WHITE PAPER

Teradata Vantage– Contact Center Analytics

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Improving Interactions and Optimizing the Contact Center

Call Centers are a critical touch point between organizations and their customers. The interactions that customers have with contact centers greatly influence their perception of that organization, as well as future behaviors. But providing a positive experience can be difficult, especially when an organization lacks the resources to keep up with customer demand.

For example, the Internal Revenue Service (IRS) only answered 1 in 4 customer calls in 2020. At 100 million calls, that means 75 million went unanswered—and 75 million tax problems presumably went unsolved. Since 90% of customers say they trust organizations that provide excellent customer experience (CX) while only 15% trust companies that provide poor CX, it's reasonable to state that there's a significant number of people who distrust this organization. Though customers have no other choice but to use the IRS, it's still imperative to solve the CX problem. Trust in public institutions is necessary for the stability of political systems, and leads to greater compliance with the tax system and other regulations.

One obvious answer to solving the contact center problem is adding more staff. Figure 1 shows how changes in staffing levels directly impacts customer satisfaction and vice versa. However, staffing and operating contact centers accrue significant costs—and on a large scale like the one the IRS needs, that is simply not feasible.

Instead, a better solution would be for organizations to incorporate a modern data and analytics system so they can continually monitor and measure customer satisfaction and changes in customer behavior to align contact center operations with organizational goals.

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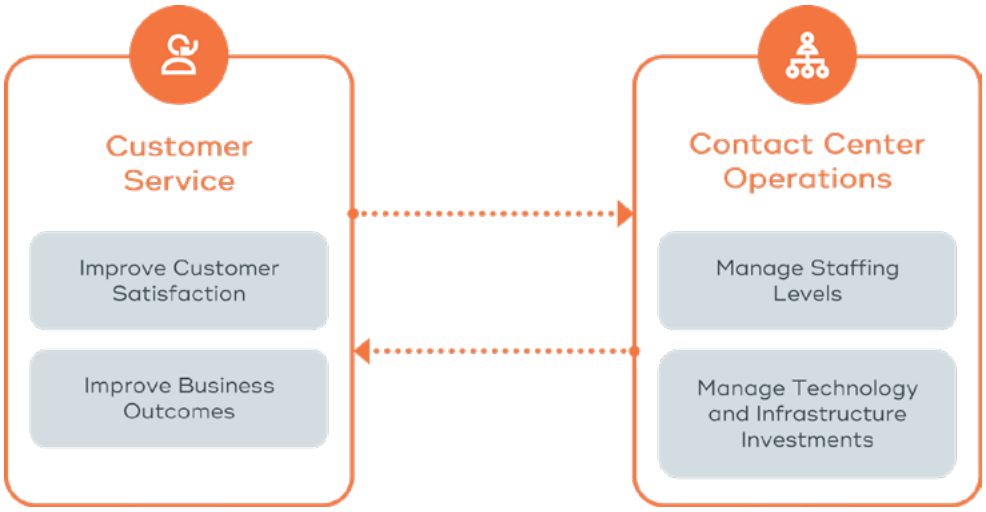

Figure 1: Interplay between Customer Service and Contact Center Operations

Improving Customer Interactions

Monitoring and measuring satisfaction is important because customers expect organizations to know them as individuals and provided personalized experiences at every touch point, be it digital, in person, or social media. Making personalization happen is only possible when the company knows what its customers have done at any given moment and predict what they will do next—across every single channel the company owns.

When companies know that their customers were just browsing their website prior to contacting the call center, then the contact center operators can have better-informed interactions with their customers. Analytics can be used to suggest what the operator should offer based on the customer's history, such as a specific product or message.

Optimizing the Contact Center

Contact centers fulfill an important function in meeting organizational objectives. Depending on the level of customer service required by the organization, the organization can throttle different actions in the contact center. Costs can be reduced by the judicious use of data and analytics, resulting in a fully optimized contact center.

Reducing the Total Carrying Cost

Eliminating or reducing customer interactions over the phone is the most effective way to reduce the total carrying cost of customers. A fully modern data and analytics system that provides descriptive, predictive, and prescriptive analytics—describing and making recommendations and predictions—can do the following:

- Eliminate operational issues: Organizations must understand why customers are calling and reach back into their organizations to improve products and processes. For example, decrease product defects or improve the process for completing an application.
- Improve customer communication: Organizations must look at how information is shared with their customers and the accessibility and clarity of that information.
- Increase first call resolution–Customers contacting the contact center may provide a high value way for the organization to reach the customer either through buying a product or resolving an issue. Reducing the number of calls for a particular case is critical to reducing costs.

Organizations are successful in reducing or eliminating calls by integrating data across the call center and then using analytics for root cause analysis and outlier analytics. Data sources may include account

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information systems, Automatic Call Distributer (ACD), call disposition codes, agent skill from the call center and billing, product, and order management systems.

Conversely, the organization may want to increase calls. For example, if an organization wants to run a campaign to better engage their customers, they may want to talk directly to their customers. Data and analytics will also facilitate these kinds of interactions.

Automate Call Handling

If customer interactions cannot be avoided, the next step is to create solutions that resolve the customer's problem using technology instead of employees. These steps may include:

- Using IVR to accurately route calls to the most appropriate departments or staff to handle caller inquiries and by gathering important background details before an agent takes over the call.
- IVR or website solutions that provide standard information on customer issues (i.e. outages)
- IVR or website solutions that interact with a knowledgebase using voice recognition or entered digits to resolve customer issues (i.e. technical support)
- IVR or website solutions that interact with a knowledgebase and interconnection to customer data that enables customers to automatically solve more sophisticated issues. (ie. bill paying)

The Enterprise Data Warehouse (EDW) provides many solutions in this area including:

- Identifying call types and customer segments for automation
- Integrated channel analytics for performance and to ensure least cost routing for problems
- Data mining to identify root cause issues
- Active DW that interacts with automated channels to improve performance
- Data Sources here include IVR & Web Self Help data (Queues, CED, Click-Stream) and routing information

Reduce Interaction Handling Expenses

There are numerous strategies for reducing the cost of resolving customer issues. These have significant impact on the customer experience, but provide easily measurable results in reducing costs. Some of these include:

- Reduce service levels—longer hold times, shorter talk time targets
- Higher occupancy rates—reduce non-interaction times
- Migrate Interactions from high cost voice to web, chat, e-mail, etc.
- Eliminate non-core activities (upselling, probing, etc.)
- Eliminate low-volume queues and consolidate routing options
- Increase supervisor and manager span of control
- Minimize incentive compensation, especially for inefficient activities
- Redefine jobs to lower pay classifications

Meeting these objectives requires providing customer experience analytics across channels, centers and segments. One of the biggest problems for call centers is that most reporting is operational and improving one statistic leads to unintended consequences in other areas. Comprehensive analytics can help minimize a potential "Whack-A-Mole" approach where institutions are constantly reacting instead of proactively enacting a plan. Sources for data to drive analytics that address Interaction Handling metrics may include Web, E-Mail, Chat, Queues, and Work Force Management (WFM).

Improve Interaction Handling Efficiency

Improving interaction handling efficiency can be done in a variety of manners, utilizing processes, technology and people to drive higher efficiency.

- Implement improved agent solutions such as reducing screens or system interactions, faster knowledge bases (computer vs. paper), etc.
- Implement Computer Telephony Integration (CTI) to utilize machines for data gathering and database interaction before presenting call to agent

- Improve call routing to match caller needs to agent skill set, eliminating hand-offs
- Automated training curriculums
- Call Analytics including unstructured text, customer surveys, quality assurance, and training to drive efficiency techniques
- Efficiency criteria in hiring, firing, and compensation
- Improved accuracy of the work-force management elements including: forecasting, planning, staffing and schedule adherence
- Real-time ability to manage call load balances, transfers, etc.
- Chat-type connection between tier one and tier two agents
- Upgrade technology to reduce call handling times and non-call handling work
- Optimize human resource processes, hiring, training, supervisory, etc.

Call Center analytics moves closer to the customer experience and closer to an active role in the customer experience. Analytics can be used to create not just a 360° view of the customer, but a 360° view of the agent and the individual customer interactions. Data sources that help inform interaction handling include Trouble Ticketing, Unstructured Text, Surveys, QA, Training, CTI and Integrated Case Management Software (ICMS).

Leveraging Analytics In the Contact Center

Single-threaded approaches often fail to balance the needs of a positive customer experience while driving down costs. Alignment programs utilize data and technology to leverage employee-specific skills towards serving the most valuable customer the best. Technology applications used to support these programs include:

- Business intelligence that drives the call handling procedure on a call by call basis
- Customer segmentation in customer databases
- Active scripting that drives call handling based on customer behavior
- Call routing that drives the call based on customer score criteria
- Employee tool kits that enable customer centric behaviors to be delivered during interactions
- Segmentation based Service Level targets
- Next best offers or messages based on analyics

To better improve customer satisfaction as well as optimize operations in all the ways mentioned above, contact centers must have a robust analytic capability. Providing analytic capability starts with having a clean and rich data store of operational and customer data.

Integrate Data

Integrate operational data and interaction data to create 360-degree customer view

- Collect interaction data across channels
- Integrate operational data with interaction data
- Connect the customer across datasets

Data to Insight

Right set of no-code advanced analytics for business users, including:

- Predictive modeling
- Path analytics
- Drag and drop workflow

Insight into Action

Operationalize insights to deliver real-time personalized communications to Contact Centers

- Export based on analytic insights
- Channel orchestration
- Real-time hyper-personalization
- Machine learning

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Figure 2. Three steps required to drive analytic capability

This requires collecting data across multiple channels, such as capturing web browsing behavior or capturing phone conversations. Pulling this data into a common data ecosystem is the easy step. Cleansing, standardizing, matching, and enriching the data is often the biggest challenge.

- If the data store is incomplete, not timely, or inaccurate, then it can't be trusted for driving decisions in the contact center.
- If a customer can't be matched between a web visit and a call, the the organization doesn't have a 360-degree view of the customer.
- If the organization doesn't have wait time data coupled with staffing levels, then it can't determine how to balance call queues with staffing budget.

Contact Center Analytics Approach

Contact centers must leverage a broad set of analytics across an almost equally broad set of integrated data. Therefore, a single source of data that provides trusted answers to questions about customer behavior and provides the ability to prescribe actions is necessary, as seen in Figure 3.

Using Teradata Vantage for Contact Center Analytics

Best Analytic Functions and Engines

Teradata Vantage brings together the best analytic functions and engines, preferred tools and languages, and support for multiple data types within a single environment. Analysts no longer need to worry about where the function or data resides.

The Advanced SQL engine includes embedded analytic functions such as:

- Segmentation
- Sessionization
- Attribution
- Time series
- 4D analytics
- Scoring functions for decision trees
- Machine Learning
- Text Analytics

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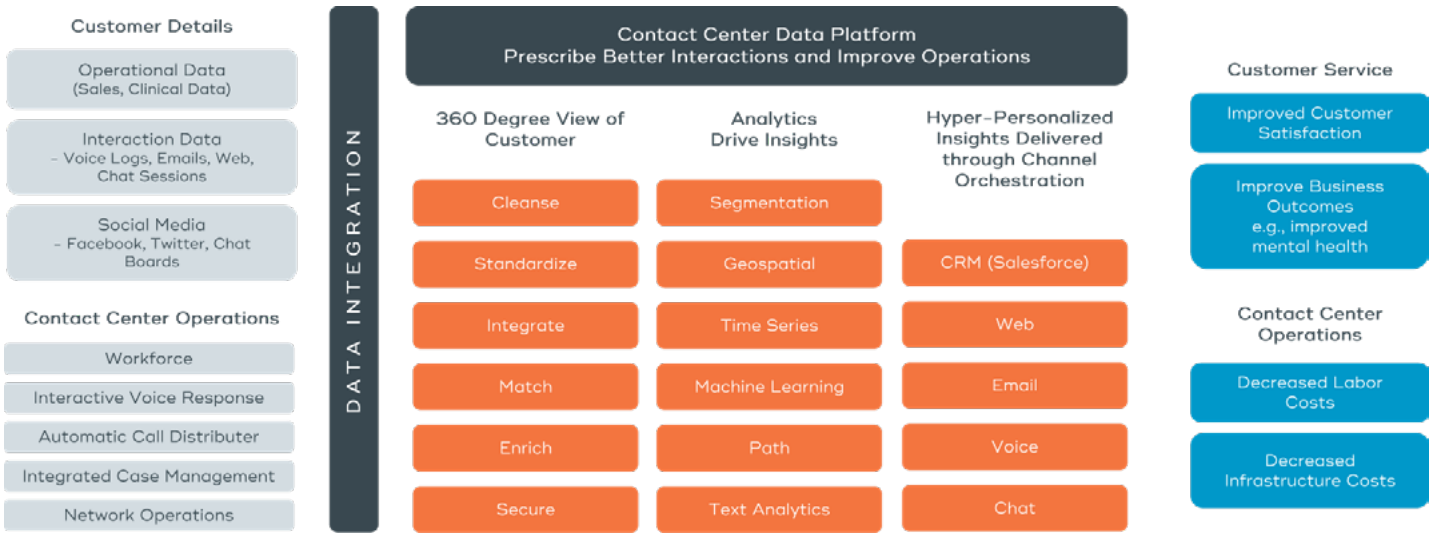

Figure 3. The Enterprise Approach to Call Center Analytics

These functions run fast in the parallel architecture of vantage and can be leverage using SQL.

Preferred Tools and Languages

Business analysts and data scientists can use Vantage to get answers across any infrastructure.

They can also use their preferred tools and languages. Some like to program in SQL, while others prefer R or Python.

To ensure the best user experience for everyone, the Vantage ecosystem provides integrations to most preferred languages and tools. Languages include SQL, R, Python, H2O.IO, and others. These tools push analytics to Vantage such that data is not moved from Vantage and that the tools can leverage the parallelism in Vantage to run analytics at scale.

Support for Multiple Data Types

The data foundation is equally as important as the analytics. Vantage, which includes the world-renowned Teradata SQL compliant data warehouse engine, is known for its effortless scalability through:

- Fully parallel operations and mission-critical availability 2021 Teradata
- Complex query performance
- Multiple data types, formats, and storage support

Data support ranges from relational, spatial, and temporal to XML, JSON, Avro, and time-series formats In addition, Vantage leverages the Teradata data store for persistent storage. Support for S3 and other local low-cost storage options will also be added.

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Figure 4. Call Center Analytics Platform Pervasive Data Intelligence at Scale

Channel Orchestration

Vantage Customer Experience (CX) provides the ability to orchestrate hyper-personalized messages across channels through a web application using drag and drop workflows. Vantage CX comes complete with:

- **Self-Service Data Integration:** Vantage CX includes channel integration capabilities to enable users to easily connect with other data sources and channels, both inbound and outbound, via APIs and SFTP to collect and ingest data. Using an intuitive, point and click interface, users can easily and quickly set up connections with required systems and channels.
- **Connected ID:** Connected Identity supports the collecting, organizing and synthesizing of customer data in order to unify the customer profile. With the Connected ID capability of Vantage CX, users can consolidate profiles (known and unknown) at the person level across channels and devices leveraging probabilistic and deterministic algorithms.

Figure 5 shows a work flow for orchestrating message within Vantage CX.

Vantage CX provides users:

- **Actionable Insights:** Vantage CX leverages Teradata Vantage in-database analytics and integrates with a number of different analytic tools so that analysts can create and operationalize analytics. Users can directly select customers from the results of analyses to export to specific channels for inclusion in communications. For example, marketers can select customers on a path by simply pointing and clicking on the visualization, and then exporting the list for a communication.
- **Channel Orchestration:** Vantage CX enables users to design and execute personalized omnichannel customer journeys. Users can build customer journeys, rank, score and arbitrate offers, and seamlessly orchestrate them across online and offline channels. A built-in dashboard allows analysts to visualize the real-time performance of planned strategies and adjust the same to align with business objectives.
- **Real-time Personalization:** Vantage CX enables real time dynamic personalization by applying AI and machine learning to recalculate models based on both what the customer is doing "in the moment" and historical behavioral data. Using out-of-box wizard-driven machine learning UI, users can optimize real-time decisioning based on business users' goals, such as maximizing revenue or minimizing cost to serve. These highly personalized offers are then delivered at scale, to millions of customers, informed by billions of interactions.

Why Vantage?

Improving customer experience and managing the contact center operations requires a robust data platform. The versatility of Vantage de-risks the analytic platform buying decision for a contact center by incorporating the analysts' choice of analytic functions and engines, and by using their preferred analytic tools and languages across data types. This allows the best scalability, elasticity, and performance to drive superior business answers for contact center operations and customer experience. Additionally, Vantage CX provides channel orchestration capability to deliver the right message at the right time to the right customer.

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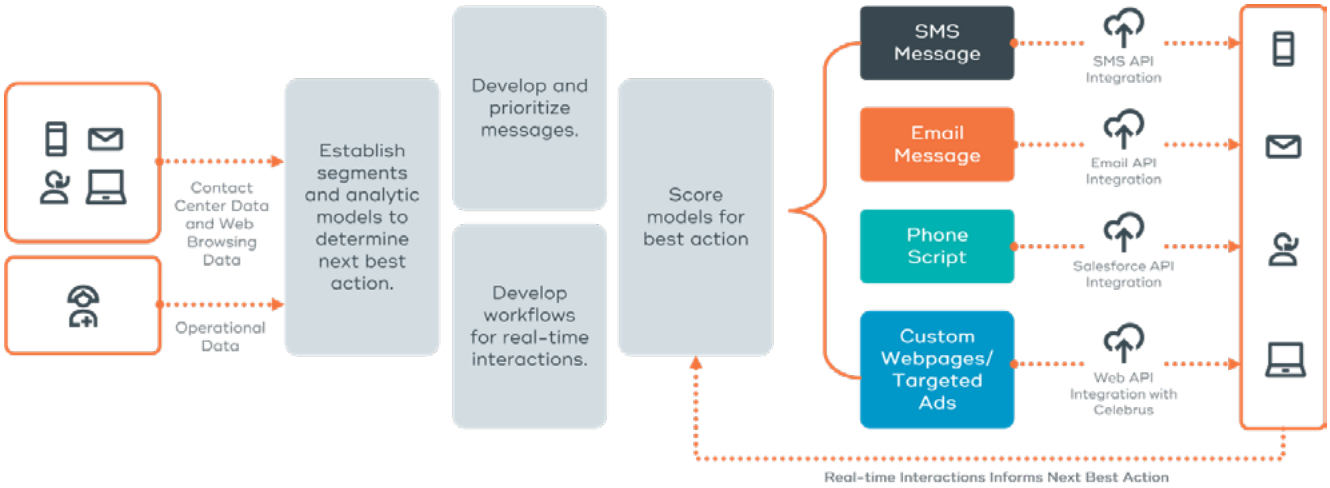

Figure 5. Channel Orchestration with Teradata Vantage Customer Experience

About Teradata

Teradata is the connected multi-cloud data platform company. Our enterprise analytics solve business challenges from start to scale. Only Teradata gives you the flexibility to handle the massive and mixed data workloads of the future, today.

The Teradata Vantage architecture is cloud native, delivered as-a-service, and built on an open ecosystem. These design features make Vantage the ideal platform to optimize price performance in a multi-cloud environment. Learn more at **Teradata.com**.

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