THE INNER CIRCLE GUIDE TO SPEECH ANALYTICS

Sponsored by GemaTech

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ABOUT GEMATECH

The Ultimate Live Speech Analytics Solution

Deliver 100% compliance on every call with GemaTech’s new Call Analyzer. Analysis of every call, as it is taking place, provides instant feedback to individual agents, supervisors and managers to ensure that all agents are following their scripts correctly. Desktop prompts are delivered to the agent’s screen during calls reminding them if they have forgotten to say necessary phrases, to achieve first call resolution and to ensure legally binding, FSA compliant, contracts on every call.

Call Analyzer combines the power of speech to text, phonetics and key phrase search techniques to deliver 90 to 97% accuracy on 100% of calls. Bespoke management reports deliver fast business insight in any format. Quick implementation and low set up costs deliver a fast return on investment, with a proof of concept trial available if required.

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ABOUT CONTACTBABEL

If you have a question about how the contact centre industry works, or where it’s heading, we have the answer. Our major ongoing primary research projects match our experience analysing the contact centre industry. We understand how technology, people and process work together, and what their future holds.

We help solution providers develop their marketing strategies and talk to the right prospects. We’ve shown governments how the global contact centre industry will change and affect their nation. We help contact centres understand how to improve, and what their customers think of them.

If you have a question about your company’s future in the contact centre industry, we can help you.

www.contactbabel.com
When calls have to be right first time, you need GemaTech’s ‘Live Call Analyzer’

- **Faster:** 100% of calls analysed live including live agent prompting with fast, easy implementation.

- **Better:** 90-97% accuracy on 100% of calls, delivering first call resolution and live compliance monitoring.

- **Cheaper:** Low license charge per agent and cloud-based option reduces cost per call and sale.

- **Reduces:** Risk of non-compliance, call abandon and call attrition rate.
The Technology of Speech 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 analyse 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.

Speech analytics solutions are analogous with the data warehousing and mining applications in as far as they analyse huge quantities of data - here, call recordings - and identify important and insightful patterns in caller and agent activity. Hence, speech analytics also called audio mining. (It should be noted that some speech 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, speech 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 centre applications, speech analytics can be used to cut costs, but its promise goes far beyond this. No other contact centre technology provides the business with this level of potential insight that goes far beyond the boundaries of the contact centre, and can offer genuine and quantifiable ways in which sub-optimal business processes can be improved.

This is not to say that speech analytics is at its zenith. Significant improvements can be made to the accuracy and speed of the speech engines, the sophistication of analytical capabilities and the usability of reports. Some of the actionable findings from speech 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 speech 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 speech 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.
The elements of speech analytics

There are various elements to speech 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).
- 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 speech analytics software, defining their requirements and carrying out searches on the indexed data
- Reporting applications: the presentation layer of speech 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.

Phonetic or Speech-to-Text (LVCSR)

Speech analytics solutions use speech engines that are either phonetic or speech-to-text / LVCSR (Large Vocabulary Continuous Speech Recognition). In LVCSR, the call is converted into text in order for analysis to take place, and depend upon a language model and dictionary to identify words correctly.

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 phonetics approach does not require a language model or predefinition of every word looked for, meaning indexing and searching is more rapid. However, LVCSR approaches can offer a greater understanding of what is in each call.

Vendors that use speech-to-text engines point out that even if a phonetic system accurately identifies a key word, that 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). Phrase recognition (such as 'the website doesn’t work', or similar) can be used to alleviate this, although the number of true positive results using this method can be lower, as there are far more ways to say a similar thing.

Solution providers that offer analytics based upon a phonetic speech engine state its usefulness where customers already know the type of words and phrases that they are looking for, based on their business needs. Many vendors also 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.
**Figure 1: Some advantages and disadvantages of LVCSR/speech-to-text and phonetic speech analytics solutions**

<table>
<thead>
<tr>
<th></th>
<th><strong>LVCSR / speech-to-text</strong></th>
<th><strong>Phonetic</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td>A complete transcript of the call is available for detailed analysis and viewing</td>
<td>Faster indexing time</td>
</tr>
<tr>
<td></td>
<td>Ability to carry out 'discovery', uncovering trends or events which an organization may</td>
<td>Quick and easy to maintain, once the customer knows what they are looking</td>
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<tr>
<td></td>
<td>not be aware of</td>
<td>for</td>
</tr>
<tr>
<td></td>
<td>Fast text-based search</td>
<td>Tends not to require a dedicated employee</td>
</tr>
<tr>
<td></td>
<td>Level of analysis possible tends to be deeper than phonetic-based solutions</td>
<td>Initial deployment in days</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td>Slower indexing time (25-30x real-time) than phonetic systems</td>
<td>No guarantee that an identified keyword will be used in the right context</td>
</tr>
<tr>
<td></td>
<td>Low accuracy initially (most LVCSR systems also use some phonetic and/or phrase-based</td>
<td>Slower searches than LVCSR-based systems</td>
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<tr>
<td></td>
<td>technology as well)</td>
<td>Homophones and homonyms produce false positives</td>
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<tr>
<td></td>
<td>Word recognition is dependent upon it being in the dictionary within the language model,</td>
<td>Conversations not viewable by the end-user as text</td>
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<tr>
<td></td>
<td>which requires updates</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Longer time to implement and ongoing fine-tuning</td>
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**Measurements of accuracy**

Speech-to-text solutions are measured by the word-error rate: how many words are incorrectly identified? Yet identification of even less than 50% of words is often enough to provide a solid base of data upon which to perform analysis. 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.

Phonetic solutions’ measurements are made up of precision (or accuracy) and recall (or detection). As an example, if there are 100 files searched for specific words, which occur in 60 of them, then if there are 30 'hits' returned - all of which contain the word or phrase - that is measured as 100% precision, and 50% recall.
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, detection or completeness rates.

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

**Real-time analytics**

There is some debate amongst vendors upon who can provide true real-time analysis, and potential customers for whom this is an issue would do well to investigate this area fully. Some vendors take a parallel feed, streamed live into their solution and can act upon this within the call, which is especially useful for compliance and for forming legally-binding contracts on the phone, where specific terms and phrases must be used and any deviation can be flagged to the agent’s screen on the call. Getting these 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. Real-time offers a big step up from the traditional, manual call monitoring process, and offers real-time reporting on compliance as well. Finance, telecoms and utilities companies - and indeed, any business where telephone-based contracts are important - are particularly interested in this. Very high levels of accuracy are vital for this type of speech analytics.

Not all vendors are pursuing this aggressively, with some preferring to concentrate their R&D efforts on tighter integration with their WFO suite, expanding speech analytics into multichannel and offering deeper analytical insight on masses of call recordings. However, for businesses which need immediate feedback within the call, true real-time analysis is certainly available today, and R&D efforts are being stepped-up to link real-time analytics with the CRM systems already in place, in order to tailor offers to customers based on what is being said within the call.
Speech analytics which coaches your agents during every call is the only way to deliver first call resolution before your agent puts the phone down.

Call centres tend to suffer from similar problems: Can they be sure that their agents are always providing a high level of customer service and being polite and helpful to customers? How can they be sure that agents are not mis-selling products? Are agents forgetting to say certain key phrases? Therefore call centre managers need to be sure that their strategy for improving customer service, achieving compliance and increasing first call resolution rates is going to deliver and achieve a demonstrable Return on Investment (RoI).

The latest innovation in speech analytics delivers the ultimate in phrase recognition which satisfies all these criteria. As a call centre manager think of what your ideal speech analytics solution would be… I am guessing that it would be capable of listening to every call that is handled by your agents all day, every day, and I’m also guessing that you would like fast analysis on those calls which provides you with feedback in real-time on the calls which have issues? You may even be contemplating the possibility of using that analysis to help the agent or customer determine the outcome of the call before they put the phone down rather than later or the next day when the customer may not be available for a call back.

This type of solution is now a reality not a wish list. The latest innovation in speech analytics has the ability to analyse 100% of calls live, by searching for and highlighting pre-established phrases which need to be said or indeed not said, and consequently delivering a pop-up on the agent’s screen which ‘prompts’ them to: say certain phrases, highlight and ‘score’ them down for bad language, tell them they are speaking too loud or fast or simply to confirm that they have said all that is required in accordance with their script or call flow.

Just think for a second of the many opportunities this new technology creates….Rather than making management decisions based on a sample of calls, you can take data from every call and make informed decisions on a true reflection of your call centre, not what you might think is the truth.

What could your marketing department do with live market data from customers and prospects about attitudes to you or your competitor’s products? How could that insight quickly and positively impact marketing campaigns?

If you are an FSA regulated call centre think about the reduction in risk and the huge amount of savings you could make in fines and compensation by automatically monitoring all calls for compliance. Think of the overhead savings you could make in eliminating manual call monitoring and evaluation...

If you could be on every call your agent handles (figuratively speaking) and be able to intervene for the benefit of your customers, how quickly would your first call resolution rates and bottom line revenue figures start to improve? Don’t be satisfied with sampling and post-call analytics, real-time analysis is the key and available now.

For further information about this new type of speech analytics technology, please contact GemaTech on +44 (0)845 345 3333 or email me at k.jones@gematech.com.
**Accents and dialects**

In businesses with multiple global operations, speech 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 centres 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 analysed centrally within the same application.

**End-user question:** "What is the ability of the technology to handle the different languages and accents in a multi-cultural community / country?" (MD, Canadian outsourcer)

The technology is now so advanced that in excess of 40 different languages can be recognised including Chinese and Japanese. The ability to discern words and phrases spoken in different regional dialects is also available. GemaTech’s Call Analyzer has been proven to achieve 97% accuracy rates on 100% of calls and has been tested on strong accents such as Scottish and English speaking German accents with very accurate results. In addition, tweaking of the configuration for accents is so easy to do that the customer can do this themselves if required.
THE BUSINESS BENEFITS OF SPEECH ANALYTICS

Most contact centre 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 dialling, have all had a clear and quantifiable route to cost savings and improved efficiency.

Speech analytics has a different appeal to contact centres, 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 speech analytics is claiming to solve every problem that a contact centre could possibly have. However, depending upon how speech analytics is used, it can certainly assist in cost reduction, agent improvement, business process optimisation, avoidance of litigation and fines, customer satisfaction and loyalty improvements, and increases in revenue.

COMPLIANCE

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 centres 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.

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.

AGENT EVALUATION AND IMPROVEMENT

Improve the quality monitoring programme

Speech analytics tries to takes the guesswork out of improving customer experience, agent performance and customer insight. By moving from anecdotal or fact-based decisions, from qualitative to quantitative information, some order is put on the millions of interactions that many large contact centres have in their recording systems, improving the reliability of the intelligence provided to decision-makers. It doesn’t remove the need to listen to calls, but it means that the calls listened to are far more likely to be the ones that should be listened to, whether for agent evaluation or business insight.

Customers using speech 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. This can take the same existing path, 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.
End-user question: "How does the addition of speech analytics impact staffing—does it require more people to capture and analyze results OR less because the quality process is more automated requiring less manual call evaluation?" (US outsourcer)

New speech analytics solutions such as Call Analyzer require significantly less staff to monitor calls. Because the analysis is fully automated there is no need for any employee to listen regularly to calls. All you need is one or maybe 2 people, depending on the size of call centre, to configure the search criteria and take the results of the analysis to feed them back into the business.

In results achieved in Germany to date an average of 30-70% saving on staffing requirements is the norm with the average of 50% being consistently achieved.

**Identify agent training requirements**

Apart from 100% monitoring of calls, speech analytics is used to flag cases of talk-over, as well as silence detection. The former can be a source of irritation to the customer 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.

**Cut new-starter attrition rates**

Additionally, speech 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. Speech 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 based on a feeling that they simply can’t do the work to a high-enough quality.
CONTACT CENTRE PERFORMANCE IMPROVEMENTS

On first glance, speech 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 centre’s performance and perhaps even inside the wider business. However, the vital thing to understand about speech analytics is that it gives contact centres 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 centre? With high quality data inputs, mixing audio information with data such as call outcomes and revenues, analytics also identifies patterns which the business had no idea even existed, suggesting best practice and identifying areas for improvement at agent, contact centre and process levels. There are numerous possibilities for how speech analytics can impact upon some of the key performance indicators of the contact centre, whether sales- or service-focused, inbound or outbound.

Why are customers calling?

No other contact centre solution can provide a solid understanding of why customers are calling. Categorising 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 analysed 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 centre, rather than the customer purchasing on the website.

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).
First-call resolution

A major metric for contact centre 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 a government institution where they had identified repeat issues as being a problem. Analysing 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 centre'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 centre 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 centre 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.

Speech analytics allows businesses to categorise 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.
BUSINESS PROCESS IMPROVEMENTS

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

Speech 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 centre 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 centre.

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.

BUSINESS INTELLIGENCE

Customer Satisfaction Surveys

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, speech 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.
Customer Insight

As introduced above, one of the greatest advantages that speech analytics can provide is the ability to understand why things are happening, rather than just what is going on. With many solutions, it is not even necessary to know what you are looking for: automatic categorisation of calls into their constituent types is a starting point, based on the types of words and phrases that typically get used within these types of calls (e.g. "complain", "not happy", "disappointed", "speak with a manager" etc, will often relate to customer complaints). Non-audio data, such as the activity of account closure, refunds etc can also be captured from the screen and linked with the call to provide richer data for analysis. 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, analysed and passed to the marketing or pricing teams to provide them with real-life, rapid and accurate information upon which to base decisions.

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 it runs out of control, damaging brand or customer satisfaction.

Product and pricing feedback

Speech 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.
End-user comment: "It is too expensive to put numbers behind what you already know because your agents can tell you." (Head of Reservations in a UK travel company)

Can you be sure that your agents are being 100% truthful, 100% of the time? If you consider how long it would take to interview every agent about every call they handle surely this time would be better spent keeping the agents on the phone? Next generation speech analytics solutions can listen to every call and report back in real-time, giving accurate and fast analytical data which does not impact upon call handling time. Also if you can trust your agents to flag up everything you need to know then surely there is no need ever to monitor, record or evaluate calls, let alone analyse them?

Secondly if agents forget to say particular phrases for compliance purposes, they are not likely therefore to flag up the fact every time they forget to do so. Implementing real-time speech analytics, such as Call Analyzer from GemaTech, is not just about delivering data on the calls in your call centre, it is more about correcting human error during the call to deliver right-first-time and improved customer service, therefore improving efficiency and increasing revenue in the long term.

Example: A major international hotel group ran a campaign calling for people over the age of 30 to attend an event. The call agents were commissioned on getting numbers of people to the event. On the day of the event many who turned up were under the age of 30 and did not qualify. The agents clearly did not qualify their candidates and had no motivation to flag this up to their management.
IMPROVING THE CUSTOMER EXPERIENCE

Factors that impact the customer experience - such as first-call resolution and shorter call and queue times - have been addressed already. This section looks at the handling of complaints, and how speech analytics can take into account the entire customer experience outside the contact centre.

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.

Speech 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. 4% of UK calls and 8% of US calls received by contact centres are complaints, with respectively 87% and 80% of these being about problems elsewhere in the enterprise (rather than in the contact centre).

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 may also be used to identify these customers.

End-user question: "What alerts are available - for example a customer decides to hang up part way through - how is this managed?" (UK outsourcer)

This will remain the same as it is managed currently. All good existing call centre technology has the ability to highlight when calls are prematurely disconnected, as agent scores will provide this information. Notes would be made about the call in the agent’s CRM system stating that the customer had hung up. The difference with live speech analytics is that being able to search in real-time on bad phrases or specific words, the reasons for why the customer hung up can be highlighted and addressed which should bring down the re-occurrence of abandoned calls on an ongoing basis.
The customer experience outside the contact centre

There is an increasing requirement and interest in multichannel analytics, including considering 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 favour of an operator - and in the US, a staggering 26% fail the self-service test.

Businesses using speech analytics to review these failed self-service sessions will be able to categorise 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 or menu choices are not intuitive or 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.

INCREASING PROFITABILITY

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, and through the analysis of successful and unsuccessful calls, the chance to understand the type of agent language and behaviour 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.

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.

Feedback on marketing campaigns

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 centre becomes swamped with calls about the issue.
Phone-based contracts

Real-time speech analytics mean 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-flagged 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.
BUILDING A BUSINESS CASE FOR SPEECH ANALYTICS

There is no generally-agreed job role that initially identifies a potential requirement for speech analytics. Some vendors state that it is the commercial side that starts a conversation, with IT people taking over. Others say that it is the contact centre, the legal department or the QA/QM teams who show most interest. As speech analytics can be used to improve business intelligence, increase contact centre efficiency, improve agent quality and performance, execute compliance and optimize business processes throughout the organization, it is little wonder that there is no well-worn path to the vendors’ doors. However, all vendors agree that in their experience, having a senior and empowered contact within the business who knows what they want to achieve through speech analytics is vital to the success of the project. It should also be noted, that post-implementation, well-trained and empowered supervisors, trainers and coaches are key to getting and maintaining a positive outcome from the use of the solution.

End-user question: "Any tips for how best to engage the business, and inspire them to make changes?" (various)

The only answer to this is: try it! A proof of concept trial is the best way of providing justification to the business. The key here is to find a solution with an easy and fast set up so that any cost of trial is minimal. Call Analyzer is so automated, due to the inclusion of a specific automated configurator tool, that a trial can be set up within a few days and allowed to run for a couple of weeks to provide the data needed for business justification. The costs of which can be absorbed into the overall price of the solution when purchased.
ESTIMATING ROI

Return on investment for speech 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 speech 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 has 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.

End-user comment: "The biggest question I have is how to build a strong enough Return on Investment (ROI) to get corporate buy in to purchase speech analytics software." (Various)

Building a strong ROI needs a multi-pronged approach:

a) Firstly you need to assess how much time and money is currently spent on evaluating calls. More often than not people monitoring calls will only have time to listen to a random selection of calls, which means they could miss vital information, e.g. customer issues, poor performing agents or abusive calls. The alternative is to spend hours listening to entire calls on the off chance they will get valuable feedback on their agents and customers which is costly. In comparison using live speech analytics means that no listening is required as solutions such as Call Analyzer record, analyse and report on every call in real-time therefore minimising evaluation overheads and reporting on every call.

b) If your organisation is bound by regulations such as FSA rules, you are vulnerable to large financial penalties as well as customers requesting their money back if they have been mis-sold products and services. Using Call Analyzer you can ensure that key, mandatory phrases and contract terms are said on every call. If your organisation is an outsourced call centre this will provide competitive advantage i.e. you can say to every client that you monitor 100% of calls and have the ability to affect live calls as they occur. Ask yourself, what value do you place on getting calls wrong and what are the financial risks and consequences of non-compliance?

c) Using live call analysis can reduce your evaluation head count by well in excess of 50%. This resource can be reallocated as extra call agent headcount or more efficient supervisory roles.
Variables to be considered for ROI measurements include:

Cost reduction:

- Reduction in headcount from automation of call monitoring and compliance checking
- Avoidance of fines and damages for non-compliance
- Reduction in cost of unnecessary callbacks after improving first-call resolution rates
- Avoidance of live calls that can be handled by better IVR or website self-service
- Reduced cost of QA and QM
- 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

Revenue increase:

- Increase in sales conversion rates and values based on dissemination of best practice
- Increase in promise-to-pay ratios (debt collection)
- Optimised 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

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

Against these potential positives, costs to consider include:

- Licence fees or cost per call analysed
- 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 a 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 licencing 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.
INHIBITORS TO SPEECH ANALYTICS

A major inhibitor to uptake is an awareness within the company that their environment is not yet ready for speech analytics, in that they may still not have a reliable recording environment or an optimized QM or QA process.

End-user comment: "Speech can get sidelined, and a lot of the justification for this is that speech analytics works best on the ideal platform (tonnes of metadata from a telephony set up with cradle to grave info regarding each and every contact, all calls recorded in stereo with no file corruption and everything attributed to the correct agent/team/dept via integration with a well maintained workforce management system). So speech ends up waiting at the back of the line until the Goldilocks platform is in place before any major investment such as on-site transcription servers gets put its way." (Major global retailer).

The best speech analytics solutions provide an easy to use and understand complete package which does not require an assessment of current telephony and call recording set up within the customer’s organisation.

Call Analyzer in particular provides a solution which does not interfere with existing equipment and requires only a WAN connection to operate. By incorporating the following features the customer can be assured that they have the best quality data from which to analyse:

- Dual channel recording (otherwise known as speaker separation)
- Digital recording and playback to the quality of the line
- A live feed which is unencrypted when analysed and delivered in an uncompressed state during analysis

All of which help guarantee the best results.
Security and regulation was also mentioned on several occasions as a potential issue.

**End-user question:** "Does PCI prevent the use of speech analytics?" (UK outsourcer)

The simple answer is no. On the contrary GemaTech uses live speech analytics to trigger PCI compliance, i.e. when the call agent asks for the customer’s long credit card number, saying a pre-determined phrase triggers the PCI compliance feature which then obfuscates the voice within the call recording making it fully compliant and without interfering with the call or user experience in any way, and which is also stopped when another pre-determined phrase is said by the agent once the customer has given their details.

Some businesses consider that their existing call recording and manual quality monitoring processes are sufficient, and fail to understand the potential business value of speech analytics.
THE IMPLEMENTATION AND USE OF SPEECH ANALYTICS

PRE-IMPLEMENTATION: SELECTING A SOLUTION

Initiators and the Project Champion

Lots of budget is held with marketing, website or customer experience teams, rather than at contact centre level, and these teams are now seeing that the contact centre is a big part of people’s experience of dealing with a company.

To get the most from a speech analytics solution, especially the more complex systems, businesses need to identify and empower a senior project champion, overseeing a cross-functional team. The champion must have a strategic view of what analytics can provide, as well as being able to understand the operational and technical requirements of the contact centre and IT teams.

Some milestones for selecting a vendor include:

- Identify interested cross-functional parties in the organisation 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 speech analytics vendors. Reference sites using same combination of vendors recommended if possible
- Deployment either as trial or full roll-out.
THE IMPLEMENTATION PROCESS

In most cases, speech analytics is implemented well after an existing call recording environment, although some vendors report that a significant number of their speech analytics implementations are occurring as part of a wider workforce optimisation suite implementation.

Additional hardware in form of servers will be required for audio processing and analysis, the number of which is dependent on the volumes 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 near-real-time analysis, whereas a smaller and less-reactive environment might only require a single server.

Proof of concept and soft-start implementation

Many speech analytics vendors recognize the needs of the business to prove the value of an investment and most of them provide a range of options for interested parties.

Many vendors' offerings include running a proof-of-concept implementation, where a specific issue is targeted, analysed 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, speech 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.

The initial business case will tend to be either around cost-reduction or revenue-enhancement, depending on the type of business, and larger contact centres 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.

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 speech 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 analytic 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 and that this has caused delays in some cases, 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.

End-user question: "What should we do about rival software developers who may be current providers of one of the platforms (e.g. call recording) being in competition with our analytics provider? Getting call recordings in the format required to feed to the analytics platform suddenly becomes an almost impossible feat, that costs money." (Global retailer)

It is an understandable issue and one which GemaTech fully appreciates, which is why we decided to tackle this by developing a completely stand alone solution which is not dependent upon obtaining recordings from your existing provider.

The Call Analyzer monitor passively makes its own recordings for analysis purposes which are encrypted, and which can be discarded if required following analysis.

However if your speech analytics provider does require a feed then you can always cite anti-competitive behaviour. These vendors will never have solutions which match those of the smaller, specialist companies, proven by their decision to buy in technology from such companies, therefore do not feel threatened or bullied by your provider.
**Timescales**

The roll-out of the speech analytics phase tends 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 6-8 weeks to carry out the initial implementation and fine-tuning. Both types of solution 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 where the incumbent recording vendor is open-handed with providing access to the recordings, if they themselves are not the incumbent.

Key activities for an implementation may include:

1. 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
2. Operational assessment, where the processes of the contact centre are observed, and system definition to assess the existing technical environment
3. Preliminary targets and ROI estimates created based on baseline metrics
4. Call categorizations, main dictionaries and reports are set up
5. Out-of-dictionary additions and root-cause analysis, review of initial results
6. Ongoing training of key staff in use of solution
7. Review of key business, operational and commercial aims set at the beginning of the project
8. Hand-over to business and full solution activation if not done so already
9. Post-implementation support - opportunity to quantify cost savings or other metrics, including review of trends.
POST-IMPLEMENTATION: USING SPEECH ANALYTICS

Once the speech 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 speech analytics can be fully explored.

Outputs, processes and measurements of success

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-action will quantify the cost savings or alteration to other key metric.

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.

‘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, 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 - where the system can differentiate the customer from the agent - means a greater accuracy of results.

Discovery

‘Discovery’ is a term often used within the speech 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.

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.
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.

Ongoing Resources

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 speech 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.

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.

End-user question: "What does the day to day role of a speech analyst look like? (E.g. how much listening to calls, how much quantitative analysis, and how much communicating and influencing)" (UK retailer)

You do not need the specific role of a ‘speech analyst’. All you need is someone who can spend some time configuring the solution and monitoring the reports which are produced. As the reports can be given in real time, the person receiving them can then spend their time targeting coaching and training identified agents or reporting anomalies to supervisors and senior management. The main focus is then placed on what the person monitoring the analysis is able to do with the information they receive rather than trying to analyse the information, because this is automatically done for them.
THE MARKET LANDSCAPE OF SPEECH ANALYTICS

There are reckoned to be around 2,600 implementations of speech analytics worldwide (source: DMG Consulting LLC, November 2010), of which the majority are in North America. ContactBabel estimates there are around 125,000 contact centres globally, so while speech analytics could not said to be ‘bleeding-edge’, the market is certainly a long way from maturity.

BUSINESS DRIVERS

Solution providers comment that cost reduction is often the initial driver for investigating speech analytics, as contact centres realize that there is an alternative to making decisions based on minimal data, and monitoring quality manually and patchily.

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 gets a good audience. For example, debt collection firms have to read a ‘mini-Miranda’ statement on each call, warning 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.

While solution providers in the US confirm that this territory is very aware of speech analytics’ potential for improving compliance, there is also revenue-driven pressure to improve sales and collections, and vendors may offer a pre-configured version of their solutions (for example, a phonetics-based vendor may offer a version focusing on specific words and terms for sales, or identifying unhappy customers).

The majority of EMEA implementations are driven by overtly-commercial requirements, rather than compliance, such as understanding why people are calling, and identifying broken processes. This may seem rather strange at first glance, as European companies tend to be seen as having rather more regulatory processes than US companies. Higher-end implementations (i.e. those that will be more expensive) are often driven by the desire for process improvement - both inside and outside the contact centre - with a significant interest in improving agent performance management, especially collections and sales.
End-user question: "What real-life, successful business decisions have your customers made on the back of the output from speech analytics?" (various)

Some of the business decisions customers have made due to speech analytics being used include:

a) Customers have changed campaigns in the way that they are presented to maximise sales and customer service.

b) Targeted coaching of agents has been undertaken, e.g. where they required more information to fulfil their job.

c) It has helped identify how fast new agents can be trained and how long before they can actively make successful calls.

d) In Germany there are examples of where our solution has reduced the headcount in evaluation teams to deliver cost savings and Return On Investment.

e) All aspects of a customer’s business can be improved using our speech analytics solution from team leaders to agents, evaluators, coaches, decision makers and those managing the workforce management tools. For example being able to identify which agents are more effective in the morning than in the evening enabling them to be on the shift which optimises their capabilities.

f) Speech analytics has also uncovered information and issues which were previously unknown. After all you don’t know what you don’t know!
KEY VERTICALS AND ACTIVITIES

There has been definite requirements for speech analytics solutions to support and prove compliance to industry regulations, which has been particularly noticeable in the US. Industries such as finance, insurance and healthcare have been amongst the earliest adopters in the US, as well as the debt collection sub-sector.

End-user question: "What are the benefits of using this technology in a market where the business holds the monopoly and there is no competition?" (UK utilities)

At the end of the day no organisation has the right to deliver poor customer service and the deregulation of certain sectors, for example telecoms, was undertaken in order to increase competition and to improve overall customer service standards.

Customers are less loyal today than they were 10 or 20 years ago and an organisation will only be able to maintain their market leading position if they evaluate and improve upon the service they provide, otherwise their market share will be eroded. You only have to cite the popularity of websites such as USwitch.com and Moneysupermarket.com to see that customers are no longer loyal to their banks, energy, water and telecoms providers.

In EMEA, financial services have been amongst the first to take-up speech analytics, with telecoms and utilities also showing interest. Retailers, especially larger ones, have also shown interest. Outsourcing companies with service level agreements related to compliance, efficiency, retention and sales are also adopting speech analytics based solutions.

End-user question: "What value does a prospective client place on an outsourced contact center having speech analytic capabilities in their decision making process?" (US outsourcer)

This is a tricky question for a vendor to comment upon but from GemaTech’s point of view we would ask what the nature of the business being serviced by the outsourced call centre is? For example the perceived value would be far greater for an industry regulated business e.g. an insurance company who must prove that they record their calls and adhere to strict regulations or risk heavy financial penalties. However having 100% of calls analysed in real-time for commercial operations can infinitely improve their customer service and brand reputation so the value to them is proportionally greater than not analyzing their calls.

Being able to say to clients that you can monitor and report on 100% of the calls you handle for their business is a big differentiator. The service you can provide is of far greater value when you can back up your call statistics with facts and figures and agent evaluation results on a daily, weekly or monthly basis.
Many solution providers indicate that there is a minimum size below which the benefits tend not to outweigh the costs. Most put this at around the 100 seat mark - speech analytics works best when there is large amounts of data to analyse and draw conclusions from - but some vendors have a cheaper entry-level option for sub-100 seat operations as well. A 50-seat contact centre, 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, speech analytics vendors state that smaller contact centres interested in speech analytics will tend to be sales-focused, as improvements in sales conversions 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 a typical speech analytics customer in terms of size or vertical market. Many of the early adopters of speech analytics are ambitious to get ahead of their competitors and are keen to differentiate themselves in a tough market.

End-user question: "Is there any benefit to speech analytics for a smaller operation, e.g. one taking 70-80k calls per month? Is it affordable for us?" (UK Public Sector)

Can you afford not to provide better service? Can you afford to make any life threatening mistakes (think of the NHS Direct phone line)? Solutions are scalable depending upon the size of your call centre to provide for small, medium and large call centres.

Many speech analytics solutions supplied by the large voice recording organisations require days of professional services which raise the cost of the solution. Now smaller, specialised companies are delivering automated solutions which do not require such professional services, and therefore the costs of deploying next generation solutions like Call Analyzer are considerably less.

Different operating models are also available, for example you can choose a permanently installed solution where all calls are analysed all of the time. Or you can employ a rental service which is cheaper but delivers the same accurate results as a permanent always-on solution. GemaTech for instance offer a service whereby we can come in at any time and analyse a certain batch of calls for a specific purpose such as identifying key issues relating to a particular agent.
Most vendors price licences on a concurrent per-seat basis, although one or two look at the volume of audio. Pricing information is highly-confidential and subject to discount depending on the number of licences and whether speech analytics is taken as part of a wider WFO solution. It tends to range from the mid-hundreds of dollars/pounds per seat into the low thousands of dollars/pounds.

End-user question: "Has anyone used speech analytics as a service for an organization who does not own the technology? If so, what is the optimum frequency for that type of use (every 3 months, every 6 months)?"

GemaTech cannot comment on what others may be offering at the present time, but our Call Analyzer solution can be delivered in two different ways. Firstly as a solution which analyses 100% of a call centres calls in real time, all the time, or it can be deployed for a specific problem or occasion. For example a bank who suspects traders of mis-selling can implement Call Analyzer to provide evidence by bulk analysing a set of calls. This style of solution is easy to use at any frequency be it every month, 3 months, 6 months or yearly if desired.
**COMPANY PROFILE**

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**The GemaTech Solution:**

Founded in 1999 as a specialist telecoms technology company, GemaTech has a background in providing flexible working, voice recording and business continuity solutions. Historically, GemaTech has developed its own applications from first principles, but in early-2011, GemaTech entered the speech analytics space by striking an agreement with itCampus to deliver a real-time analytics solution to the market.

Using Nuance's speech-to-text engine, itCampus then developed its own phonetics application to work with it, and by using key phrase recognition on top of that, GemaTech's Call Analyzer solution works with GemaTech's call recording and monitoring products to provide real-time analysis. Calls are recorded digitally, using dual channel to differentiate the caller from the agent, streamed live into the server in an unencrypted, uncompressed format which allows the analytics engine the best chance of producing accurate results. As Call Analyzer is focused on real-time analysis, offering the chance to improve the call, a very high level of accuracy is more important than in large-scale analysis of batch recordings, where a call missed means very little statistically. However, Gematech is also keen to point out that its solution also carries out bulk analytics as well.

The real-time nature of the Call Analyzer means that the words and phrases that are necessary to the creation of a legally-binding agreement on a call (e.g. telecoms or insurance contracts) can be identified as being said or indeed not said within the call, meaning first-call resolution rates are higher, and contract disputes far lower. It also offers the chance to act upon negative phrases (e.g. "I want to speak to a supervisor") for immediate escalation.

**Customers and implementations:**

As GemaTech Call Analyzer is very new to market, there are no referenceable customers as of mid-2011.

Initial target markets are likely to focus upon those industries which are most interested in compliance, and which create verbal contracts on the call (banks, insurance companies, telecoms and utilities, for example, although other sectors are also likely to be interested). Call Analyzer is well-suited to enhancing existing call monitoring processes, as well as immediately picking up non-compliance as 100% of calls are analyzed. GemaTech claims accuracy rates of 90-97% dependent on the quality of recording, background noise etc.

GemaTech intend to offer a proof of concept project to potential customers, which is quick and cheap to implement, being a 2-week project. Licences will be on a concurrent call basis (rather than concurrent agent), and as only 50-60% of agents are typically on a call at any one time, the difference is worth noticing. Return on investment - estimated at 12-18 months - is through a mix of tangible savings around reducing call monitoring costs and avoiding legal and financial penalties, with other returns coming from the ability to increase sales resource by reducing or automating manual, non-revenue-generating activity.

Unlike some other analytics providers, GemaTech should not have the potential issues arising from third-party incumbent recording vendors, as the solution does not touch the recording production environment.
GemaTech also offers 'GemaScan', a service around emergency compliance or evidence production. Aimed particularly at banks, this is an on-site, ultra-secure analysis of specific data.

**Opinion on market:**

Call Analyzer is likely to introduce voice-stress analysis which is particularly useful for flagging calls to supervisors, although with a strong background in software development, GemaTech will be guided in new products by the requirements of its clients.
FUTURE DIRECTIONS FOR SPEECH ANALYTICS

From discussions with speech analytics vendors, we have identified the areas which most research and development cost is 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 immaturity of the speech analytics market means that for most companies, even using what is available today would be a big step forward.

**Multichannel**

Already we see that speech analytics can go beyond simple audio, taking data feeds from databases and the desktop, and integrating with CRM systems to provide in-call advice and activity (such as routing to a supervisor). Many vendors have talked about bringing social media, email and text chat into the analytics equation and even in mid-2011, many vendors offer a multichannel flavour to their speech analytics solutions - albeit very new to market in most cases - and this is consistently stated to be one of the key areas of research and development.

Future customer contact is likely to become along polarized lines: for everyday, mundane tasks, the customer will choose the website for self-service, leaving the contact centre to deal with those interactions which are complex or emotive for the customer (as well as there being demographics for whom the contact centre 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, text chat, SMS and email makes the mix more complex, and more potentially suitable for analysis. It is also certainly worth mentioning that some solutions analyse 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.

**Proving profitability**

A deeper integration of analytics to the CRM or ERP system is also expected which can relate specific behaviours or activities back to a measurement of productivity and profitability, which should finally prove to senior management that the contact centre has a distinct and measureable impact on the entire company that goes beyond simply being a cost centre. The opportunity to use linked metadata from other systems, as well as from contact centre systems, is seen as being a major opportunity for future developments, leading to a deeper and richer understanding of customers and business processes.
**Quicker and deeper analysis**

The ability to reach quickly to events in the contact centre is a theme that many solution providers pursue, and various improvements to short-term operational information through alerts are planned, to give the operations team a minute-by-minute account of what’s being talked about by customers, with anomaly spikes being identified straightaway, as well as short-term trending reports, showing how actions taken have affected these anomalies.

The 'tell-me-why' and discovery modes of speech analytics will improve over time as the better accuracy of the speech engines provides richer and more joined-up data for analysis, and the non-voice channels such as web or email show the full picture of customer contact and its intent.

**Stereo recording**

Most recording environments today are mono rather than stereo, in that there is no distinction between the caller and the agent except through context. This is a clear disadvantage for effective speech 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.

**Closer integration with workforce optimisation**

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

**Emotion detection**

Emotion displayed on calls can be extremely difficult 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 are looking at further developing their ability to detect voice-stress on a call in order to flag these to a supervisor.

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. The jury is divided on whether emotion detection is currently sufficiently well-developed to be a useful tool for contact centres, or whether it is sufficient to identify the words and phrases most likely to be identified with 'high emotion' and analyse data and patterns based on that.