

Mining **audio** interactions in your contact center.

Nuance Transcription Engine – for fast, low
cost collection of the spoken word.

Big Data analytics and the customer experience

Whether you're already embracing the commercial opportunities presented by Big Data analytics, or just thinking about dipping your toe in the water, one thing is abundantly clear. Your organization's ability to harness the power of Big Data will have a profound effect on its chances of success - with one recent study predicting 40% of today's leading companies will be displaced from their market position by digital disruption in the next five years.¹

If you're investing in Big Data analytics, the customer experience is likely to be a major focus for your efforts. A 2015 survey by Gartner, for example, found that among the more than 75% of companies that are investing or planning to invest in Big Data in the next two years, customer experience dominated as the primary goal of 64% of Big Data projects.² And the customer experience isn't only a priority for consumer-facing organizations. A 2014 Accenture study found that as business-to-business customers increasingly behave like consumers, 85% of B2B supplier executives now rate customer experience to be 'very important' to strategic priorities.³

These results are echoed in a 2016 survey by Marketforce and Tata Consultancy Services⁴ of senior managers from over 20 consumer-facing industries. Among its respondents:



92% agreed that data-driven customer insight must be a higher priority if their organization is to keep pace with its competitors.



67% expected their organization to significantly increase investment in data-driven insight in the next five years.

85%

of B2B supplier executives now rate customer experience to be 'very important' to strategic priorities.³

¹ Global Center for Digital Business Transformation, a Cisco/IDC initiative, June 2015

² www.gartner.com/newsroom/id/3130817

³ Accenture research, B2B Customer Experience: Start Playing to Win and Stop Playing Not to Lose, June 2014

⁴ Marketforce and TCS, 20:20 Customer Insight: Navigating the New Data Ecosystem, May 2016

So if you're looking to improve your customers' experience through Big Data analytics, where are you most likely to source your data? The Marketforce/TCS survey found that:

- Organizations were most comfortable with structured metrics and transactional data, along with internally generated unstructured data such as contact center notes.
- Web-based tracking data, such as cookies and clickstreams, were identified as a 'very useful' source of customer insight, as this data can be used to build a detailed picture of customer behavior, and mapped against fine-tuned segmentation to enable the online experience to be improved to minimize abandonment and maximize conversion.
- While cookies and clickstreams have been filling data warehouses for years, the power of these data flows has reached a new level with semantic search which uses clickstreams, text analysis and synonym mining to understand the intent behind a user's browsing habits.
- Data from mobile apps, especially when linked to location data, is proving a powerful new tool in deepening understanding of the customer.
- Although 53% of respondents said social media data was 'very useful' in deepening customer understanding, 76% agreed that their organization had yet to identify how best to interrogate social media data to deliver truly useful customer insight.

The problem of incomplete insight into the voice of the customer

Against this background, a major issue that has been constraining enterprises in their Big Data analytics has been incomplete insight into the voice of the customer. Among the most common pain points being experienced include inaccurate call classification, a limited view of customer interactions, and siloed systems that do not consider all the emerging channels that customers increasingly want to use. Organizations can also routinely experience operational inefficiencies such as the wasted time and expense of analyzing inaccurate data, difficulties with improving agent/caller engagements by providing agents with more historical data, and how to assess agent performance.

So how can you build on traditional data sources like structured and transactional data, web-based cookies and clickstreams, to drive a more intimate understanding of customer needs, behaviors, and preferences – as well as increasing efficiency and reducing costs? And in particular, how can you enhance your Big Data analytics with information sources as diverse as the everyday conversations taking place in your contact center; what people are saying about you in YouTube videos, on radio or TV; or how consumers are reacting on social media such as Twitter or Facebook?



Nuance Transcription Engine

The Nuance Transcription Engine (NTE) is a highly accurate, automated transcription solution which unlocks the data trapped in multi-speaker audio to enable Big Data analytics, audio data mining and more.

NTE is a powerful, fast and accurate engine that can quickly transform massive amounts of recorded audio into actionable assets across a wide range of industries. By applying highly accurate (up to 88%) transcription capabilities, NTE quickly and reliably produces search-optimized text output from multi-speaker audio files, allowing organizations to turn enormous volumes of audio into meaningful assets by mining the wealth of data they contain.

With support for over 20 languages, more than 35 dialects, and with additional languages being rolled out regularly, NTE helps businesses increase efficiency and streamline operations around the world, by supporting the transcription needs of a wide range of organizations and applications including freeform audio in analytics, enterprises, broadcast media etc. For example, with NTE you can:

- Transcribe large volumes of audio content within your contact center to provide rich customer insights and improve service.
- Produce rapid transcription of broadcast media in order to understand and analyze what is being said in near-real-time worldwide.
- Fully transcribe corporate audio and video assets for rapid searching and indexing.
- Capture and document what is being said in a conference room or interview to create accurate automated archives of critical conversations.

By transcribing speech content with the highest accuracy in the industry, at remarkable speed, and making previously inaccessible unstructured data available for analysis, searching and indexing, NTE can also act as a key enabling technology for speech analytics or insights pertaining to compliance. Pre-recorded audio can, for example, be processed in one of three modes balancing speed, accuracy, and hardware requirements:



Accurate mode operates at 1x Real Time Factor (RTF), making it possible to process 1 minute of audio in 52.2 seconds and with maximum accuracy (88%).



Fast and accurate mode enables a trade-off between speed and accuracy, operating at 3x RTF, and processing 1 minute of audio in 18.6 seconds with 87% accuracy.



Warp mode operates at up to 10x RTF, and enables processing of 1 minute of audio in just 4.2 seconds with 82% accuracy.

NTE can also transcribe live conversations, streaming results after a pre-configured amount of audio has been processed, and making transcription available almost immediately after the words are spoken.

Available in
20 languages
and 35 dialects

To provide organizations with the most meaningful insights and appeal to a wide range of applications, NTE also has two output formats, designed to power analytics / data mining, and those requiring formatted text:

- The first output format - **Word Lattice with Metadata** – is optimized for search/analytics. It takes audio recordings of a conversation or an audio stream, and returns a text transcript of the dialogue, including metadata such as time stamps, meaningful probability of best choice and alternative words, and word confidence. In pre-recorded audio, NTE can identify and assign transcript elements to specific speakers – even if the audio file was recorded in mono – and flag non-speech audio such as noise and silence.
- The alternative output style – **Formatted Text Output** – uses post-processing to make the output easier to read for transcription and advanced analytics.
- In both formats, organizations can easily customize the vocabulary for their application (for example by adding product or people’s names at runtime), or create a set of specialized language models offline and activate them selectively at runtime.

Closing vital customer experience gaps in your Big Data analytics

If you’ve already invested in Big Data analytics, it may be that you’re using your own in-house tools, off-the-shelf or third party software. By using NTE’s open application programming interfaces (APIs) and secure Web Services interface to integrate with these solutions, there are many different ways in which you can utilize its powerful capabilities to generate insight into aspects of the customer experience that have previously been hidden, or have simply not been cost-effective to analyze.

Many businesses today are aiming to improve the customer experience by analyzing data from their ERP and CRM systems, supplemented by text input from sources such as web pages, text messaging, web chat facilities etc. The common factor in these kinds of sources is that it’s relatively easy to collect and mine data that has been **written**. What NTE adds to this process is the ability to extend the scope of multichannel analytics, by also making information that has been **spoken** machine-readable. The following are therefore just some of the many use cases where NTE can help to close vital gaps in Big Data analytics – with more being identified all the time.

Inside the contact center

Clearly understand why each of your customers is calling

Understand in detail why every single one of your customers (rather than just a sample) is calling, using their own words – for example to assist with call classification, topic spotting, emotional or sentiment analysis, or indexing calls to make them searchable through simple text queries.

Identify which of your contact center agents are delivering the best results, and why

Creating a text record of customer/agent conversations, and then collecting and analyzing not only the words being spoken by your customers, but how your agents are responding, can provide important insights into why certain agents are performing better than others, help identify and share best practices across your contact center team, and assist with workforce optimization (WFO).

Provide near-real-time assistance to your agents, during their calls

If a contact center agent is struggling with a call, a customer is getting agitated, or the agent is not following their script, NTE can assist in feeding keyword detection and topic spotting technologies. This enables agent rescue and allows you to provide whisper coaching in near-real-time during the call.

Ensure all your agents are consistent with their scripts

If yours is a business where compliance is a priority, it can be vital to ensure that your contact center agents are delivering your compliance statements correctly and consistently. NTE makes it easy to automate the process of confirming that all agents are reading regulatory language verbatim, analyze individual agent performance, and make corrections as necessary.

Outside the contact center

Enable real-time audio/social analytics

When news or comments related to your business hit the media, you may not only want to know about it, but link this to social media activity to see how the news has been received. If you monitor TV, radio or news feeds, for example, NTE lets you mine the real-time audio to produce text data that can be fed into your analytics or AI engines; see what mentions are being made of your company or products (e.g. following a launch); and accurately assess how social media has reacted in the following minutes, hours or days.

Simplify audio/video indexing and searching

Many businesses have published vast amounts of audio/video on the web, and/or created libraries of audio/video assets which, unlike web pages, can be very poorly indexed. NTE enables these resources to be comprehensively indexed, made web-searchable and minable; and also makes it possible, for example, to identify the positions of specific pieces of content within audio/video files.

Track and transcribe webinars, conference calls and phone interviews

NTE offers a fast, easy and low cost way to produce transcripts of audio conferences and phone interviews, enabling organizations to easily archive and retrieve these events, as well as develop next-generation conferencing platforms designed to automatically identify key actions and themes in near-real-time.

Add a new dimension to market surveys

If you're engaged in market or customer satisfaction surveys, NTE helps support free-form surveys by enabling customers to provide open-ended answers, and offering a fast and efficient way to analyze voice responses.

Replace manual transcription for compliance

Many organizations, for example in the Public Sector, are required to produce transcriptions of conversations that are 100% accurate. When handled manually this can be a costly and time consuming process; while legacy transcription solutions can frequently miscategorize calls, resulting in a high percentage of calls that are compliant being flagged as non-compliant. NTE can be used to augment or replace manual transcription by quickly and cost-effectively producing transcripts that are up to 88% accurate, and which manual agents can then edit to achieve the required accuracy at a reduced cost.

The power of the spoken word

Globally, organizations are leveraging NTE in innovative ways to bring multi-speaker conversations to life. For example:

- [Veritone](#), a leading provider of cloud-based cognitive computing platforms, has partnered with Nuance to include NTE in its solutions.
- A major European Financial Services organization is incorporating raw transcripts captured with NTE into their holistic Big Data analytics strategy.
- Speech and marketing analytics companies across the world are leveraging NTE to power the next generation of their solutions.

Faster, more accurate, more flexible, more secure

As well as enabling these innovative new types of use cases and applications, if you're already using manual transcription or legacy transcription technology, NTE offers a solution that is faster, more accurate, more flexible and more secure.

– **Faster**

Many organizations still use manual transcription services that are typically very slow, costly, and simply cannot support the use cases enabled by NTE – which introduces a whole new level of service compared to that offered by human transcription.

– **More accurate**

In addition to its open APIs, NTE includes tools enabling you to increase transcription accuracy - for example through the ability to add words to existing classes; and overlay the out-of-the-box Statistical Language Model (SLM) with a Domain Language Model (DLM) that uses data related to your particular domain, to enhance NTE's vocabulary and language model.

– **More flexible**

Through its secure Web Services interface, NTE offers greater flexibility than previous transcription technologies in terms of its ability to integrate with existing Big Data analytics solutions.

– **More secure**

While the current trend is towards hosted or hybrid cloud services, many organizations such as those in Financial Services, Healthcare, Government or Intelligence, operate in environments where they cannot or are reluctant to send confidential data off-premises, or allow external access to it - due to concerns around personally identifiable information etc. By enabling transcription to be integrated with existing on-premises solutions and home-grown analytics applications, NTE can transform the security of the transcription process. All data handled by NTE is also encrypted with AES 256 to provide security and PCI compliance.

Find out more

To summarize, you should seriously be considering NTE if you:

- Want to benefit from the analytics opportunities presented by accurate and automated transcription of the everyday conversations in your contact center – to gain deeper voice of the customer insights, improve compliance verification, and/or assist with agent training.
- Are challenged by time-consuming manual transcription of messages left by customers for your organization; need to document customer and agent interactions; or want to increase the efficiency of and streamline your contact center operations.
- Need a way to textually search your audio content, or are involved with any of the many other uses for which fast and highly accurate audio transcription is of benefit.

To learn more about the Nuance Transcription Engine, [click here](#).
Or, to request an evaluation license for NTE please contact customerexperienceexperts@nuance.com.



About Nuance Communications, Inc.

Nuance Communications is reinventing the relationship between people and technology. Through its voice and language offerings, the company is creating a more human conversation with the many systems, devices, electronics, apps and services around us. Every day, millions of people and thousands of businesses experience Nuance through intelligent systems that can listen, understand, learn and adapt to your life and your work. For more information, please visit nuance.com.
