GenAI in motion

Redefining automotive by innovating with customer insights

“With the explosive growth of GenAI, we are witnessing transformative changes in all industries. Organizations are finding ways to transform into innovative powerhouses by enhancing employee and customer experiences. At NTT DATA, we are committed to continuous innovation and providing advanced, effective solutions for our clients. We collaborate with clients to uncover valuable GenAI applications by identifying employee- and customer journey scenarios and pain points, and empowering various business areas to significantly enhance business efficiency and reduce costs.”

Megan Wang, Vice President of Digital Marketing, NTT DATA, China

The GenAI-empowered Voice of the Customer (VOC) solution developed by NTT DATA can revolutionize how businesses interpret and respond to customer feedback in multiple formats and across multiple channels. This comprehensive solution uses advanced AI technologies to gather, analyze and act on customer feedback and sentiments, thereby enabling businesses to respond proactively to customer needs and market trends. NTT DATA offers a service-oriented VOC solution rather than a software-as-a-service (SaaS) product. With omnichannel data integration, adaptive learning capabilities and immediate, actionable AI insights, we enable a more data-compliant, real-time and scalable approach than the limited, periodic and structured data analysis offered by conventional VOC solutions.

Business scenarios

Our business-scenario framework offers a comprehensive overview of how our VOC solution can be applied in specific areas, including strategic planning, product development, manufacturing, marketing, sales, customer service and relationship management. By integrating VOC into these processes, businesses can achieve greater efficiency, enhance customer experience and improve decision-making, all through a close-the-loop system.

VOC for product and sales analysis

Our VOC solution can be used to:

- Identify queries relating to products
- Determine product volumes and trends
- Highlight product-related topics
- Analyze product sales by channel
- Analyze competition and market dynamics

Business scenario

Gain deeper customer of voice to deliver better experiences, highlight the seamless integration of deep business scenarios beyond AI capabilities.

Step 1

Voice monitoring and anomaly indicators

The VOC system monitors customer voice and identifies significant variances in indicators such as satisfaction rate, complaint rate and negative brand voice, in real time. Through a comprehensive dashboard and indicator-management mechanism, it tracks product issues and customer satisfaction.

Step 2

Issue categorization and task distribution

Issues are identified, categorized and compared in order to:

- Find the most positive and most negative voices (best and worst performers)
- Pinpoint key problems
- Analyze customer feedback
- Visualize findings
- Understand core experience issues

If the issues can be resolved through a work order, tasks are allocated accordingly. If not, alerts are automatically sent to remind users to keep monitoring the issue. These alerts are based on the evaluation of several quality indicators, including comparing quality levels, identifying trends, recognizing top issues and understanding the data-source structure. This process helps the system detect and analyze any anomalies in the models.

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Step 3

Issue reception > Issue follow-up > Task-closure request

The relevant team receives and follows up on the issues. Depending on the type of issue (for example, an in-car system issue, hardware recall or product design iteration), the team addresses the problem and tracks the progress. Once resolved, a task-closure request is initiated.

Step 4

Satisfaction tracking and task closure

Product performance improvement (measured by an improvement in voice of the customer) is assessed through indicator monitoring to evaluate the effectiveness of issue resolution. If performance improves to a certain level, it indicates that the issue resolution has enhanced product performance and customer satisfaction, and the task can be closed.

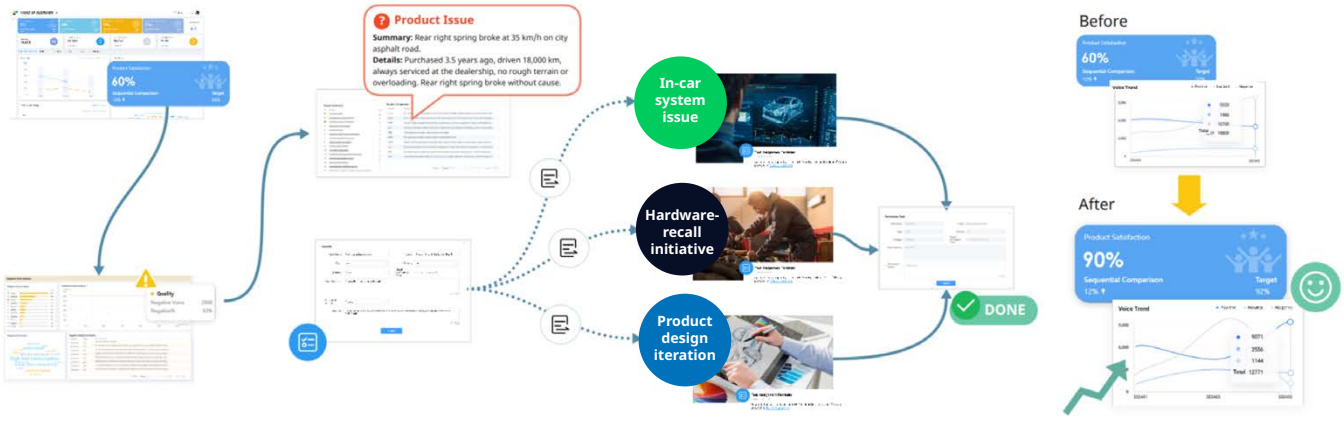
Product

Step 1
Voice monitoring and anomaly indicators

Step 2
Issue categorization and task distribution

Step 3
Issue reception → Issue follow-up → Task-closure request

Step 4
Satisfaction tracking and task closure



Step 1

Anomaly indicator: increase in complaint rate

The VOC system identifies anomaly indicators and captures complaints in real time. Through a comprehensive dashboard and indicator-management mechanism, it tracks product issues and customer satisfaction.

Step 2

Issue categorization and task distribution

When complaints are detected, they are categorized into specific complaint types. This categorization is crucial for visualizing the current state of service experience issues. Tasks are then distributed accordingly, either through work orders (for immediate resolution) or systematic alerts (for issues that require monitoring over a certain period).

Step 3

Task acceptance and processing

The relevant team receives and follows up on the issues, addresses the problems and tracks progress. Once the issue is resolved, a task-closure request is initiated.

Step 4

Negative complaints reduced and task closure

When negative complaints have reduced and performance metrics have increased to certain levels, the issue is deemed resolved and the task is closed.

VOC for customer feedback and complaints

In this scenario, the VOC solution is used to:

- Observe data and voice-sentiment trends
- Understand regional service conditions
- Analyze customer complaint handling
- Analyze positive and negative service experiences
- Identify feedback on service quality

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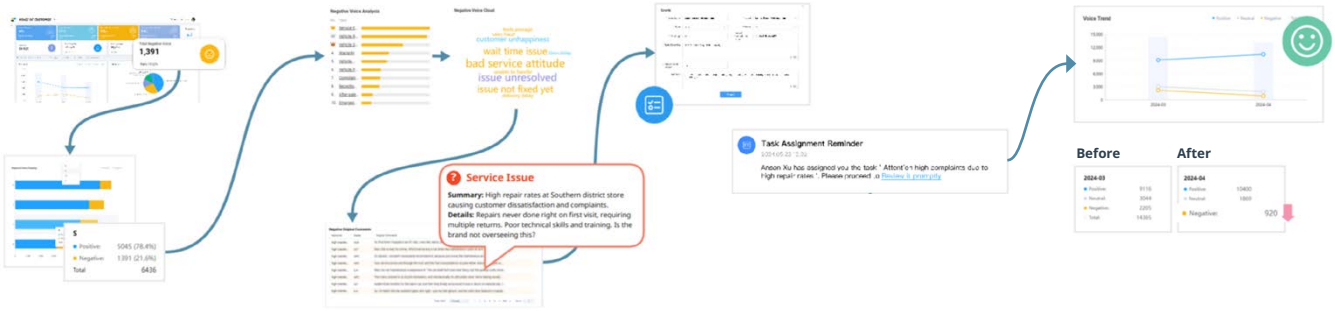
Product

Step 1
Anomalty indicators: complaint rate increase

Step 2
Issue categorization and task distribution

Step 3
Task acceptance and processing

Step 4
Negative complaints reduced and task closed



Step 1

Anomaly indicator: high negative voice ratio

A significant increase in the negative voice ratio indicates potential issues affecting the brand or product, highlighting the need to review the negative sentiment.

Step 2

Issue categorization and task distribution

Issues are categorized based on the nature of the negative sentiments. Tasks are then distributed accordingly, either through work orders (for immediate resolution) or systematic alerts (for issues that require monitoring over a certain period). By analyzing the data sources where current issues are most concentrated, targeted improvements can be implemented.

Step 3

Task acceptance and processing

Tasks are accepted and processed by the relevant team. During this process, AI-generated content is used to create PR and marketing content that is meticulously tailored to the style of each channel, such as Facebook or TikTok. AI-generated content is used to engage with audiences on social media and PR platforms, addressing their concerns, sharing updates and thereby restoring confidence in the brand. This strategic approach enhances the appeal of the content and significantly improves channel distribution efficiency.

Step 4

Total negative voice ratio decrease and task closure

Once negative sentiments have been reduced to an agreed level, the task is closed.

VOC for marketing and public relations management

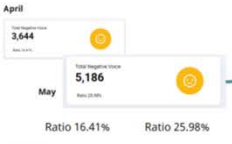
In marketing and PR, VOC can be used to:

- Identify trending discussion topics
- Analyze topic sentiment
- Identify high-frequency keywords
- Detect and address PR issues
- Track the effectiveness of issue-solving outcomes
- Analyze the performance and impact of various activities
- Analyze trending feedback

Marketing and PR

Step 1

Anomaly indicators: high total negative voice ratio



Action
Total Negative Voice Ratio spiked in May. **Time to review negative sentiment.**

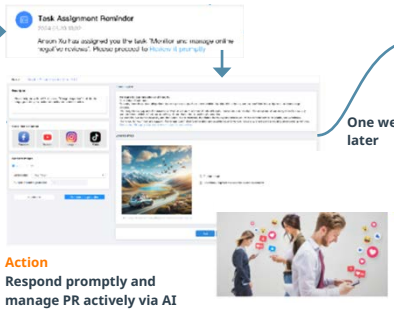
Step 2

Issue categorization and task distribution

Step 3

Task acceptance and processing

AI-generated content



Action
Respond promptly and manage PR actively via AI generate content and post on social media and PR platforms.

One week later

Step 4

Total negative voice raio decrease and task closure

Negative sentiment successfully reduced.

Total Negative Voice Ratio dropped from 25.98% to 13.16%.

VOC in quality and maintenance

- Identify key quality and maintenance issues.
- Understand the geographical distribution of issues.
- Uncover competing products' quality feedback.
- Observe channel trends in quality-related feedback.
- Support risk warning (when an indicator reaches a certain threshold) and closed-loop management (following up on the issue or task).

VOC in competitor analysis

Our VOC solution can be used for both market and product competitive analyses. Using indicators from various dimensions, such as sales data, competitor highlights, equipment comparisons, top issues, performance metrics and feedback analysis, it identifies key competitors and analyzes customers' purchase intentions, reasons and satisfaction levels. An in-depth analysis of selected models is conducted to identify competitive factors, including winning and losing elements.

AI agents

At the heart of our VOC solution are the AI agent technologies retrieval-augmented generation (RAG), prompt engineering, embedding, knowledge graph and LangChain. and LangChain. These provide the cognitive framework and processing power that enable AI agents to efficiently analyze and understand customer voice.

The AI agents streamline the processing of customer voice by first transforming the structured information of documents or data into embedding vectors. This conversion allows the AI system to process and navigate the content efficiently, identifying entities within the text. By embedding these into vectors, the AI system learns to process the deeper meanings of and connections within the text. The adapter links these embedding vectors to the tagging system, ensuring precise information clustering, while textual tokens are further analyzed to identify key information and concepts.

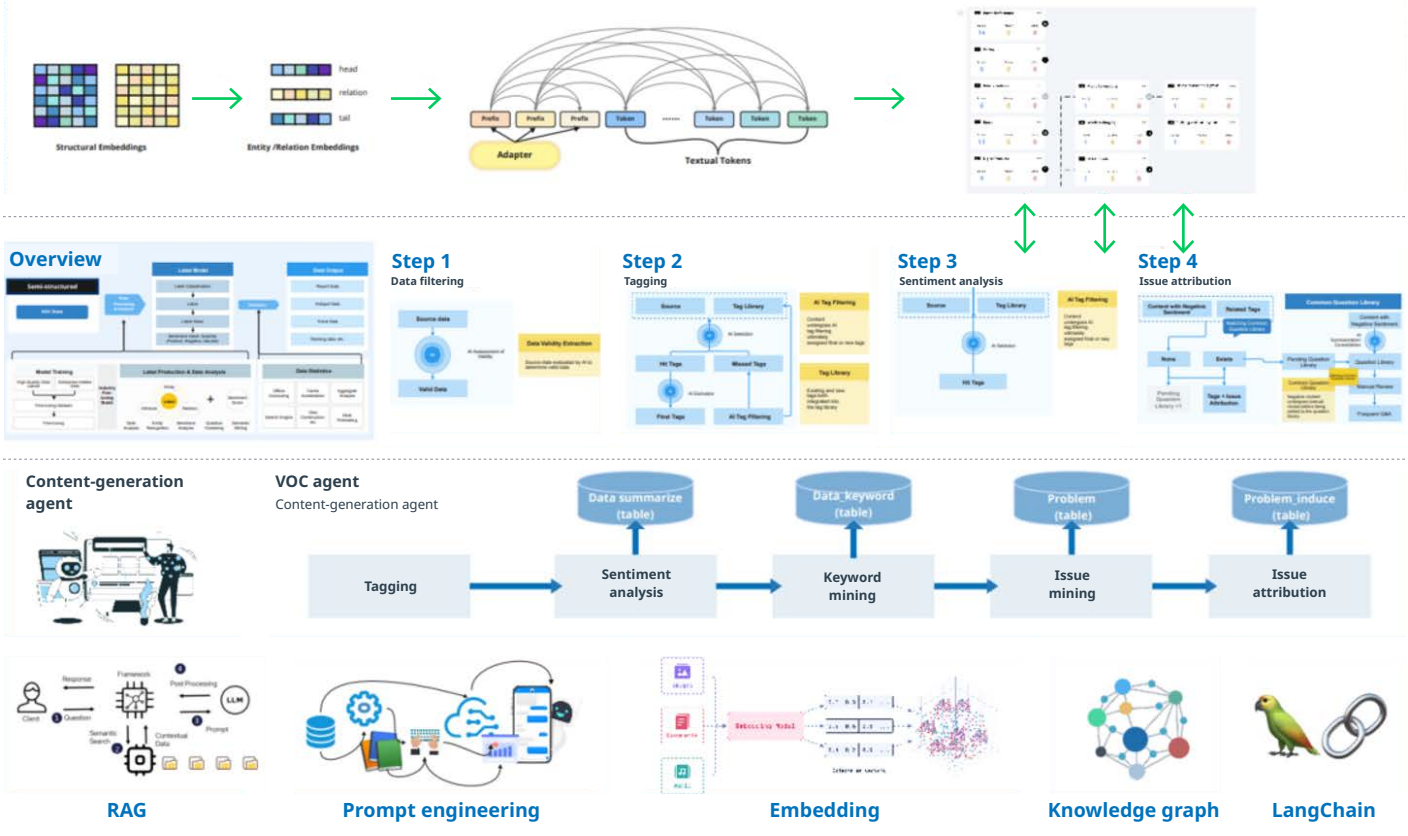
Starting with data filtering, the AI agents evaluate the source data to ascertain its validity. During the tagging process, AI identifies data that matches tags within the tag library through AI selection. Data that does not correspond to any existing tag is filtered, reviewed and, if appropriate, added to the tag library. This mechanism ensures a dynamic and precise tagging system that is constantly evolving and refining the tag library to enhance data categorization and retrieval. Content flagged by AI for negative sentiment undergoes further analysis and mining to identify underlying issues. These issues are then matched with the existing common question library. If a match is found, the issue is merged with the existing issue. However, if no match is identified, the issue is automatically clustered by AI as a new problem, which ensures the common question library is continually updated.

Our subscription-based commercial model gives clients access to data-science expertise and solutions in a way that is flexible and ensures a continuous flow of value.

AI agents

AI agents use techniques such as prompt engineering, AI-generated content (AIGC) and RAG to ensure data is preprocessed, analyzed and applied effectively.

Enterprise tagging



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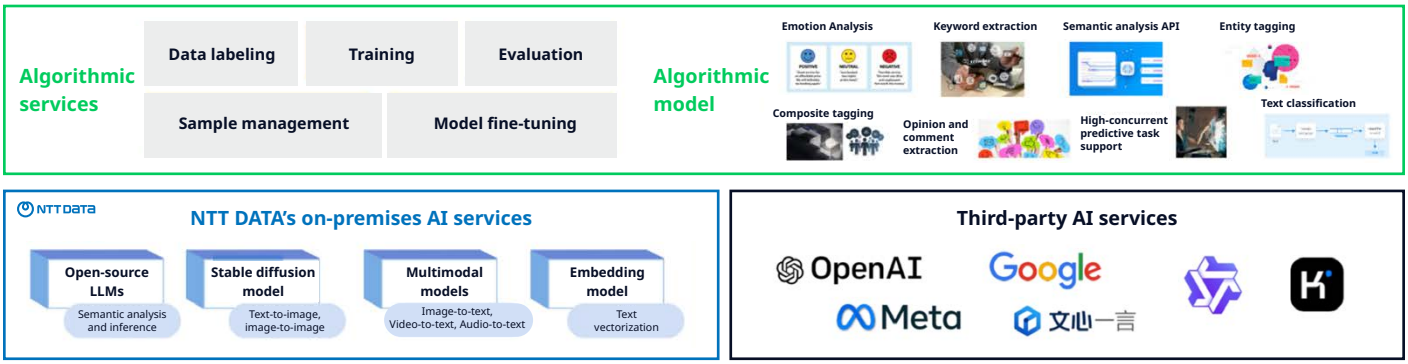
Large language models

The VOC solution leverages large language models (LLMs) and diverse AI services. NTT DATA algorithm services include data labeling, training, evaluation, sample management and model fine-tuning, ensuring robust and accurate AI models. The algorithmic model encompasses advanced functionalities like emotion analysis, keyword extraction, semantic analysis, entity tagging, composite tagging, opinion and comment extraction, high-concurrent predictive task support and text classification to comprehensively understand customer voice. Our on-premises AI services offer cutting-edge capabilities, including open-source LLMs for semantic analysis, stable diffusion models for text-to-image conversions, multimodal models for media processing, and embedding models for text vectorization. Additionally, we integrate third-party AI services from leading providers such as OpenAI, Google, Meta, Kimi and Ernie Bot, enhancing our solution with their state-of-the-art technologies.

Large language models

Incorporating LLMs and other models with custom adaptations for algorithmic processing.

LLMs



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Data sources

In the VOC system, data sources are primarily divided into first-party data and third-party external data.

First-party data encompasses information collected directly from various customer interaction channels, including contact centers, ecommerce platforms, community feedback and customer surveys. This data includes customer complaints, outbound surveys, online customer service interactions, in-store voice recordings, purchasing behavior, product reviews, comments and in-car experience feedback.

Third-party external data consists of industry reports and social media insights. Industry reports provide vertical media data and purchased reports offer broader market insights. Social media data, gathered from platforms such as TikTok, Redbook and Facebook, along with search engine results, captures customer opinions from external sources.

Through the application of extract, transform, load (ETL) processes, this diverse data is extracted, refined and transformed into a structured format that is conducive to analysis. The ETL methodology serves as the backbone of our data-integration strategy, systematically pulling data from disparate sources, converting it into analyzable information and warehousing it within the database.

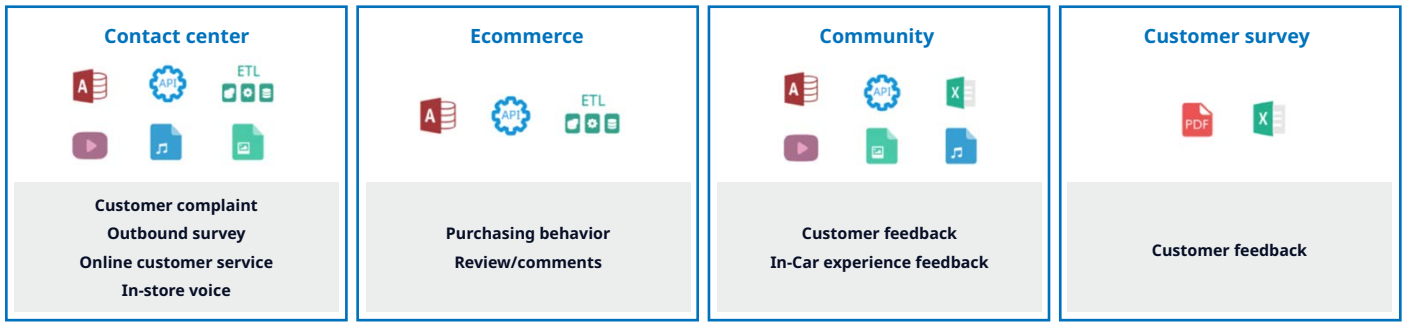
API is also used to facilitate the extraction of this diverse data, while web scraping is used to extract information, especially information suitable for sites that do not offer an API interface. Each data type is transformed and integrated into a coherent format that facilitates comprehensive data analysis.

The conversion and processing of multimodal data ensure that diverse sources of information are uniformly prepared and analyzed, providing a holistic view of customer insights.

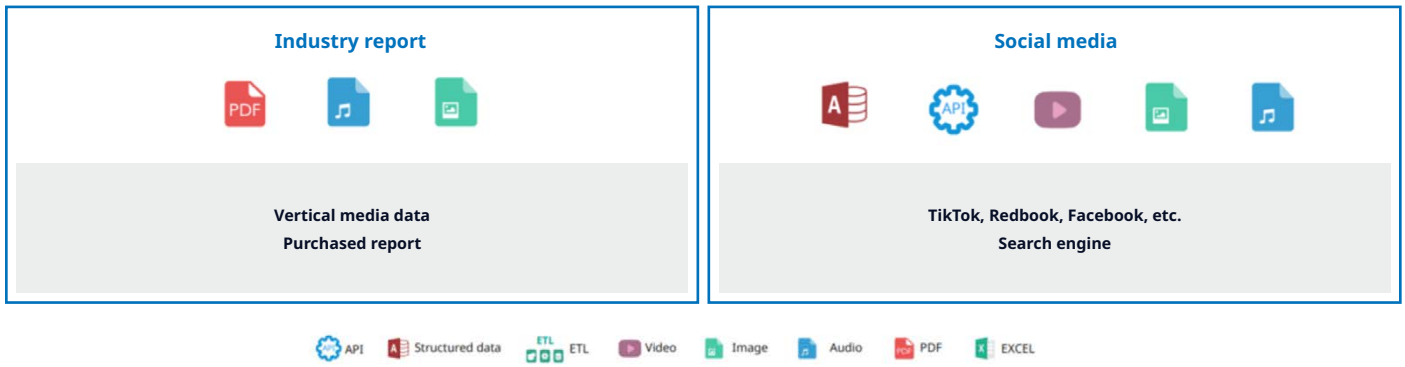
Data sources

Multiformat data capture from first and third parties.

First-party data



Third-party external data



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The GenAI-empowered Voice of Customer (VOC) solution from NTT DATA represents a paradigm shift in customer experience improvement and business empowerment. The seamless fusion of advanced AI with a holistic understanding of customer-centric data offers a 360 perspective on customer feedback and sentiment.

Through its multimodal, multichannel data acquisition and transformation processes, the solution enables proactive business strategies and closed-loop management for effective operations.

Our solution not only captures the voice of the customer but also translates it into actionable strategies that are aligned with the dynamic needs of the market. And its application extends to many other business areas, allowing organizations to achieve higher levels of customer satisfaction, improve their market responsiveness and enhance corporate operations.

Find out more

https://services.global.ntt/en-us/industries/intelligent-automotive-transformation


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