# Convert conversations into customer insights

# Abstract

Customer engagement in today's digital era means hyper-personalized self-service and omnichannel customer experience enabled by conversational AI platforms using voice, chat, virtual agent channels, and cloud-based contact centers. Such platforms mimic human-like conversations that are meaningful, empathetic, and across languages.

Such an ecosystem requires a roadmap for continuous improvement through an 'insight engine' or conversational analytics, which uses data from engagement hubs to extract insights from conversations. This is an essential element to understand trends, customer behavior, and sentiments around business products and services. Also, it generates a roadmap for continuous improvement using analytics. Insight engines help in enhancing customer satisfaction, and organizations' compliance levels through constant monitoring and calibration.

Conversational systems are transforming customer engagement across industries from banking to healthcare, and are becoming increasingly relevant in day-to-day life. Conversational analytics and natural language processing (NLP) are expected to boost analytics and business intelligence adoption from 35% of employees to over 50%, including new classes of users, particularly front-office workers.

Juniper forecasts that chatbots will be responsible for cost savings of more than $8 billion per annum by 2022, up from $20 million this year.

"Augmented analytics will be a dominant driver of new purchases of analytics and business intelligence."
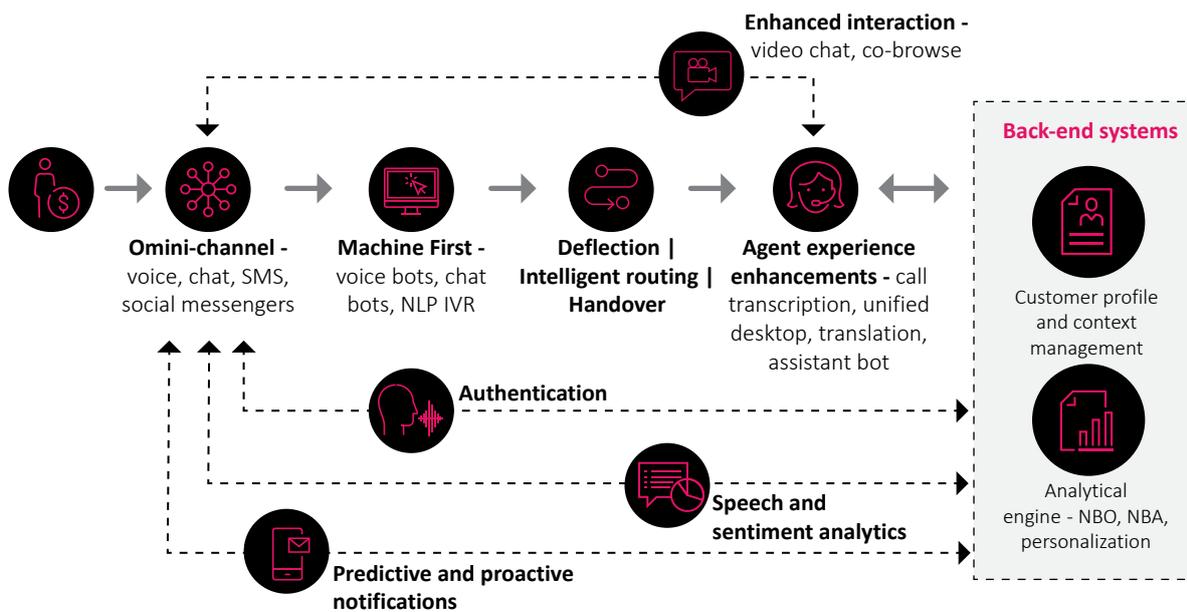
*Gartner*

*Figure 1: The process flow of an insights engine*

The traditional engagement ecosystem has transformed into conversational AI platforms and generates large volumes of data. These have a high potential to produce business intelligence and analytics for improving customer experience as well as business growth. Considering the paradigm shift to conversational AI, the need for a new data acquisition approach and intent-driven analytics will be a business requirement.

While some organizations are aware of the need to derive customer insights from conversational systems data, they face some challenges, which include:

- The unstructured nature of conversational data, which requires new methodologies and processes to derive inferences.

- Multidimensional inferences from conversational analytics. Their obvious purpose includes:

    - Improving the existing customer engagement hub, enhancing feedback, emotions, sentiments, a better understanding of engagement failures, new utterance requirements, and natural language improvements

    - Understanding business trends, service requirements, digital adoption of products, most-asked queries or concerns, most negative feedback, most positive feedback, identification of improvement areas

Continuous improvement of conversational AI platforms requires analytics on conversations. While contact center teams do analyze conversations with the QA team, it is costly and effort-intensive. As conversational platforms become mainstream across industries, the volume of data and the range of insights needed will increase steadily. To derive meaningful insights from them, organizations need to adopt advanced analytics tools.

# Designing conversational experience analytics

Insight engines leverage AI to analyze interactions and derive meaningful insights to drive critical transformational and operational businesses elements. The most pressing business requirement is to understand the kind of experience it provides to customers in the engagement ecosystem. Business focus will be on reducing operational costs through optimal use of AI-enabled delivery models, leading to enhanced customer experience. Additionally, it is essential to understand the trends on products and services, along with associated customer sentiments.
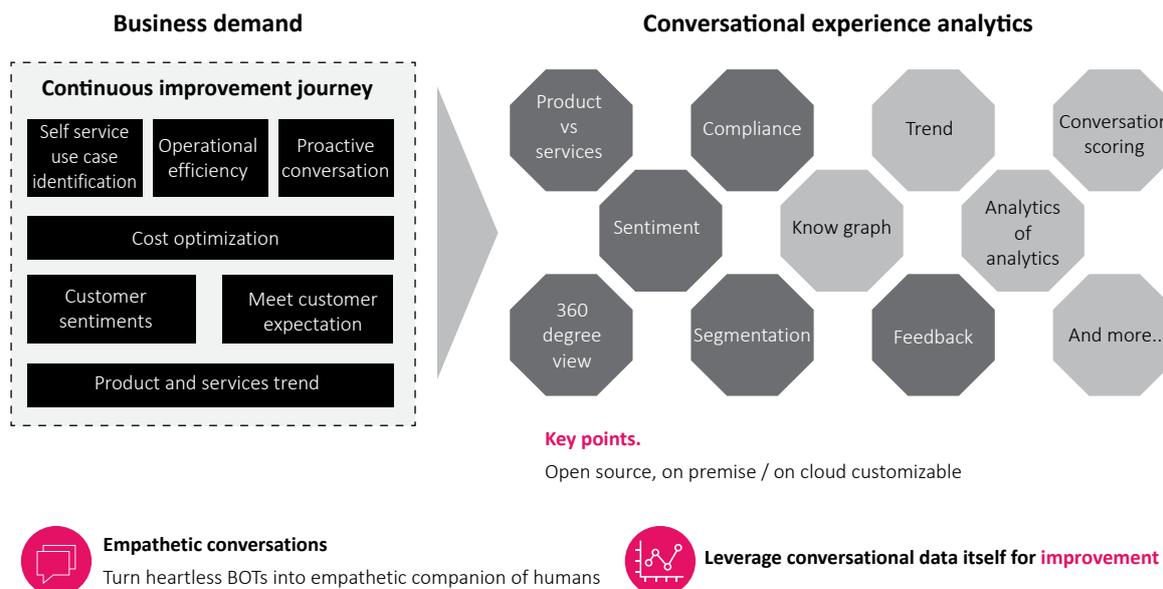


**Business demand**

**Continuous improvement journey**

- Self service use case identification
- Operational efficiency
- Proactive conversation
- Cost optimization
- Customer sentiments
- Meet customer expectation
- Product and services trend

**Conversational experience analytics**

- Product vs services
- Compliance
- Trend
- Conversation scoring
- Sentiment
- Know graph
- Analytics of analytics
- 360 degree view
- Segmentation
- Feedback
- And more...

**Key points.**
Open source, on premise / on cloud customizable

**Empathetic conversations**
Turn heartless BOTs into empathetic companion of humans

**Leverage conversational data itself for improvement**

*Figure 2: How analytics can be leveraged to meet business requirements*

Hence, as per business demand, conversational experience analytics consists of critical features that enhance the customer engagement ecosystem and derive inferences:

- **Products and services trends:** Insight engines help visualize huge volumes of conversations with trending products and services. Trend reports can adopt date- and time-wise distribution, along with customer sentiments. Trend analytics help strategic decision-making to prioritize customer-centric use case enablement on channels preferred by customers.

- **Bird's-eye view of the entire conversation batch (effective storytelling):** Business executives often need to understand bulk conversations through simple storytelling visualizations. This can be accomplished by transforming unstructured conversations into knowledge graphs that can be effectively enabled using NLP. Graphical representation makes it easy to derive insights from relationships across various products and services. Extended bird's-eye view with customer personas can be useful for product recommendations to other customers.

- **360-degree view of every conversation:** Reaching granularity through detailed analysis of each conversation makes it easy for teams from quality assurance, business analytics, or even domain experts to understand the sentiment around entire conversations. Instead of being misguided by overall sentiments surrounding customer experience, businesses can, whenever the need arises, access sentiments of various stages within a single conversation.

- **Analytics of analytics:** This is the ideal approach to viewing trends across months or years. It is critical to understand adoption channels, preferred channels, and sentiments on products or services over a period of time to find trends across diverse aspects of business. It is recommended to have storytelling visuals to report on saved analytics of customer conversations as a time series for critical needs.

- **Missed intent analysis:** This report identifies customer intent not supported by the existing engagement hub, products, and services that are in demand but not in the scope of the virtual agent, shortcomings of the virtual agent, and why customers may prefer to speak with human agents. Missed intent or failed intent analysis ensures continuous improvement of the conversational platform. Such rigorous analyses can help businesses achieve faster and wider adoption of the machine-first delivery model. As per Gartner's top 10 data analytics trends, more than 50% of major new business systems will incorporate "continuous intelligence that uses real-time context data to improve decisions".

# Recommendation for faster go-to-market strategy

- **Futuristic information architecture:** Right data-acquisition strategy for various engagement ecosystem channels is essential for generating advanced analytics

- **Strong build versus buy strategy:** This approach achieves cost benefits and leverages technology at an organizational level to ensure faster deployment and adoption

- Phase-wise implementation approach
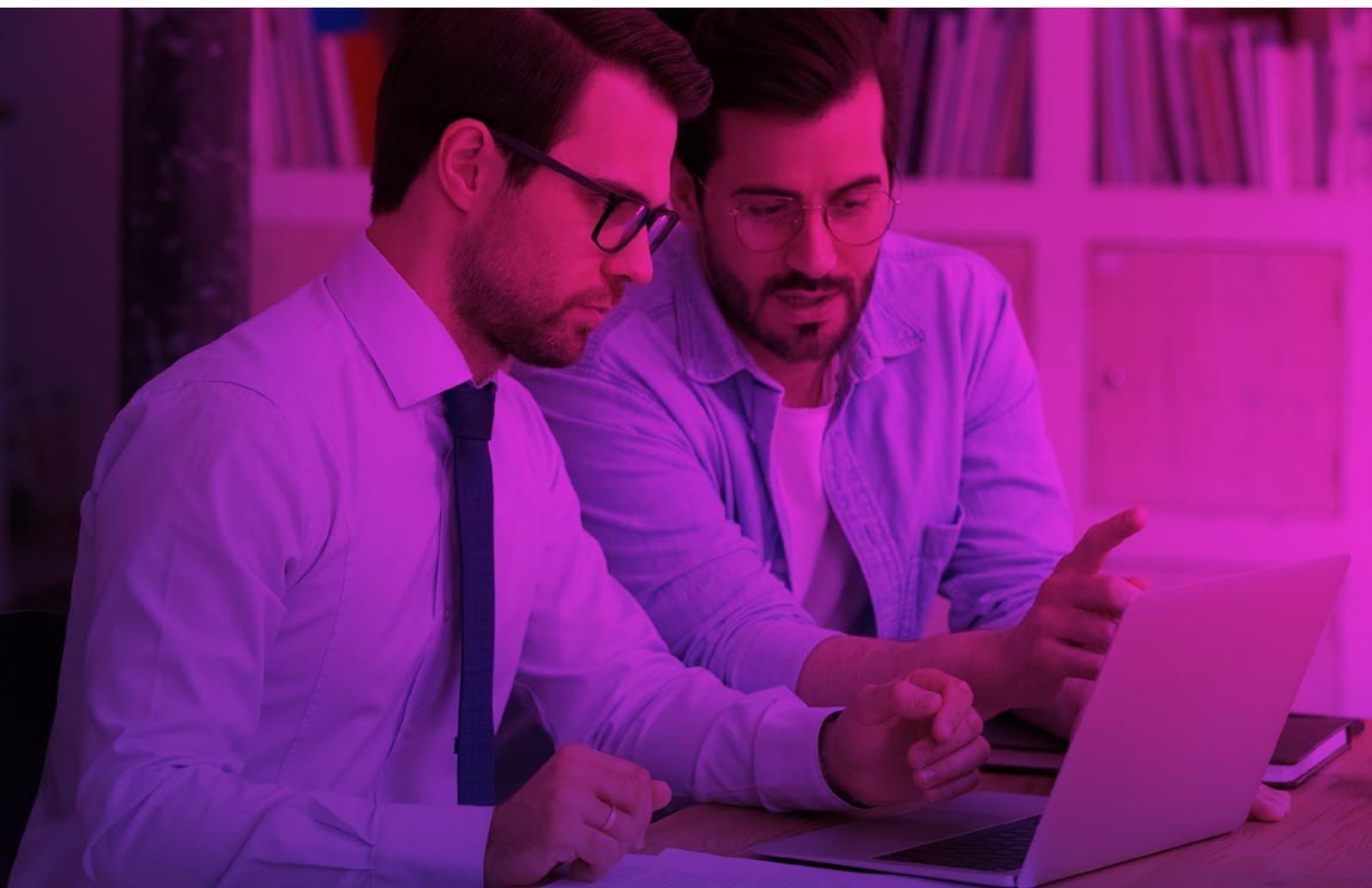
# Unlocking value from conversations

As per TCS design considerations, the solution is built to integrate with existing business technology platforms. This approach can help businesses control the overall technology canvas. Outcome-driven insight engines can enable businesses with predictive, diagnostic, and descriptive analytics. A structured approach to transform the engagement hub into an insight engine will have the following primary pillars:

1. Prepare data ecosystem (information architecture)

   a. Capture conversation data from each channel of the engagement ecosystem (text or voice-enabled chat, social platforms, conversations with virtual avatar or human agent)

   b. Analyze intent and emotions of conversations

   c. Ensure that the customer feedback mechanism is enabled across all engagement channels

2. Transform data

Identify business cases to perform targeted analytics on raw data. Listed are a few primary transformation stages for different business purposes discussed in the paper:

   a. Generate segments of conversations based on sentiments

   b. Create subsegments of product versus services within sentiment segments

   c. Understand customers' intent of conversation and capture it with more business context

   d. Identify products and services being discussed within conversations, along with associated emotions/sentiments

   e. Maintain frequency matrix to analyze preferred channels, along with the respective time zone

   f. Capture information of preferred channels with customer persona

3. Design presentation

   a. Generate storytelling dashboards with transformed data. Sample dashboards can be on product versus services trends, customer emotions or sentiments on products versus services, customer segments with the preferred mode of channels, feedback inferences, weekly, monthly, and yearly comparisons of products, 360-degree view of each conversation for detailed analysis

   b. Establish real-time connectivity of data ecosystem for business users (stakeholders)

4. Derive inference

   a. Presentation layer allows stakeholders to make fact-based inferences

   b. Key decision-making on continuous improvement of customer engagement ecosystem

   c. Retrospective analysis for negative sentiment products, services versus channels

   d. New use-case identification and rollout plan for prioritized channels

# Business outcome

- Strategically understand sentiments around products and services

- Get customer behavior inferences and adoption rate across various channels

- Identify self-help use cases to reduce load on contact centers

- Visualize product and service demand using trend analytics

- Observe conversation quality and compliance

# Conclusion

As customer engagement transforms into conversational engagement paradigms, analytics need to be reimagined, augmented, and redefined for the engagement ecosystem. Analytics can enable businesses to enhance customer experience with hyper-personalization and continuous enrichment of conversational platform.

Customer engagement hubs are also data generation hubs that have the potential to produce business intelligence and analytics that benefit the business while also elevating the customer experience.

Part of service management, conversational insights will not only provide overall insight into customer's sentiments but also into big hitters such as major issues leading to incidents during the period of analysis. In addition, it will provide important feedback to the service design teams regarding key problem areas or faster identification of service improvement needs.

Conversational experience analytics is the stepping stone in the journey toward incremental user experience. Moreover, it offers deep insights by harnessing valuable data assets of the business.

# About the authors

Arvind Sangvikar

Head, Experience & Intelligence, TCS

Arvind leads the business simplification strategic venture for TCS' Global Consulting Practice with the objective to define, develop, and assemble solutions. He has 20 years of experience in IT transformation, IT consulting, systems programming, system integration, and partnership management. He has been managing high-performing, cross-functional teams in delivering complex transformational initiatives across multiple industries and countries.

Arvind is a computer science graduate from Government College of Engineering, Aurangabad, and also has an executive MBA from SIBM, Pune, where he was a gold medalist.

Jinal Shah

Data Science Consultant, Experience & Intelligence, TCS

Jinal focuses on how artificial intelligence, data science and cognitive thinking can solve business challenges. He has more than 15 years of experience and expertise in AI (NLP) adoption across financial services, retail, and manufacturing industries. As part of the product management group, he enables deeper engagement with customers through innovation days and proactive proposals.

Jinal is a computer science graduate and holds a master's degree in computers and data science.

# Awards and accolades

#1 IN CUSTOMER SATISFACTION
2020/21 EUROPE
Whitelane Research

top EMPLOYER | NORTH AMERICA 2021
CERTIFIED EXCELLENCE IN EMPLOYEE CONDITIONS

top EMPLOYER | GLOBAL 2020
CERTIFIED EXCELLENCE IN EMPLOYEE CONDITIONS

ASIA'S OUTSTANDING COMPANIES POLL 2020
ASIAMONEY

STEVIES 2020

CONGRATULATION CIO100 WINNERS 2020

FinanceAsia ASIA'S BEST COMPANIES 2020

DIGITAL IMPACT AWARDS WINNER

CANADIAN HR AWARDS 2020

THE CIVIC 50 POINTS OF LIGHT

FTSE4Good

CDP DISCLOSURE INSIGHT ACTION

2020 Brand Finance® Awards
TOP 3 IT SERVICES BRAND

2020 Brand Finance® Awards
FASTEST GROWING IT SERVICES BRAND FOR THE DECADE 2010 - 2020

AWARDED Superbrands BRITAIN'S CHOICE 2020

AWARDED Superbrands AMERICA'S CHOICE 2020

**Contact**

Visit the Business & Technology Services Unit  page on https://www.tcs.com

Email: BusinessAndTechnologyServices.Marketing@TCS.COM

**About Tata Consultancy Services Ltd (TCS)**

Tata Consultancy Services is a purpose-led transformation partner to many of the world's largest businesses. For more than 50 years, it has been collaborating with clients and communities to build a greater future through innovation and collective knowledge. TCS offers an integrated portfolio of cognitive powered business, technology, and engineering services and solutions. The company's 500,000 consultants in 46 countries help empower individuals, enterprises, and societies to build on belief.

Visit **www.tcs.com** and follow TCS news **@TCS**.