and historical analytics solutions.
USABILITY AND DEMOCRATIZATION OF ANALYTICS

Many solution providers have mentioned that they are looking at simplifying and improving the usability of the analytical interface, aiming to get actionable performance-based information out of systems with less effort and training required. Along with new user interfaces, there are widespread efforts to help users build queries, make changes to the system, write their own bespoke reports and interpret the output, trying to move away from the need to have a technical person sitting between the end-user and the solution.

Making the use of customer contact analytics easier for non-technical people will make it more likely that the solution is used by other departments to address some of their own issues, such as hiring and candidate screening, determining which students are likely to drop out of a course, and detecting fraud (whether internal or external), as well as general commercial issues.

REAL-TIME

Real-time monitoring and alert functionality is very much available now, but significant efforts are being made to reduce the amount of time required to process a trigger or event, cutting the reaction time from a handful of seconds (between 4 and 10 seconds tends to be the spread at the moment for most solutions), to getting sub-second response times. Real-time is driven by phonetics-based solutions at the moment, but there is talk about developing real-time transcription as well.
CUSTOMER JOURNEY ANALYTICS

Future customer contact is likely to become along polarized lines: for everyday, mundane tasks, the customer will choose the website or mobile app for self-service, leaving the contact center to deal with those interactions which are complex or emotive for the customer (as well as there being demographics for whom the contact center will continue to be primary). With the website becoming the first port-of-call for many customers, the analysis and understanding of the success (or otherwise) of pre-call web activity is a valuable source of knowledge about how effective the main portal to the business is being, as well as being able to give businesses greater insight into why people are calling. Manually analyzing thousands of web sessions and linking them with specific customers and their phone calls is impossible, so there is a great potential for multichannel analysis. Adding in minor channels such as social media, web chat, SMS and email should make the mix more complex, and more potentially suitable for analysis. It is also certainly worth mentioning that some solutions also analyze the customer’s pre-call use of self-service via IVR, providing the agent with a background on the caller’s recent experience and offering the chance to improve self-service process failures.

Many vendors discussed including social media, email and text chat into the analytics equation, and while many have text analytics within their overall customer contact analytics solution, very few state that there is currently (mid-2014) much appetite within the market for using this functionality to anywhere near the same extent as is the case for speech analytics. This lack of uptake in multichannel analytics may have many reasons:

- the social media channel is often the responsibility of the marketing function within a business, whereas customer contact analytics - being focused on speech at the moment - is usually under the remit of the customer contact operation, meaning that harmonious, integrated analysis across channels is that much more difficult
- for most businesses, interaction volumes for email, chat, social media and other non-voice channels are far lower than for speech, so consequently there is thought to be less value in being able to analyze these
- it can be more difficult to identify customer in non-voice channels such as text chat or casual web browsing, so the depth of insight available may be that much less.
Having said that, most solution providers seem quite definite that multichannel analytics will grow in importance. The vision is not so much being able to optimize customer contact within each siloed channel, nor even being able to monitor the quality of an email or chat agent in the same way that businesses are now using analytics to improve the performance of a phone-based agent. Being able to understand all of the stages along the customer journey - understanding where potential customers drop out; the overall effort that the customer has to put in; the point at which buying decisions are made; the suboptimal points where customers get confused and have to place a call into the business - these are the promises that customer journey analysis makes. There will come a time when all data generated within a business will be able to be cross-correlated to provide insights not only to the customer contact department but also to parties such as marketing, operations and finance, so they have greater insight about issues such as price elasticity and revenue maximization. The ability to prove to senior management that the actions and insight held within the contact center has a distinct and measurable impact on the entire company – and as such is not simply a cost center - is likely to improve its visibility and credibility which should help to create a long-term holistic view and assist further investment.

The ‘tell-me-why’ and discovery modes of customer contact analytics will improve over time as better accuracy and more powerful processing provides richer and more joined-up data for analysis, and the inclusion of non-voice channels show the full picture of customer contact and its intent. There will also be major efforts to link analytics to proving profitability, including identifying “moments of truth” (points at which buying decisions are made, and long-term loyalty can be won or lost), and being able to predict and manage customer churn.

In summary, customer contact analytics is still in its infancy, not so much in terms of penetration rate, but of the sophistication, functionality and level of insight that it currently offers to the business as a whole. There is little doubt that analytics offers the key to unlocking actionable insight, and it will certainly become an even greater area of interest for any organization keen to give itself a competitive advantage by learning more about itself, its customers and its employees.
### APPENDIX: CASE STUDIES

**Figure 4: Case studies provided by solution providers**

<table>
<thead>
<tr>
<th>Solution provider</th>
<th>Customer</th>
<th>Topic area / title</th>
<th>Links</th>
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<tbody>
<tr>
<td>CallMiner</td>
<td>Nautilus Inc.</td>
<td>Achieving Immediate Wins in Contact Center Efficiency and Customer Experience</td>
<td>Link</td>
</tr>
<tr>
<td>CallMiner</td>
<td>British Gas</td>
<td>Driving Service Excellence and Increased Revenue in the Contact Center</td>
<td>Link</td>
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<tr>
<td>CallMiner</td>
<td>Saveology</td>
<td>Continuous Process Improvement in the Contact Center and Beyond</td>
<td>Link</td>
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