Customer Insight Command Center Speeds ‘Just-in-Time’ Marketing

By combining structured and unstructured data, organizations can more effectively track customer sentiment in real-time, everywhere from your call center to Facebook.

Executive Summary

Today’s customers act, and react, at lightning speed to your latest products, pricing plans and sales channels. They spread the word about their good – and bad – experiences with comments captured across a dizzying range of platforms. Some of these platforms, such as conventional CRM systems and customer databases, store data in familiar, structured form. Others, including social media such as Facebook and Twitter, hold unstructured data that may contain misspellings, slang and other media types (video, voice, images, etc.) that make it difficult to analyze.

But marketers need to quickly and cost-effectively tap all these information sources, analyze the data within them, and understand the results before sudden market changes undermine sales or damage their brands. This rapid response requires the discovery, extraction, cleansing and integration of a wider range of data than ever before. It also requires social media tracking and analytic tools, natural-language processing to draw insights from text, advanced predictive analytics to aid decision-making and easy-to-use dashboards and reports.

When rumors on social media threaten a product’s reputation, or a complaint about an out-of-stock product signals an inventory crisis, marketers and brand managers need detailed information – immediately. They must be able to analyze and correlate many more types of customer data, sense danger and opportunity in their customers’ experiences much more quickly, and respond much more effectively than ever before. Otherwise, they risk being left behind by competitors who can deliver a better product or experience – or counter false impressions – more quickly than they can.

Our Customer Insight Command Center (CICC), developed with Clarabridge, a leading provider of customer experience management and social analytic solutions, is a proven platform that integrates multiple data sources and uses semantic tools, automated predictive analytics and customizable alerts to deliver to decision-makers the information they need to outpace their competitors.

This white paper describes the essential elements of our Customer Insight Command Center, as well as actual and potential ways it can be used to sense, understand and respond to rapid changes in customer sentiment.
A CICC Tutorial

The CICC’s unique value begins with gathering all the data, from whatever source, that can provide clues to what customers are saying about their needs or your products, services, pricing or sales channels.

We then work with organizations to identify these data sources, both internal and external, and build a plan to integrate new data sources that previously were often difficult to cross-reference. These data types might include the text of e-mails, results from customer surveys, transcripts of online text chats, recordings of customer service calls, and records from CRM systems and data warehouses, as well as postings on social media sites and blogs.

Working with Clarabridge, we pull content from all relevant sources, identifying themes and publishers relevant to your brand(s) and customers into a CICC.

Clarabridge then aggregates fragmented data and cleanses it, and uses natural language processing to classify data, structure insights, and create sentiment measures. This begins with structured data from sources such as internal customer databases, providing information such as customer name, contact information, demographic data and ratings from traditional corporate systems such as CRM applications. While these provide an invaluable first step, real-time intelligence requires information from a wider variety of sources, with more context such as the time and place of purchase, and the customer’s emotions about the product and their experience with it.

This added context often comes from newer, unstructured data sources such as blogs or social media. However, the informality of these sites (and the fact that the text is often entered on the fly on a mobile device) means this data includes misspellings, new data types such as emoticons, slang and contradictory sentiments (see Figure 1).

Two-Step Process

Step 1: Obtain basic customer demographic information and satisfaction ratings from internal systems.

Step 2: Collect informal posts from social media, which contain a wealth of contextual information but pose challenges for conventional analytics.

Figure 1
Quick Take

The Customer Insight Command Center at Work

When paired with other solutions, the Customer Insight Command Center meets a wide range of marketing challenges. These include:

- Understanding their most profitable customer segments, our clients use Cognizant Customer Analytics/360 to build a customer intelligence framework that identifies and targets the most profitable customers for marketing programs.
- Understanding consumer demand and effectively manage the overall supply chain, our clients use our predictive analytics tools to determine future demand trends to improve inventory management, optimize cash flow and reduce out-of-stock items.
- Analyzing the effectiveness of marketing programs and channels, our campaign management and measurement helps clients plan, track and measure the ROI of their marketing efforts.
- Managing complex multi-channel customer relationships, clients can analyze digital data collected in interactive channels to track complex customer interactions, optimize tactics and strategies, and personalize product recommendations for customers.
- Using social media analytics to uncover customer sentiment, clients can quantify the impact of social media and how to use it to improve customer satisfaction, and identify and quickly resolve quality, operational or brand perception issues.

Many analytic systems, or even human coders, would simplistically rate this entry as either “positive” or “negative” or give it a single “satisfaction” score. Both processes miss most of the important insights. The Clarabridge Intelligence Platform can understand and score millions of verbatim comments and other unconventional entries. It can, for example, interpret the “☹” emoticon as representing displeasure, and the fact that “sick” is a positive comment when it refers to the system’s graphics but is negative when referring to the store experience. It knows that a “yellow shirt” is a sales rep in the store, and that Ted is the name of the person who works in the computer section of that store.

This natural language processing helps organizations analyze unstructured data as quickly and accurately as structured data. Its hundreds of rules and methods ensure accurate and complete sentiment measurement that takes into account the context of word usage and common misspellings (see Figure 2, next page).

Our advanced analytics engine then creates and monitors more than 60 customizable KPIs, and provides adaptive benchmarks that evolve with the data based on pre-set business rules. Machine learning capabilities track adaptive business benchmarks against company-relevant themes such as cost savings, customer satisfaction and product quality. It is also highly scalable, running more than three million models per hour for one early client. Among its hundreds of rules and methods is an 11-point scale for judging sentiment that allows analytics systems to draw detailed assessments from unstructured data, just as it would for structured data.

This post can thus tell a business decision-maker that this customer:

- Strongly likes this system’s graphics, CPU and battery life.
- But found the vendor’s Web site difficult to navigate and the shipping cost excessive.
- Went to a specific store location but found the wait time for service too long, and the service staff uninformed.
- And next time will go to another local retailer to attempt to buy the system.
**Sentiment Insights From Unstructured Data**

Embedded rules assign scores to customer sentiments within unstructured data to enhance understanding.

<table>
<thead>
<tr>
<th>Score</th>
<th>Sentiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td>very negative</td>
</tr>
<tr>
<td>-4</td>
<td>negative</td>
</tr>
<tr>
<td>-3</td>
<td>slightly negative</td>
</tr>
<tr>
<td>-2</td>
<td>neutral</td>
</tr>
<tr>
<td>-1</td>
<td>positive</td>
</tr>
<tr>
<td>0</td>
<td>very positive</td>
</tr>
<tr>
<td>+1</td>
<td></td>
</tr>
<tr>
<td>+2</td>
<td></td>
</tr>
<tr>
<td>+3</td>
<td></td>
</tr>
<tr>
<td>+4</td>
<td></td>
</tr>
</tbody>
</table>

- **“The laptop was super easy to find...”**
  Modifiers such as “very” or “really” amplify sentiment
  
- **“The laptop was easy to find...”**
  Each word is assigned a sentiment score from -5 to 5

- **“The laptop should’ve been easy to find...”**
  Exception rules to address the idiosyncrasies in every language

The added context and detail allows business decision-makers to take action such as:

- Investigate whether others in this demographic value graphics, CPU and battery life as much as this customer, and thus prioritize those features in future products.
- Consider ways to improve the flow of its Web site and identify how much a reduction in shipping price might increase sales.
- Work with ACME to reduce customer wait times, and better educate its employees about the company’s products.
- Follow up with the specific “churn” store (Target) to see if the customer wound up purchasing the system there, and what about the Target experience ACME should emulate.
- Follow up with the customer and, if he has not yet purchased the system, possibly offer him a discount to close the sale and increase his brand loyalty.

The Clarabridge platform is easily and quickly adaptable to the unique “journeys” of each customer type, from awareness to consideration to purchase and post-purchase. It facilitates continuous, real-time monitoring and measurement of every touchpoint on that journey from every listening post, inside and outside the enterprise, and delivers actionable insights geared to the needs of various users (see Figure 3, next page).

**Actionable Insights**

Using the customer sentiment measures produced by the Clarabridge platform and the customized KPIs provided by our analytics engine, automated benchmarking and predictive modeling algorithms provide a basis for actionable insights. Using advanced KPIs such as the volume and velocity of a topic, conversation spread rate, and number of unique participants engaged in a conversation, our analytics tools can be used to develop customizable models that deliver foresights that meet the organization’s precise business needs. These models identify trends and deviations from trends, and use early warning models to send alerts on issues that require action. These issues could range from a rumor about a harmful ingredient in a beverage (a situation faced by one of our clients), to service or product availability issues in the retail channel, to service problems in a communication provider’s wireless network.
Combining Structured, Unstructured Data

Accurately linking structured data to unstructured data enables actionable customer-level and store-level insights that were previously unavailable with other methods and systems.

Figure 3

I was so excited to get my new laptop from ACME. It has super sick graphics, beefy cpu and awesome battery life. The laptop was not easy to find on the website. When I found it I didn't want to pay for the ridiculous shipping cost...so I went to the store to pick it up. The place was a disaster area it made me sick. I couldn't find anything. After waiting for 20 minutes for a yellow shirt I finally got help. Ted was friendly, but, he had no idea how to answer question about the X4. Man, I loved that laptop but this sale should have been easy and it wasn't. #fail ACME :( I'm going to Target.

Quick Take

The Customer Insight Command Center: An Illustrative Scenario

An online stockbroker wants to monitor social media to give customers early clues to changes in investor sentiment about markets and products. Our Customer Insight Command Center could be used to build an early-warning system using advanced analytics to assess how changes in the volume, sentiment or “virality” of comments about an investment could provide clues to investor behavior.

After developing a classification hierarchy for investment categories, the solution would use proprietary natural language processing algorithms to classify posts. Analytical models would then predict changes in customer sentiment around various investments, and create reports and alerts to help guide customers in their investment decisions.
Dashboard: Computer Buyers Not Happy with ACME

This dashboard tells the manufacturer of the X4 Ultrathin that while mentions of the X4 and ACME Superstore are rising, along with views of those mentions, net sentiment about the X4 and ACME is down over time. This shows the frustrations of the individual blogger are mirrored by many other customers.

Automated and interactive end-user reports can be tailored to the brands, topics, issues and events most important to the business. These can be distributed in any form (static reports, e-mail alerts, mobile dashboards) to the most appropriate relevant parties to evaluate, respond and take action. Users can even adjust the dashboard parameters to generate custom views to better meet varying business challenges (see Figure 4).

Real-time Customer Understanding

Your business is unlike any other, and your customers’ needs, perceptions and experiences change by the minute. To react most quickly and effectively, you need a proven but customizable solution that monitors structured and unstructured data, analyzes it to draw meaning from even fragmented or misspelled text, and present the insights in the form that each business stakeholder requires.

To learn more about how Cognizant’s Customer Insight Command Center can help you make faster, more effective marketing decisions, please contact HJurgen.VanDenWoldenberg@cognizant.com.
About the Authors

H. Jurgen van den Woldenberg is the Practice Lead for marketing and digital analytics at Cognizant Analytics. He has more than 25 years of experience in marketing and sales management. His practice operates across all verticals and is focused on customer consumer analytics. Jurgen holds a Ph.D. in virology and a master’s in veterinary medicine from Stiftung Tierärztliche Hochschule Hannover. He can be reached at HJurgen.VanDenWoldenberg@cognizant.com.

Tom Jirele is a Principal at Cognizant Analytics. He is a statistician with over 25 years of analytics experience in predictive modeling, promotional design, and measurement and social analytics in a wide variety of industries. His current focus is the integration of analytics processes in enterprise systems. Tom can be reached at Thomas.Jirele@cognizant.com.

About Cognizant

Cognizant (NASDAQ: CTSH) is a leading provider of information technology, consulting, and business process outsourcing services, dedicated to helping the world’s leading companies build stronger businesses. Headquartered in Teaneck, New Jersey (U.S.), Cognizant combines a passion for client satisfaction, technology innovation, deep industry and business process expertise, and a global, collaborative workforce that embodies the future of work. With over 75 development and delivery centers worldwide and approximately 178,600 employees as of March 31, 2014, Cognizant is a member of the NASDAQ-100, the S&P 500, the Forbes Global 2000, and the Fortune 500 and is ranked among the top performing and fastest growing companies in the world. Visit us online at www.cognizant.com or follow us on Twitter: Cognizant.