Customers have *thousands* of feelings about the brands they buy from. Here's what you need to know about them.
Emotions are big business.

Need proof? Look no further than Snapchat’s recent purchase of Bitstrips, Inc., maker of the customizable avatar app Bitmoji. Beloved by everyone from preteens to celebrities, Bitmoji enables users to communicate any one of hundreds of different emotional states at a single touch. As Bitstrips co-founder Sanjay Panth described it, “the app is all about emotion, and it’s you, and you’re expressing all these emotions.” For Snapchat, owning the means of that expression was worth more than $100 million.

Elsewhere on the emotion-as-business front, companies like Affectiva have been leading the charge in recognizing emotion from facial expressions. As of September 2016 they have analyzed over 4 million faces across 75 countries and are actively being used by marketing leaders to get a better understanding of how people are reacting to new marketing materials prior to full scale roll out.

The value of investing in emotion is a drum that customer experience analysts and researchers have been beating especially loudly of late. For those companies that have picked up the tune and poured time and treasure into ensuring customers feel good about their brand experiences, the benefits are real and compelling. Some examples:

**Temkin Group** took a close look in 2015 at the three components of the customer experience – effort, success, and emotion – and their impact on brand loyalty. They surveyed over 10,000 U.S. consumers across 20 industries and found that emotion, not effort, is the top driver of brand loyalty, illustrated by the finding that 70% of the customers who provide high Net Promoter Scores® (NPS) for a brand with which they had a strong emotional connection, whereas 80% of those reporting a low NPS had poor emotional connections.²

The findings led Temkin Group to declare 2016 “The Year of Emotion” and start the Intensify Emotion movement, which inventories technology vendors who have purposefully used emotion to create a meaningful impact with customers. For example, Man Made Music, which is able to first measure and subsequently design specific sounds that drive a stronger emotional connection to a brand.

**Forrester Research** has been able to prove a positive relationship between Customer Experience and stock performance³, and further demonstrated that customer emotions are the largest driver of the Forrester Customer Experience Index.⁴

**Gartner**, under the leadership of Gareth Herschel, created a new technology category in July 2016: Customer Personality Analytics. It features an array of use cases across marketing segmentation, refining marketing communication, HR, Customer Service and TeleSales, where leveraging behavioral profiles leads to higher conversions and better customer satisfaction.⁵

But even if an organization agrees that emotions are important and have bottom-line relevance, capturing, measuring and deriving meaningful insight from customer emotions is a daunting task for many.
In this research, we have zoomed in on categorizing and measuring emotions in over 100,000 conversations between customers and customer service representatives from household brands based in the United States. This formed the baseline for further research connecting specific emotions to a specific outcome (for example, to what extent does the expression of anger or joy correlate with the likelihood of a higher or lower Net Promoter Score), the findings of which can be used as the foundation for predictive models.

**METHODOLOGY**

1 **CAPTURING AND READYING DATA FOR ANALYSIS**

The data set leveraged for this investigation comprised 118,116 calls recorded in high-definition stereo and processed by transcription engines using large vocabulary continuous speech recognition (LVCSR) technology to produce transcripts.

For anyone aiming to replicate or expand the research, we highly recommend using stereo recordings (transcoded to G.711) for the simple reason that dual-channel recordings (stereo) make it possible to discern a customer service representative’s voice from a customer’s — a critical ability for thorough and reliable downstream analysis, and particularly important in cases where escalations to a supervisor occur. Despite its significant benefits, most enterprises today aren’t fully invested in capturing conversations in high-definition audio due to the higher costs, leaving them with mono recordings, which are not well suited to advanced linguistic analysis.

Segment processing was then completed to associate these transcripts to each individual talking segment of the call, allowing for more complex speech algorithms and density calculations.

From there, data frames and data models of each call were built, allowing for sophisticated pattern analysis to consider the natural yet dynamic conversational flow. Finally, a complete array of highly-accurate metadata from CTI and CRM sources were associated to the conversations for an even deeper understanding of their content.

There are a variety of open-source text-analytics tools that allow for natural-language processing. Researchers can use these tools to extract and classify information, which can then be leveraged for sentiment analysis. Common starting points are the Natural Language Toolkit for Python and the Text Mining package for R.

2 **IDENTIFYING AND CATEGORIZING EMOTIONS EXPRESSED DURING CONVERSATIONS**

Unstructured text, such as Yelp reviews, transcripts of presidential speeches or Twitter tweets, serves up interesting data sets to analyze, with word clouds indicating positive, neutral or negative sentiment in the popular output. However, after looking at the corpus data, this wasn’t the team’s objective.

Rather, the desire was to land on an exact definition of an emotion, as opposed a general view or attitude. In order for emotions to be predictive features in experience and decision models, a deeper level of granularity than a spotlight measure was needed.

- **Understanding the breadth of emotion** was the team’s first step towards gaining this granular view. We Feel Fine⁶ is the initiative from Jonathan Harris, renowned for his work with data and storytelling. Since its inception in 2005, it has been scanning every 2-3 minutes globally all newly-entered blog posts looking for the phrases “I feel” or “I am feeling.” When it finds them, it grabs the sentence up to the period and then automatically deduces the age, gender and location of the author. The result is a vast database of human feelings, at one point increasing by 15,000 – 20,000 new feelings per day.

Exploring the We Feel Fine project provided the team with a “complete” list of possible emotions that could occur during contact center conversations.
• **Categorizing words expressing emotion** was the next phase of the research. Here, the team looked at the foundational work done by Robert Plutchik and his widely-influential psychoevolutionary theory of emotion.

This theory identifies eight “basic” emotions: anger, fear, sadness, disgust, surprise, anticipation, trust and joy. Plutchik argued these emotions were biologically primitive and had evolved over time to support behaviors that increase human fitness and survival (e.g., fear as the trigger of the fight-or-flight response).7

• **Ensuring consistency when capturing emotion** formed the third phase of the analysis. Potentially pointing out the obvious for those who have been digging into the field of measuring emotions from unstructured data, one needs to look at the context to assign accurate meaning to spoken words. The phrase, “That's great,” for example, can express genuinely positive emotion, or be used sarcastically to describe a negative feeling. Additionally, different people express similar emotions using different words. “This makes me happy” and “This is totally awesome” are two very different linguistic expressions, yet they can be used to describe similarly positive experiences, depending upon the personality of the speaker.

The team adopted Plutchik’s well-known wheel — which uses gradient color to represent the eight primary emotions as well as derivative emotions that comprise pairs of the primary ones — as a sorting mechanism for the emotions referenced from the We Feel Fine initiative.
In order to ensure accurate “containers” for the words categorized for a specific emotion, semantic similarity metrics were reviewed. Mathematical tools were applied to estimate the strength of the relationships between the words under consideration for a particular emotion. An example of the outputs from this analysis would be confirming that the words “women” and “girl” are very similar, but “especially” and “asparagus” are not.

Ultimately, these similarity metrics served as the thresholds for words to be placed in our emotion containers, which allowed a scientific decision to be made on whether, for example, the word “proud” should belong in Joy category or “blue” in the Sad category.

After identifying possible feelings, categorizing these words into emotions and ensuring a level of accuracy, we identified four emotions we wanted to focus on: Joy, Anger, Sadness and Fear.

**LEARNINGS FROM THE ANALYSIS**

Most consumers would probably agree that phone conversations with major enterprises can be a bit of an emotional rollercoaster. That sentiment is supported by our high-level findings:

1. **EMOTION IS PRESENT IN CONTACT CENTER CONVERSATIONS.**
   First, we found that 43% of calls detected customer speech that corresponded to at least one of the four focus emotions, while 57% of calls did not include words that expressed any of these emotions. The average handle time when we did not register any emotion was 31% shorter than those calls on which we did. When listening to a sample of these calls, the former type of conversations were generally more transactional in nature, so they also contained less overall caller language to mine for emotion. This does not mean there was “no” emotion on these calls, simply that none of our four focus emotions was detected in any of the language that was expressed in them.

2. **EMOTION VARIES ACROSS ENTERPRISES.**
   While Anger, Sadness and Fear would commonly be associated with negative sentiment, it was interesting to see that, within our data set, different enterprises had different degrees of these three emotions. Negative sentiment was more frequently expressed as Anger in hospitality, Fear in insurance and Sadness in healthcare. It is not our intent to draw industry conclusions, since we do not have full participation across major enterprises. Rather, we present this finding to lend further support to the importance of how a customer feels.

3. **EMOTION VARIES BY CALL DRIVER OR CALL TYPE.**
   Perhaps surprisingly, Joy was the most common emotion detected across all calls. While people don’t typically call into a contact center for fun, agents do solve problems and fix issues. When that happens with little effort, customers are joyful. Not surprisingly, Anger was captured more on calls driven by disputes, appeals or billing problems. Sadness and Fear were generally captured more on inquiry-related calls: appointment status, policy clarification or transaction confirmation.

Finally, analysis at the specific enterprise level brought both unique insights as well as anecdotal support for the accuracy of our emotion detection. The most Joy was captured on enrollment calls for an education client; the most Anger, on hospitality billing dispute calls; and the most Sadness and Fear both occurred on claims disputes for a healthcare enterprise.

“The chemical reactions that trigger emotions determine our feelings toward a brand and our likelihood to spend. This fundamental, primal relationship is baked into how humans operate; however, it is not yet baked into how most companies operate.”

VICTOR MILLIGAN
“A Closer Look at the Monetary Value of Emotion,” Forrester blog.
September 21, 2016
CONCLUSIONS

Researchers, analysts and companies renowned for providing best-in-class customer experience agree: when it comes to business, emotion matters.

Our research lends both support and detail to that argument, and suggests that companies may particularly benefit from a deeper exploration of the emotions expressed within their contact center conversations. Understanding which emotions dominate these conversations, and how they ebb and flow, can help to guide companies seeking to build more empathy and emotional support into their customer experience design, which can in turn influence key business metrics.

Findings outside the scope of the research discussed here also strongly support the inclusion of personality data within this analysis, in order to provide additional layers of insight into individual customers’ core behavioral drivers and the specific language they use to articulate certain emotions. This insight can be used to personalize the customer experience on an individual basis, further strengthening the emotional connection.

ABOUT MATTERSIGHT PERSONALITY LABS

Mattersight Personality Labs is the leading source of expertise, research, and innovation in personality analytics: the intersection of advanced analytics, behavioral analytics and personality modeling. It serves academia, industry and anyone interested in how these data techniques can predict, improve and transform the way people interact.

PARTNERING WITH PERSONALITY LABS

Mattersight Personality Labs welcomes boundary-pushing inquiry and visionary proposals from individuals and organizations whose work, research, interests and intellectual pursuits intersect with and support the advancement of personality analytics. All inquiries will be evaluated by our data science and behavioral model teams for originality, feasibility, resonance with the goals of Personality Labs and distinction from other active collaborations.

To start the conversation, click on the appropriate link below or contact Marcel Korst, Personality Labs director, at info@personalitylabs.org.

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