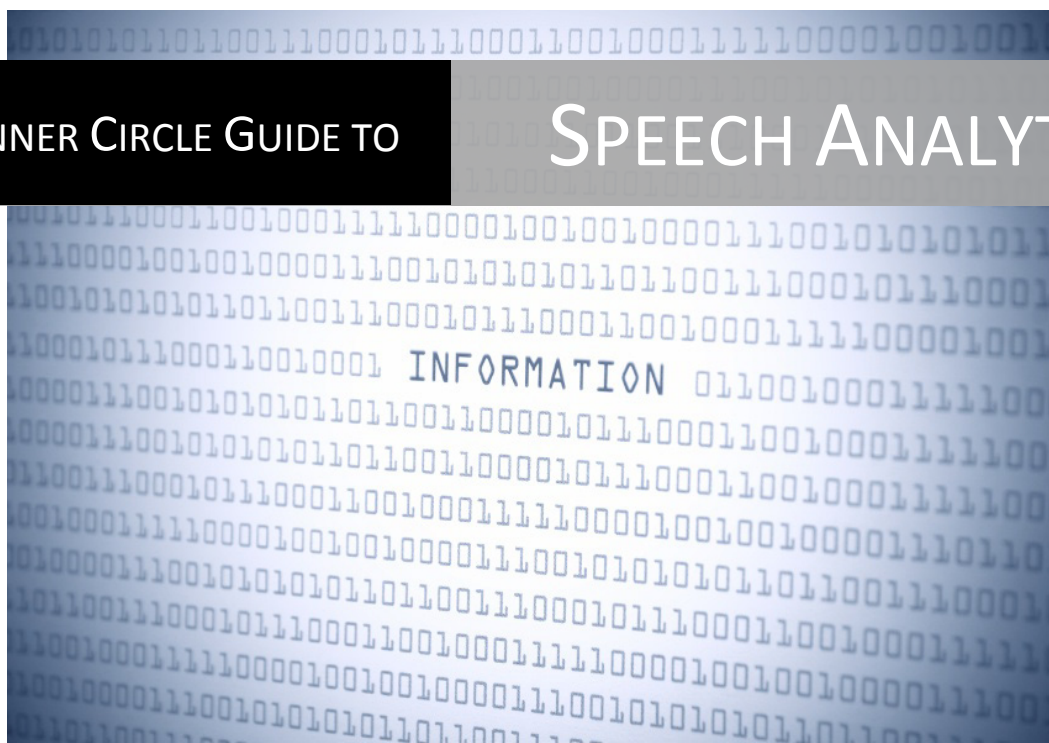




THE INNER CIRCLE GUIDE TO

SPEECH ANALYTICS



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## ABOUT VERINT



Verint is a leader in analytics-driven workforce optimisation software and services, helping organisations capture customer intelligence, uncover business trends, discover the root cause of employee and customer behaviour and optimise the customer experience.

From contact centres to back-office operations, Verint's award-winning Impact 360 suite features quality monitoring and recording, workforce management, speech and data analytics, customer feedback surveys, performance management, eLearning and coaching.

Verint Impact 360 helps improve the entire customer service delivery network, powering the right decisions to help ensure service excellence and transform organisations into customer-centric enterprises.

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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](http://www.contactbabel.com)

# The Untapped Value of Speech Analytics

Aside from the expected value speech analytics provides, there are four untapped ways that organisations are now starting to utilise it. What they don't know is how they managed to work for so long without it!

The Contact Centre and Customer Experience industry has previously perceived speech analytics applications to be useful for identifying and sizing root cause analysis, and understanding the voice of the customer. What's becoming evident, as more organisations embrace this 'voice of the customer' insight, is that only using speech analytics for that purpose is restricting a technology that has incredible flexibility and limitless uses, not confined to just process improvement.

## Organisations are discovering for themselves just how vital speech analytics insight can be.

In fact, harnessing the capability of the application can drive cultural change and put the contact centre at the heart of the business. Organisations are discovering for themselves just how vital speech analytics insight can be.

Aside from the expected value speech analytics provides, there are four key ways that astute and creative organisations are utilising it; to drive sales through service strategies; to reshape the call demand landscape created by manual capture; to focus on driving quality by majority not exception; and to change entire contact centre cultures placing the voice of the customer at the heart.

### Driving sales through service

Highly effective sales through service strategies are being created by building up a series of words and phrases that identify a successful sale. Call data is then mined to recall all the successful conversion calls in a given sample. Overlaying

this with demand or process types can demonstrate not only which demands are most likely to result in a conversion, but it also measures how long it takes. This is helping clients to build sales strategies that satisfy the customer without 'fatiguing' them, even increasing loyalty and brand promotion, whilst giving FTE savings by only targeting specific call types. In turn, speech analysts and team leaders are identifying best sales practise and using this insight to coach employees to more effective and crucially efficient sales success.

### Reshaping the call demand landscape

Demand landscapes have traditionally been built up using a series of IVR and manual demand capture data. There are multiple systems involved and often multiple resources manipulating this data but with one huge drawback; it's only giving one reason for each call. Speech analytics is delivering to organisations a complete and accurate baseline of demand types. It's able to challenge and reshape preconceptions of why customers call because it's not just recording the single subjective reason for the call but all of the reasons why a customer is calling and putting a handle time figure on each demand type rather than working with the average. Some calls are always quicker than others but through speech analytics, our clients are now forecasting with more granularity than ever.

### Focusing on driving quality by majority not exception

Another way speech analytics insight is improving customer service is by creating a quality shift not just with a small number of lower performing employees, but by concentrating on uplifting the quality of 70%+ of the



call taking population – it's moving average to new heights. The ability to analyse employee behaviour throughout the entire sample base in one snapshot is giving quality and training teams a volume of data previously unknown. They're able to develop and target coaching strategies that use examples of best practice calls to deliver training that instantly lifts customer satisfaction en masse. Clients that have used speech in this way have not only seen increased customer satisfaction but often as a by-product see their call volumes reduce and their handle times shorten by giving employees the training and confidence to deal with demand types well.

### Changing contact centre cultures

The most far reaching way speech analytics insight is being utilised is to change entire contact centre cultures. By mapping customer journeys through speech categories, clients are able to build and focus new processes on customer needs by using the voice of the customer. Introducing performance measures, coaching and training on the back of intelligence identified by analysts, entire change programmes are being delivered to drive not just good but great customer service. This is being done by incorporating

the voice of the customer data into everything they do; quality, process measurement, root cause identification and dissatisfaction analysis. These programmes are being delivered quickly and effectively because of the flexibility speech analytics gives in measuring the context of calls.

It's the speed to deliver context and data that's making a real difference to organisations that are embracing speech analytics and using it to drive their improvement programmes. Insight that would have taken weeks and a vast amount of resource to produce and validate is being produced with far greater reliability and speed, allowing contact centre managers to respond and change as quickly as their customers' do, irrespective of size. An increasingly common comment is that they don't know how they managed to work for so long without it.

For more information about Speech Analytics contact: [marketing.emea@verint.com](mailto:marketing.emea@verint.com)

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## 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)***

Most 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. Unlike phonetics-based solutions, LVCSR does not require predefinition of words to search for as the content of calls is available in the index, and although indexing is considerably slower than with phonetics, the search process is much quicker, especially when searching millions of calls.

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.

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

	LVCSR / speech-to-text	Phonetic
<b>Advantages</b>	<p>A complete transcript of the call is available for detailed analysis and viewing</p> <p>Ability to carry out 'discovery', uncovering trends or events which an organization may not be aware of</p> <p>Fast text-based search</p> <p>Level of analysis possible tends to be deeper than phonetic-based solutions</p>	<p>Faster indexing time</p> <p>Quick and easy to maintain, once the customer knows what they are looking for</p> <p>Tends not to require a dedicated ongoing employee, this reducing total cost of ownership</p> <p>Initial deployment in days, although some LVCSR solutions have developed regional language models that offer a quick start</p> <p>Not dependent on dictionary or language model although uses an acoustic model</p>
<b>Disadvantages</b>	<p>Slower indexing time (25-30x real-time) than phonetic systems</p> <p>Word recognition is dependent upon it being in the dictionary within the language model, which requires updates</p> <p>Traditionally longer time to implement and ongoing fine-tuning, although less than previously</p>	<p>No guarantee that an identified keyword will be used in the right context</p> <p>Slower searches than LVCSR-based systems</p> <p>Homophones and homonyms produce false positives</p> <p>Conversations not viewable by the end-user as text</p>

### 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.

Other measurements, used by both phonetic and LVCSR solutions, 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

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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.

### ***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)



Verint's Speech Analytics solution is based on transcribing 100% of the purely random sample of calls. Once fully transcribed the content of the call is loaded into Verint's patented Complete Semantic Index. The ability of the solution to provide new insights, to alert on things not predefined, to guide your searches and to help you rapidly define accurate and focused categories is based on the transcription engine's ability to correctly identify long meaningful sentences and utterances and not just predefined keywords or phoneme strings. The underlying speech recognition technology is designed to handle different accents and dialects from a region/country.

The technology leverages language models built on actual contact centre conversations from across each country or region, covering different verticals, as well as accents and dialects. These are both acoustic and linguistic models defined based on actual accents as well as the "way people talk" and the relationship between words. We have language models that provide effective coverage across many deployments in one country, such as in the UK for example, where accents and dialect may vary considerably between regions and even single calls. We also deploy at multi-lingual environments, such as in Canadian contact centres, where we provide solutions in English and Canadian French, enabling analysis on calls using the relevant language, while providing the ability to report on issues across languages.

# Do you know what your customers really think of you?

Verint Systems identifies how Voice of the Customer Analytics delivers detailed insight into customer feelings and behaviours

Gone are the days when all you had to deal with were letters and phone calls. Customers today expect to be able to email, text and connect with you via web chat, too. They blog, leave reviews and comments on websites, and talk about you on Facebook, Twitter and a dozen other social networks. They may be praising your customer service or condemning your latest product, but how can you possibly keep track of what they're saying?

You want to be accessible, but the downside is that you're now hearing all sorts of things that never used to get any further than a grumble down the pub, or a moan by the school gate. And you can't stop your customers

## Every time a customer makes their voice heard, they deliver vital intelligence and powerful insight

"going social" and broadcasting their views even if you wanted to. So what was once a trickle of feedback is now a flood – a flood that has the potential to reach far into the global social network.

Every time a customer makes their voice heard, they deliver vital intelligence and powerful insight. The deluge of views, opinions, bouquets and brickbats offers a huge opportunity. But how do you mine this rich source of feedback? How do you deliver relevant intelligence to your stakeholders that relates to specific business priorities? And is it possible to spot early warning signs and pre-empt critical problems?

### Listening to the customer

Organisations that want to understand what their customers are thinking, or even predict what they're going to do next, can turn to the wealth of insight contained within their contact centres and on the web and social networks. But it's no easy task; they cannot hope to listen to the mountain of data, no matter how substantial their resources. What is needed is a way to consolidate the millions of voices into clear,

prioritised insights, which business leaders can leverage.

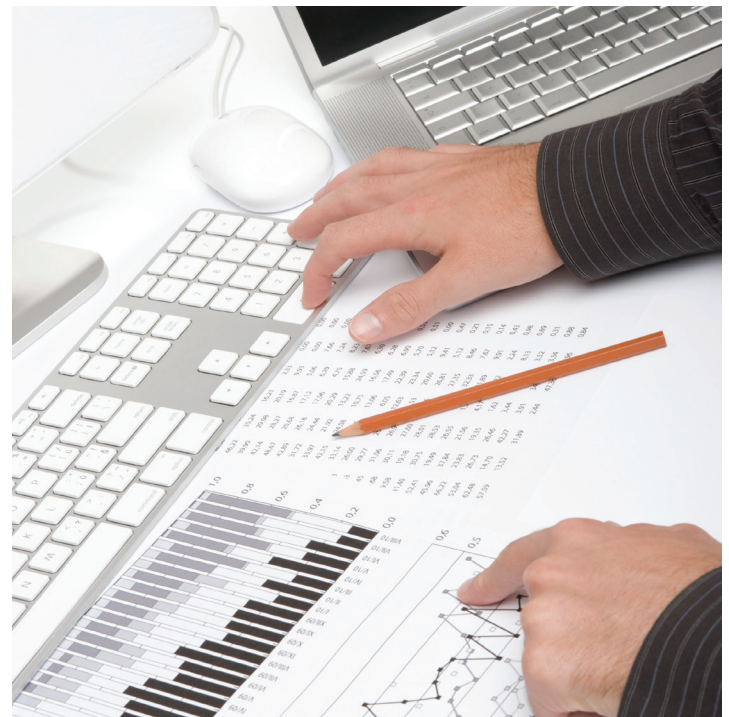
The solution lies in technology. Speech analytics is now relatively well established as a means by which to uncover trends within spoken transactions. A complete, unified Voice of the Customer Analytics solution, which embraces sentiment, text and data analytics, will reach much further.

Voice of the Customer Analytics™ enables the business to "listen" to a huge range of verbal and written interactions and other customer feedback processes. This lets an organisation uncover valuable intelligence, such as how agents engage with customers and how customers react to the agents and the processes, products and services being offered.

Voice of the Customer Analytics also gives a business an insight into how easy or difficult it is to do business with and how this affects customer spending. It lets an organisation learn about what its competitors are offering, and allows it to track trends and changes in customer behaviour and to identify the root causes of changes. It offers a business a deep understanding of the end-to-end customer journey and the quality and consistency of its communication process across multiple channels. Finally, Voice of the Customer Analytics can uncover the early warning signs of bigger issues hidden among the millions of interactions.

### Transforming insight into action

Voice of the Customer Analytics can provide value from the start with a few "low-hanging fruit" opportunities. But that's just part of the picture. A much larger opportunity exists in making Voice of the Customer Analytics an integral part of the organisation and using it to transform the analysis into targeted actions that drive strategic change in the way customers are handled, communicated with and sold to. Applying the latest Voice of the Customer Analytics best practices gives a business a complete 360° view of the customer experience.



Uncovering valuable intelligence with Voice of the Customer Analytics

Benefits with a real value to the organisation and its stakeholders can be achieved. For example, a communications provider was able to fix back-office processes that were generating unnecessary repeat calls and driving increased customer dissatisfaction. The corrective action helped to increase customer satisfaction by 30 per cent and saved millions of pounds through more streamlined processes.

A payment processing team was able to identify "customers at risk", based on recent conversations with them. In ranking them by value and listing the root cause of their potential defections, before passing them to a dedicated win-back team, the payment processing team was able to save more than 2,000 accounts in the first year alone.

Then there is the mortgage company that was able to identify process improvements after analysing customer interactions relating to invoicing, taxes and other frequently mentioned topics. By highlighting the five key customer queries, and developing FAQs for agents, the company was able to reduce significantly the average handling time on these calls.

Finally, a food manufacturer identified opportunities in verbatim customer feedback to address specific customer segment needs. By meeting these needs, the manufacturer increased sales by 30 per cent the following year.

### Best practice

Where Voice of the Customer Analytics can deliver quantifiable, meaningful benefits to the enterprise, the best results come from partnering a market leader and accessing its extensive experience of implementing solutions across a range of industry sectors. Verint® has this experience. Verint's consulting team uses structured, tested methodologies to support enterprises in developing meaningful analysis that delivers quantifiable evidence – evidence which the organisation can use to implement changes that directly impact the bottom line.

But is it for you? What is Voice of the Customer Analytics worth to your business? What value the intelligence that enables you to shave 10 seconds off every incoming telephone call? What value the early warning of a glitch in an online purchasing process that is driving web customers to abandon their shopping carts and buy from the competition? What value the knowledge that one of those super-influential online networks doesn't like the way your business is advertising these days? Only you can say.

For more information about Voice of the Customer Analytics contact: [marketing.emea@verint.com](mailto:marketing.emea@verint.com)

Further information at [www.verint.com](http://www.verint.com)

## 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 take 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)**

 We find typically that speech requires smaller teams of analysts. The insight that can be extracted from the speech application is done so incredibly efficiently as rather than randomly searching and waiting for relevant calls, category building and keyword searching in the application will bring to the surface all the calls you need for analysis instantly. This negates the need for multiple lengthy data collection exercises. For example, a utility company requiring insight into high metered bills could spend months trying to mine and collect this data. The speech application could surface this insight within a matter of hours by searching the existing sample base of calls for all the conversations relating to high bills and metering.

What we have seen work well however is dedicated teams of analysts working with the data, building up trending knowledge, measuring the impacts of change and reacting to new issues highlighted by the application. The other advantage is the ability to measure change daily through the application rather than again, having to undertake lengthy and resource heavy re-measure exercises.

### ***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 behaviour - 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.

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## 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).

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### ***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 an organisation 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.

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## 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.

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## 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.

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### ***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)



Agents may give you some indication if they see something happening in recent calls, but that does not provide you enough information to act upon. You don't want to change a whole campaign because an agent told you that he had two customers struggling to understand it. Speech Analytics helps you easily find out whether these issues take place across your call volume, quantify and prioritise them, and have immediate access to relevant examples to help design a solution. Moreover, by continuously analysing all calls, Speech Analytics can automatically surface changes in customer behaviours, helping address issues early on, or leverage opportunities surfaced by your customer inquiries. One of our customers has estimated that the turnaround of providing information requested by internal inquiries has dropped from more than a week on average to minutes or several hours at most.

Some organisations inquire regarding the additional value Speech Analytics can deliver when there is already an agent demand tagging process in place. Agent demand tagging will tell you that a customer called about an issue you already know about, and this is very subjective as it relies on agent interpretation and diligence in recording the contact accurately; it's "one dimensional" information and will only fulfil your pre-determined expectations. Speech data will give you this level of information and much more. To start, it is accurate as relies on conversations and not agent interpretation. It quantifies the demand in terms of size, handle time, duration and time splits and importantly correlates with other demand types. It can tell you how agents are performing, the silence time, holds and transfers and indicates where a call has become emotional.

## 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)



One of the benefits of speech analytics is the ability to continuously monitor agent behaviours and customer outcomes across the entire agent population. This enables to create a "hit map" of issues across agents, identifying for example cases where agents need support to increase resolution, or coaching on objection handling. By leveraging our scorecard solution, speech driven KPI's can be maintained on each level of the organisation, helping manage agent and team performance and alert if certain issues don't meet a set goal. Based on a combination of call content and metadata, a variety of issues can be tagged and monitored, such as unhelpful agents, escalation requests or calls that ended with an unhappy customer. Some organisations are using speech analytics to identify calls from customers at risk to be called back to with a resolution, significantly increasing retention and win back rates.

### ***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 fulfil 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.

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## 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)



We work closely with your speech analyst teams to help market, influence and drive change in your organisations; we don't just stop at teaching you how to use the application. The most effective ways to inspire change is to have an enthusiastic business champion and start with one issue. Keep focused using insight gained from speech and see it through to embedment and measurement. This won't take long. Once this change has been realised, it becomes much easier to influence the rest of the operation by using an internal example. The speech data is so flexible it can be used in almost every area of your operation and demonstrating the application and its potential for these areas is critical in making changes. In the early days of your speech deployment we can work with you to build a stakeholder influence map and plan to make sure you're engaging as many parts of the business as possible. Once they see the effectiveness of the insight, change starts being delivered at a much greater rate. One of our customers has recently delivered a demand reduction programme 6 months ahead of time and 5% higher than targeted by adopting speech data as their primary source of insight; the change becomes infectious.

## 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)



We understand that building strong business cases for speech is a key for clients, so our consultancy team works closely with you on-site understanding your business and the issues facing your organisation. We also get to the heart of your operational targets and ongoing initiatives and provide additional data to support your current change programmes offering in depth detail about the 'landscape' of your demand. We can often surface information that your management team may previously not been aware of and can demonstrate the power of the application by sizing the impact, giving greater support to decision making processes. Building strong business cases isn't just about hard facts but also is about understanding the cultural impact speech data can have on your organisation. Many customers who have deployed speech have not just realised the benefits they set out to, but have seen a real shift in the influence the contact centre can have in proactively planning for operations. We work continuously with our customers who have speech deployed so are able to offer case studies and examples to support any anecdotal element of your business case showing how this will help your organisation meet their targets as well as return the investment in both technology and process.

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).

 Of course having rich metadata gives you granularity on your data sample, slicing and dicing it in many different ways offering flexible insight to any number of interested parties. When this data is already available in the telephony and recording environment it can be mapped to the call content information generated by Speech Analytics. However it really isn't critical. Many of our customers have had great success with even the most basic structured data drawn from their call recording systems. We repeatedly find that the critical part of the data is the content of the calls themselves, and mining it is not dependant on the metadata. As organisations grow in their ability to leverage speech analytics data we can support them in acquiring additional metadata when needed. As part of every deployment we send a systems architect expert to do a full assessment of your recording capabilities and ensure that we map as much data as you have into the speech application for analysis.

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)

 Verint provides tools to help meet PCI standards for handling and maintaining call recordings, such as end-to-end encrypting and data avoidance. Verint Speech Analytics solution integrates tightly with the Impact 360 recorder Security and Encryption mechanism when employed, ensuring that both audio as well as the generated transcripts are maintained in an encrypted format ensuring that analyse content can only be accessed through the application by users with appropriate rights.

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.

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## 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 measurable 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)



Verint offers solutions designed to either extract data from other vendor call recording environments or enable Verint recording customers to export recorded calls and metadata from Verint solutions for use by third party applications. The product has been designed to facilitate integration between supported Verint platforms and external systems while protecting the production environment and customer investment.

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### ***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.

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## 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 (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 - 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)



The role of a speech analyst depends very much on the piece of work they're undertaking but having dedicated resource makes a big difference; you get out what you put in.

Typically they'll start with the quantitative analysis using the application to understand the data in terms of duration, correlation, size, impact and root cause. They would then move on to call listening which is a critical part of the analysis. The application brings to the fore the calls of most interest to your analysis piece. This could be an issue as broad as repeats, or as specific as repeat complaints about card usage abroad for example. It only takes reviewing a few of these calls to understand the root causes of the demand, and the ability to skip to the section of the call which has the most interest to you reduces the call listening time even further. Our advanced enablement support coaches your analysts through this.

We typically see that the early adoption phase of Speech Analytics involves creating insight and documents that both validate and influence stakeholders, giving them a degree of comfort in the results which will often bring back uncomfortable moments of truth. The Verint Speech team will work closely with you throughout this period of embedment to make sure you're fully supported and enabled to manage this change in your organisation. It doesn't take long for the emphasis to switch from concentrating on influence stakeholders to manage the demand and dependency on the speech data from 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)**




Following are a few examples from Verint:

- A communications provider was able to fix back-office processes that were generating unnecessary repeat calls and driving increased customer dissatisfaction. Corrective action helped increase customer satisfaction by 30 percent and saved millions of pounds through more streamlined processes.
- A payment processing team was able to identify 'customers at risk', based on recent conversations with them. In ranking them by value and listing the root cause of their potential defections before passing them to a dedicated win-back team, they were able to save over 2,000 accounts in the first year alone.
- A mortgage company was able to identify process improvements following analysis of customer interactions relating to invoicing, taxes and other frequently mentioned topics. By highlighting the five key customer queries and developing FAQs for agents, the company has been able significantly to reduce average handling time on these calls.
- A food manufacturer identified opportunities in verbatim customer feedback to address specific customer segment needs. Through meeting these needs, they increased sales by 30% the following year.
- A telecommunications services company reduced total call volume by approximately two percent by identifying and fixing issues with the password reset process for online billing self-service. They further exposed issues with customers logging on to the company's Web site, with subsequent technical improvements contributing to an additional one percent reduction in total call volume based on this one area of analysis alone.

## 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)**

 Utilities and local government agencies are becoming our fastest growing market. Typically the demand to deliver superior levels of customer service whilst reducing operating costs are the primary goals of these organisations, however an additional driver is the need to successfully manage and meet regulatory requirements. Root cause analysis and demand reduction is the immediate benefit of using the speech application. One of the other benefits is using it for accelerated quality monitoring. Speech provides data to be able to quality monitor a far greater sample of calls about specific call issues, rather than the usual less than 1% of calls per month. Many organisations use speech for this purpose and have seen real increases in quality and customer satisfaction whilst driving down handle times and demand simultaneously and in highly efficient timescales. It's also can be used for compliance management, understanding where agents are and aren't being compliant with procedure or policies, another fundamental process for utilities. During our discovery workshops, the Verint Speech team will work closely with you to make sure speech is fully utilised for your business needs.

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 centre having speech analytic capabilities in their decision making process?"** (US outsourcer)



We have several customers who required to have the same level of visibility to what happens on their calls across both internally run centres as well as the outsourced ones. Speech Analytics is becoming part of the essential set of tools used to effectively manage contact centre environments and enhance customer experience. Clients of outsourced contact centres benefit from gaining better understanding of their customer experience and how to best provide for their needs. This is even more important when these interactions are not managed directly by them. We find that outsourcer environments using our technology can communicate better with their clients. By using speech analytics they surface and quantify issues that impact their ability to provide high quality service, issues which in more cases than not stem from processes or policies within the client environment. Leveraging Speech Analytics is helping these outsourcers to increase trust and even gain more business from the same clients, while successfully differentiating their offering.

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)



Speech analytics will help most contact centre organisations irrespective of size. We have customers covering from 50 to 30,000 seats from a variety of industries including the public sector generating benefits from the solution and justifying the investment. As part of the sales process our account directors work closely with you to deliver the best systems and support process for your budget and business needs. Verint offers different solution types, from an entry level to advanced, tailored to different organisation sizes, budgets, and appetite for technology investment.

## PRICING

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)?"**



Our Managed Service proposition supports customers in exactly this position. Typically customers that are undergoing large scale IT upgrade or change programmes but still require the essential insight speech gives opt for this support package. Customers have also utilised a managed service approach to give a one off unique understanding of demand types or business issues, to support organisational change programmes and to provide support for business cases. The data is extracted and transcribed for you (usually on a monthly basis but this can be flexible) giving a static sample of data to work on either with your own internal dedicated speech team or by using a team of experienced Verint Speech Consultants who can undertake the analysis for you.

## COMPANY PROFILE

### ***The Verint Solution:***

Verint is one of largest providers of workforce optimisation solutions, offering a full suite of products including call recording, workforce management, eLearning, quality monitoring, coaching, performance management, and Voice of the Customer Analytics to mine the different customer channels, all under its 'Impact 360' banner. Part of its Voice of the Customer Analytics platform, Impact 360 Speech Analytics is based upon a Complete Semantic Index to mine the entire content of calls. It has hundreds of customers globally, including Elavon, VSP Vision Care, AAA Washington, Telefonica, Rogers Communications, defacto.call centre and dialog, Bell Canada, O2 Ireland and HCF.

Impact 360 Speech Analytics offers two angles from which to come at calls: its Customer Behaviour Indicators capability automatically looks for trends across volumes of calls and brings out hidden patterns from what customers are saying, to help surface arising issues and opportunities; whereas Call Analysis is focused upon specific categories of call based on specific business needs - e.g. an unsuccessful sale or billing enquiry - to see how these processes can be improved. Verint states that with a Complete Semantic Index, leveraging a full speech-to-text approach, companies can process, retain, and mine the entire content of calls, not just the keywords and phrases that have been specified initially. This capability helps address the challenges of analysing free speech, by surfacing issues that users may not be aware of, suggesting the specific language customers and agents use, and automatically surfacing the context in which words and phrases are used, thus helping define effective queries on the fly, with immediate results. The 'TellMeWhy' discovery capability, for example, identifies clusters of terms that occur together in subsets of calls, and gives a starting point for analysis, meaning that businesses can listen to the *right* calls, rather than randomly guessing or employing excessive numbers of people to get insight from customers by listening-in to calls.

### ***Customers and implementations:***

Verint has various methodologies available for building a business case and implementing speech analytics, the latter of which can be done as a combination of proof-of-concept (including ROI modelling), delivery of speech analytics as a managed service initially, and the training of customers on how to use the application before taking it in-house. Verint points out that the most successful projects will have ownership at a senior executive position, and that the business will have a strategic view on what to do with analytics, as well as an operational requirement.

Verint recommends that a company choose specific KPIs or business issues to begin with when implementing the solution, and agree on targeted benefits and a delivery timeframe. Verint helps companies to initially baseline the issues by using the solution, then identify root causes and build a prioritised list of suggested actions. The application helps track the impact of the actions using the original categories as baseline and benchmark them before and after initial implementation. The 'champion' of speech analytics within the business can then measure the change and easily calculate the benefit to the business, demonstrating costs reduced or revenues increased specifically through implementation, thus driving a more rapid adoption of the technology across the business; for example, by establishing an initial baseline of the number of calls received about an issue, compared with the similar result after implementation, from which a specific cost is easily calculated.

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A typical Verint Speech Analytics customer will tend to have a minimum of 100 seats, all the way up to 30,000 seats (although Verint offers its 'Speech Analytics Essentials' entry level product to small operations), as the greatest value comes from having massive amounts of audio data to mine.

***Opinion on market:***

The market in EMEA is seen to be particularly driven by requirements to improve a business's value - rather than compliance - answering questions such as "Why do people call?" and "How can we improve our processes?". A requirement to reduce cost is typically seen as the initial requirement, as well as an acknowledgement that manual activities such as call monitoring and performance management simply do not offer the potential insights that are held by the millions of call recordings available to listen to. However, Verint states that once the rest of the business finds out about what speech analytics can deliver, new requirements are requested from various departments. For example, O2 Ireland initially used speech analytics for quality improvements, but once word got around, the marketing, website and sales operations started using it to listen to customers' views and ideas on what they would like to see from the company and its products.

In 2011, Verint launched its 'Voice of the Customer' product, a single multichannel platform that centralises multiple sources of customer interaction data, allowing speech analytics, text analytics, and customer feedback surveys to be analysed together, as well as supporting the integration of data from web analytics and social media.

Future editions of Impact 360 Speech Analytics are likely to speed up installation and deployment, deliver further improvements to the 'TellMeWhy' algorithms of automated discovery and enhance workflows into the workforce management system.

## 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.

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### ***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.