Speech Analytics

Unlocking its Full Potential

A WHITE PAPER PRESENTED BY:

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ABSTRACT

Businesses are looking, more than ever before, to speech analytics technology for a competitive edge. There are many benefits to *data mining* call audio. This paper will work to identify the numerous ways in which employing speech analytics can bolster business processes and facilitate success. We will review the use of speech analytics technology by citing real-life applications from company case studies, and identifying their measurable returns.

# Contents

Speech Analytics Overview

The concept of adapting speech analytics technology for commercial use was introduced in 2003 [1]. Since then the technology has not only undergone a considerable evolution in its capabilities, but it has also become much more accessible. Businesses quickly became aware of the fact that data mining could be applied to their recorded calls. Subsequently, the use of speech analytics technology evolved as businesses constantly developed new metrics and creative applications.

The Technology in Brief

Spoken content is analyzed for keywords and emotional cues such as pitch, tone, and volume. Speech analytics' technology can even measure the space in-between, the length of the call and even "dead air." Other parameters can be customized to a business' specific needs. The resulting audio data is captured and stored so that it can be searched and used to generate reports.

Two Primary Strategies for Processing Audio

There are two primary strategies for processing audio employed by speech analytics software: *phonetic* or *transcription*.
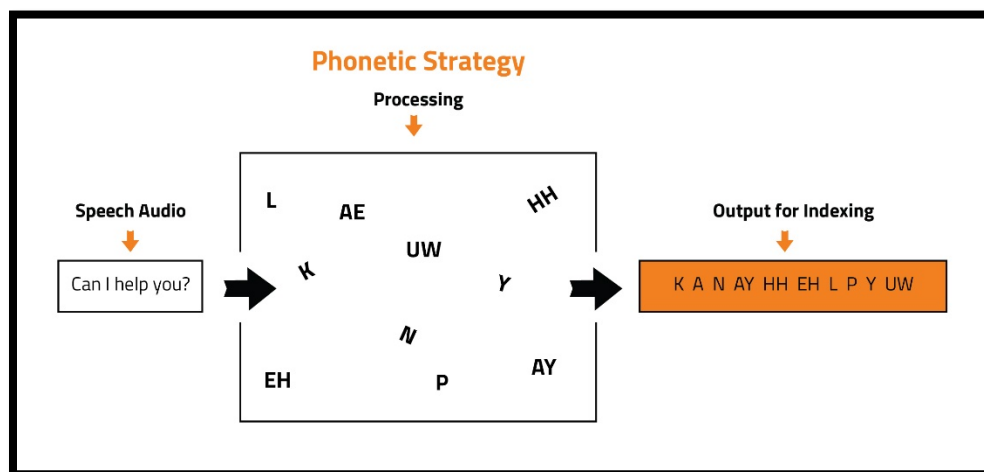
The **phonetic strategy** processes the audio by breaking it down into strings of tiny phonetic sounds. The benefit to this strategy is that it doesn't rely on a 'language model' or preset vocabulary and so processing is very fast. It can also more easily detect different dialects. The downside is that it requires manual filtering to ensure that the "words" logged are in fact *words*. The margin of error can be large when conducting searches.

Search Problem with Phonetic Indexing

Phonetic Search

Word → **Translate** → → → **Translation**
EH N IY TH IH

knee → N IY → EH **N IY** TH IH NG → ~~knee~~ → Anything
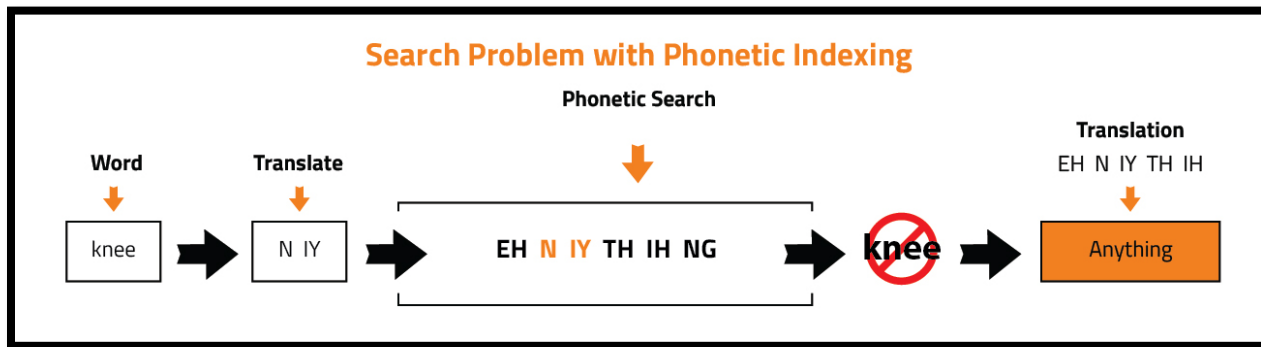
The **transcription strategy** goes by many names, sometimes referred to as *Large Vocabulary Continuous Speech Recognition* (LVCSR), "speech-to-text," or *Automatic Speech Recognition* (ASR). This approach first transcribes the audio into text before processing. This method processes the entire conversation rather than snippets and so generates a bigger picture for analysis. It can also index individual words or complete phrases. The drawback to this strategy is that because it relies upon a large dictionary, the processing time can take longer.

Transcription Strategy

Search

Speech Audio → → → **Output for Indexing**

Can I help you? →

Camel	Heir	You	→ Can I help you
Can	Heiress	Young	
Can't	Heirloom	Younger	Can
Car	Helix	Your	I
Carnivorous	Hello	Yourself	Help
Cart	Help	Youth	You
Cast	Hemisphere	Youthful	
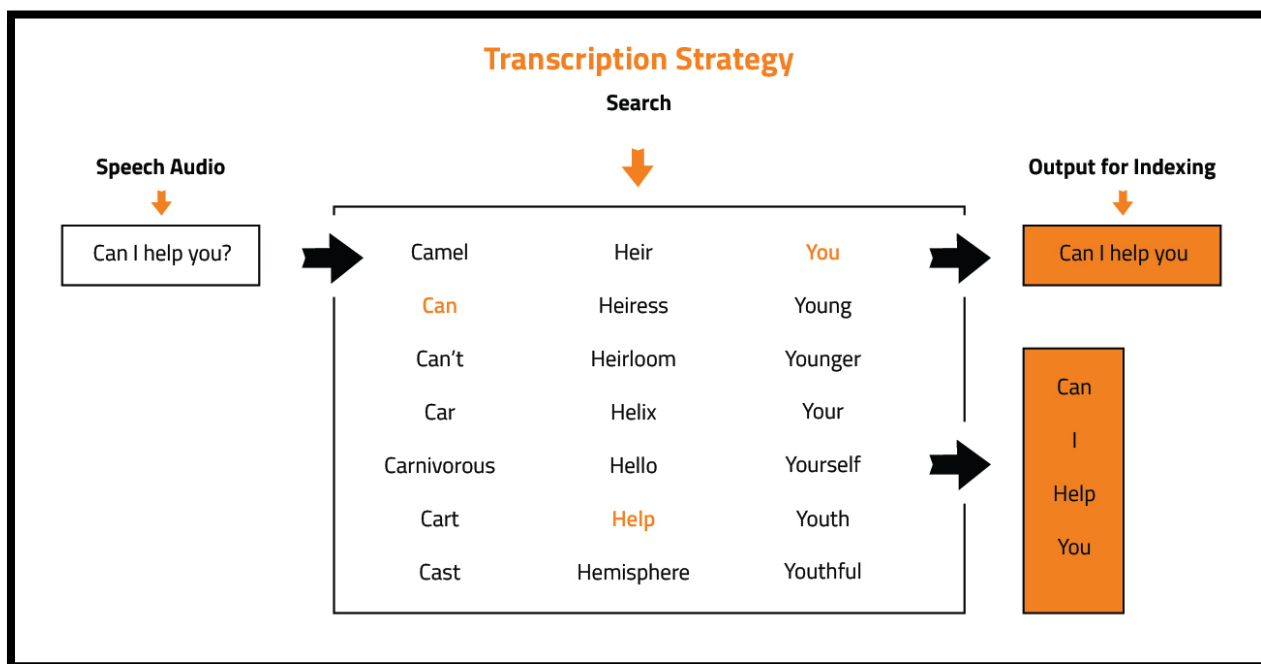
 Arguments can be made, on either side, for which is the superior method. Because of the limitations of these strategies, additional mechanisms are implemented to analyze emotional components alongside the verbal contents of conversations. Emotional data gives a three-dimensional impression of the interaction. When call data is reviewed, a supervisor may easily ascertain if an agent is properly following a predetermined script. Upon review of the emotional context, the supervisor can see if the agent seems depressed or hurried. Proper content without emotional professionalism is a red flag and requires immediate feedback; whereas, missed content with a professional attitude may be an indicator of insufficient training. The importance of these variables, especially as it pertains to your frontline employees, cannot be overestimated.

Untapped Potential

Though first popularized by call centers, speech analytics is now being utilized in progressive ways within other industries. There are endless possibilities for applying speech analytics to business processes, such as for marketing and sales departments. A good speech analytics application can be modified to the needs of any business and reveal areas of untapped potential.

> "The main objective of performance management is to align business process goals with overall organizational goals. These goals include profitability, market competitiveness and customer loyalty. When these goals are stated in clearly measurable terms, analytics becomes the vehicle for achieving them." –Dan Derin President of Genticity (2)

3 Building Blocks of Success

There are three primary areas of focus that facilitate success for any business; quality assurance, compliance and customers. Employing a speech analytics system can support each of these in unique ways. When business performance in these three areas is at optimum levels, the company reaps the rewards in the form of profitability and reputational success.

Speech analytics is a key strategy for ensuring compliance standards are adhered to and to negate the possibility of fines or potential legal action. Scorecards can be generated for employee performance to ensure compliance standards are being met. This allows for accurate risk assessments and the mediation of potential issues before they have an opportunity to escalate. Speech analytics software facilitates quick and accurate audio searches in the instance of a dispute. Locating recorded call information in a timely manner can save monitoring, auditing and litigation costs.

Efficiency

Employing a speech analytics tool offers opportunities for quality assurance that would otherwise be unattainable. Monitoring call volumes produces invaluable data about business processes as a whole, highlighting areas for improvement. Speech analytics easily identifies trends in consumer experiences and agent performance. Information collected can give valuable insight to issues with products, services, as well as missed opportunities. This information is beneficial as a training tool and often used by

companies to adjust internal policies. This technology not only points out weaknesses in operations, but also provides guidance on specific areas in need of attention, making improvements easier to implement.

<u>**Performance**</u>

> ## "It takes 12 positive customer experiences to make up for one negative one" (5)

Nothing can put you in the mind of consumers the way employing speech analytics can. Data mining call audio is the most powerful tool for giving businesses a competitive edge. Reports offer clear impressions of areas for concern, consumers' emotional states, levels of satisfaction, and reflect their overall attitude towards products and services. For example, VoizTrail's Decision Analysis module can track key decisions that consumers make while on the phone, such as payments, reasons why they can't pay and disputes. It also tracks new trends and the success of new business initiatives such as digital engagement. Speech analytics is the most concise way to evaluate consumers' needs and to recognize when to make adjustments to better fill those needs.

Measurable Metrics

- Number of Calls
- Time of Call
- Average Call Length
- Percentage of Sales, Upsells, Cross-Sells, Conversion Rates
- Service Level / Response Time (i.e. *X percent handled in Y time*)
- Agent Adherence to Scripts
- Compliance Standards
- Courtesy / Professionalism
- Emotional State of Consumer (i.e. Customer Satisfaction)

Hidden Advantages of Tracking Keywords

Speech analytics technology is capable of recognizing specific phrases. This helps a business identify whether their representatives are staying on script, requesting the appropriate information, and offering incentives or promotions. It is also capable of illustrating the words that are uttered the most frequently. Reports can be generated by individual, department, or the business as a whole. This is a valuable tool offering key insights into the "voice" of your brand.

Speech analytics technology can hone in on either the caller or the representative. This makes it easier to apply the data to business processes. Some versions of speech analytic software include visual reporting features such as word clouds. These make the frequent use of specific words obvious by displaying them the most predominately. Word clouds can be effective training tools, giving an easily comprehensible overview of performance.

In a recent article for Collectors Magazine Scott Purcell, President of Professional Credit Service, detailed how his agency utilizes the word tracking feature of their speech analytic software. He gave examples of the simplicity of tracking for compliance by searching for phrases like "attorney represented." The benefits of monitoring consumer experiences through searching for terms like "disappointed" or "terrible" was frequently cited by supervisors. He detailed how this feature allowed them to verify that specific client requests were being honored, like addressing consumers as "Sir" or "M'am." And he offered an anecdote about how they use the feature in agent training:

> "Our system can easily create word clouds. For one of our reps the tool showed she said the word "yeah" 3,000 times last month. In coaching her about other professional ways to show agreement with a consumer's statement, she was a bit defensive. However, on her very next call she went into "yeah", "yeah", "yeah", and then in mid-sentence said, "Oh my gosh, I'm saying 'yeah'!" Of course, that didn't make for a great call with that consumer, but the enlightenment that came from it caused a definite positive behavior change from then on." (3)

Sending the Wrong Message

Audio is the only sensory experience over the phone; therefore, the power of language is magnified. Regardless of industry, some words simply send the wrong message. There have been countless studies about the benefits of positive language in service settings. Negative words have a harmful impact on customer relations. Discovering that representatives are abusing negative terms could be an indicator of a larger issue. Speech analytics gives a business the unique ability to detect negative language and remedy it before it can cause serious reputational harm. Below are examples of most commonly used words that could be damaging to a business.

Simple changes in language like avoiding negative words like "can't," "won't," or "don't" can improve customer satisfaction by 18.5%. – Harvard Business Review (4)

CAN'T

I can't help you… I can't get the product for you… I can't take your call now…
A representative repeating the word "can't" is destroying confidence in your brand by giving the impression of incompetence. When your phone reps tell a consumer, client or customer that they "can't" they are telling them that *your business* "can't."

DON'T

I don't know… We don't do that… You don't understand…
"Don't" phrases put people on the defense and invite confrontation. "Don't" translates to "doubt" in a caller's mind; doubt the representative can help, doubt they understand the caller's needs, doubt they made the right choice choosing your business. "Don't worry" expresses a lack of empathy.

SORRY

I'm sorry… Sorry I can't… Sorry we don't…
Though apologies may be necessary in some instances, the word is most often used as conversational filler and can come across as insincere. The two most common uses for "sorry" in business-call scenarios are apologizing for being incapable of fulfilling a request or an admission of fault. Either way, it projects weakness and hurts the credibility of your business.

Leveling the Playing Field

Speech Analytics software is capable of processing information at a rate otherwise impossible. It can organize and compile statistical data that would take years using traditional research methods. This tool eliminates the need for research teams, and gives smaller organizations the same opportunities for competitive advantages as the large corporations.

Reduce Cost While Increasing ROI

TechTarget, a company that offers data-driven marketing services to business-to-business technology vendors, and listed by *B2B Magazine* in the Media Power 50 list, reported that implementing speech analytics software will pay for itself in three months (6). There are many ways that employing speech analytics works to reduce cost and increase ROI. By identifying customer attitudes and market trends, you eliminate unnecessary spending and optimize marketing efforts. Speech analytics provides the ability to increase revenue in many ways:

- Easily identifies trends allowing a business to respond faster and remain competitive.
- Automates the monitoring process which frees up senior staff so they can spend more time with clients and focus on better training of support staff.
- Improves customer-relation results in increased customer loyalty and repeat business.
- Helps to prevent losses by exposing legal hazards or attempts at fraud.

Results You Can Measure

Many companies are taking advantage of speech analytics technology with measurable results. The following is a compilation of case study results and professional feedback concerning outcomes witnessed by a variety of businesses in the first year of implementing speech analytics technology. *Please note some businesses wished to have their identities withheld for marketing purposes.*

Car Insurance Provider

The implementation of speech analytics enhanced cross-selling efforts and saved the company $2.16 million in the first year by ensuring phone representatives recommended in-house auto body work when processing claims. Reports also indicated the software identified 11 fraudulent calls within the first few months preventing payouts of over $500K. (7)

Apex Credit Management

This UK-based debt collection agency reported a 15% rise in conversion rates with a 30% increase in payments per agent, *hourly*. They also recognized a 20% boost in liquidation rates and are saving 30 hours a month on management labor. (8)

Ventura

A company specializing in call center outsourcing, Ventura used speech analytics implementation to revise their operational processes. The result shrunk average call handling time by 4 seconds. This had an astronomical impact on the ROI for a center that handles upwards of 30k calls per day. (8)

Earthlink

This internet service provider identified various areas for improvement in customer-service practices and reported $650K in savings in their first evaluation since implemented speech analytics. (8)

Telemarketing Firm

A company centered on phone-based sales, this telemarketing firm utilized speech analytics software to identify successful scenarios involving the up-selling of a specific product. The data generated was used to adjust scripts and improve training. The company reported a 50% increase in product sales within five months. (8)

eBay

This popular online retailer and auction site reported a 9% improvement in customer satisfaction with an 18% boost in first-call resolution after employing speech analytics. They also cited a 19% increase in the average order value within the first two years of implementation. (10)

Collection Agency

This US-based collection agency implemented speech analytics software after the discovery of a dramatic increase in FDCPA violations. In the initial analysis, they were able to identify over $200k worth of potential violations enabling them to target problem areas and rapidly retrain agents. (8)

> "Many companies are still confused about the business value that it would bring, even though they know it's a valuable tool... What I would recommend is that you understand and identify the opportunity cost of not deploying a speech analytics system - what happens if you don't gain the insights... How many of your customers do you lose...? How much do you lose related to agent productivity because you don't have one?" - Omer Minkara, Senior Research Analyst at Aberdeen Group (9)

Taking the Leap

The decision to implement speech analytics into your business process is a big one; it often involves a serious initial investment and commitment from businesses. Many businesses have difficulty realizing the potential for these systems and therefore fail to generate a viable business case for one. Because the process can sound intimidating, proprietors are often surprised to learn there are many scalable options available to them. Speech analytics is a rapidly growing industry. Choosing a solution that is appropriate for your business is likely easier than you may think.
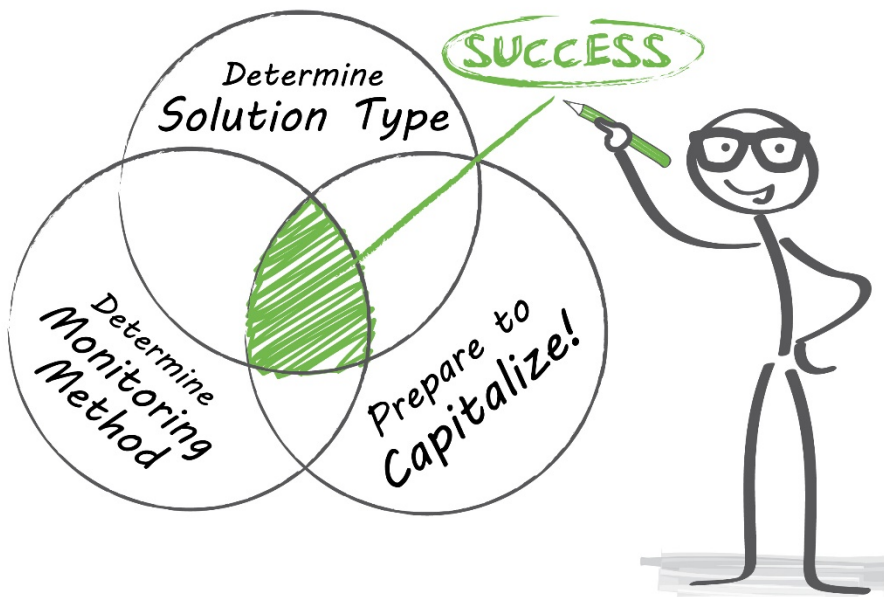
Three Steps for Successful Implementation

Step 1: Determine the Type of Solution That Is Right for You

While the basic function of speech analytic systems is fairly universal, their functionality, from product to product, can be very different. Before investigating any potential systems, you will need to have a good gauge of how you would like it to serve your business. It is a good idea to identify some specifics before you begin to contact vendors.

- Is there a distinct area of customer relations that your representatives find troubling?
- Are you experiencing particularly high employee turnover or low customer retention?
- Is your business regulated by compliance agencies?
- Do you rely on phone-based sales and incentives?
- Can you identify words and phrases you want your representatives to say? Or not say?

Primary areas of consideration when selecting a system:

Compatibility: Is it compatible with the systems you already use? Will it require the implementation of new hardware, software or call recording devices? Compatibility will factor into the overall implementation cost so it must be a key consideration in your choice.

Ease-of-Use: A tool is only as effective as the person using it. Your speech analytics system could have top of the line features, but will be worthless if you cannot take advantage of them. You need to be certain the system is user-friendly and intuitive. If you need to call IT support every time you want to add a new search term or change report parameters then it may not be as cost effective in the long run.

- What are the out-of-the-box features?
- Do they offer immediate value?
- Is it plug-and-play?

Speed: Processing speed is a primary area of concern. One of the advantages of these systems is getting up-to-date information. The amount of time it takes for audio to become searchable is just as important as the search retrieval times. Time is money. You should carefully consider the processing speeds of the system and know in advance whether it utilizes a *Phonetic* or *Transcription* method for analysis. These terms were discussed in a previous section: [Two Primary Strategies for Processing Audio](#).

Scalability: Is the system capable of growing with your business? Purchasing a speech analytics system is a serious investment. You will be employing it to enhance your processes and ultimately increase your ROI, so you don't want to have to replace it when you begin to see results. In terms of scalability you also want to make certain the system doesn't cut corners to accommodate that ability; for example, some systems may limit search terms in an effort be more adaptable. In some circumstances, this can negatively impact the ability to access all the significant information in the audio. Language is also an area for concern if there is a possibility your business could expand into new geographical areas in the future. You should consider the current and future need to support different languages.

Step 2: Determine Whether to Self-Monitor or Hire a Monitoring Service?

You will have two options when implementing speech analytics into your business practices; whether to self-monitor or hire a service. There are benefits to both.

- *Self-monitoring* gives you total control over the process. Terms and reports can be adjusted on a whim, and you'll never have to wait for a response. In-house solutions also can eliminate security concerns associated with data sharing.
- *Hiring a service* however means getting expert analysis from proven processes; there is no need for dedicated staff or training, no learning curve to impede results.

Both options can be affordable, the choice must be evaluated based on the specific needs of your business and what the existing infrastructure can support.

"What's encouraging is that technology vendors are often doing double duty as providers of systems for premises use and services for on-demand use. This gives organizations the ability not only to choose what works for their current business need but also offers them a simple migration path as their business requirements change." K. Dawson | Call Center Magazine (11)

Step 3: Be Prepared to Capitalize on the Results.

Whether you chose to self-monitor or hire a service you must be prepared to capitalize on the results. This means having a plan for sharing data and reports among departments, preparing supervisors for making rapid changes, providing new training strategies and adapting business processes. The success of implementing a speech analytics lies in the company's commitment to utilizing it. When implementing a tool this powerful, you will only see maximum return on investment if you are unlocking its full potential.

"... you can put the power of opportunity identification in the hands of even the least technical and analytical individuals in an organization." – Chris Crosby CEO of Latigent on the power of analytics. (2)

Conclusion

Speech analytics technology is suited to nearly every industry. There are countless creative ways a business can reap the benefits from data mining their call audio. Employing speech analytics has been proven to bolster business processes, facilitate better customer relations and increase return on investment. When so many businesses are making the leap to employ these systems, it soon becomes necessary to jump on the bandwagon to remain competitive.

Afterword

KG Hawes offers a variety of services and ready-made product solutions. VoizTrail® Communication and Compliance Suite offers a scalable services and solutions that assist businesses in bridging the gaps in their performance potential. Utilizing the transcription method for audio processing, VoizTrail® delivers concise reports guaranteeing the most accurate data. Unlike other off-the-shelf commercial solutions, all the features of the VoizTrail® Suite can be customized to the unique needs of your business. VoizTrail® facilitates high-end performance monitoring, training support, improved client services, regulatory compliance and dispute management. Additionally, KG Hawes offers VoizTrail® customers an exclusive service options for utilizing our experienced professional auditing staff. With the proprietary services, you still benefit from all the features of VoizTrail® without the necessity of needing a dedicated-monitoring staff. And your calls get audited with a 24-hour turnaround.

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