Intelligent Customer Experience

Integrating Human and Artificial Intelligence to Improve Business Results

Medallia

AI-powered customer experience

By 2020, Gartner predicts that over **40%** of all data analytics projects will **relate to customer experience (CX)**.

Key questions that data analytics projects seek to answer today:

- What drives changes in CX and loyalty?

- Which customer behaviors are early indicators of impending outcomes, such as churn?

- Who are your at-risk customers and what can you do to retain them?

- What is the next best action you should take based on direct customer feedback?

- What will be the business impact of the actions that you take?

In the past, getting answers to these highly analytical questions was not easy. Mining insights across billions of unique customer journeys using traditional analytics methods and tools has historically been a laborious, expensive, and slow process. Sifting through millions of customer comments is time-intensive, scaling customer outreach intelligently is complex, and, even if we understand the future, it is hard to know what action to take.

That said, you are in luck. New advances in technology, the exponential growth of digital data, and the emergence of data science have all made it possible for companies of any size to answer these key CX questions, and many more, at a fraction of the cost and at accelerated speed. How? By applying artificial intelligence (AI) techniques, in particular machine learning, to a variety of customer experience data — from direct customer feedback, digital engagement data, psychographic characteristics, individual preferences, to shopping behavior — many companies are now able to collect and analyze structured and unstructured data fast enough to make real-time decisions that positively affect both customer experience and their own financial results.

Medallia Institute has identified three ways that leading companies are integrating artificial and human intelligence to enhance their customers' experiences, effectively conquering the experience data challenge while also improving their ability to drive business performance.

Three ways to improve business results with artificial and human intelligence

1. From reading to counting

Uncover insights from big data quickly and with minimal effort

Customers share valuable feedback about businesses through surveys, social media, review sites, and countless other channels. This feedback is mostly written and unstructured, which poses a challenge: it is messy and hard to analyze at scale because there are so many ways to say the same thing. Text analytics uses machine learning to effectively summarize this feedback by intelligently grouping it into topics and associated sentiments.

Take the example of these comments from two different hotel guests: "The bathroom was filthy!" and "There was hair in my sink. Nice!" Although on the surface they are very different, both are on the topic of "bathroom cleanliness" and both have a negative sentiment.

Summarizing comments in this way turns qualitative into quantitative analysis, replacing reading with counting.

This structured information can also be combined with operational, financial, and other survey data — enabling companies to identify patterns, trends, risks, and opportunities in the same way they do with numerical data.

However, the true power of machine learning is unlocked when it is combined with human intelligence. Text analytics helps organizations answer the question "What has happened?" through an automated process, allowing companies to empower their employees to decide which insights to act upon, and how. Employees can now spend their valuable time formulating and prioritizing action rather than reading through millions of comments.

Liberty Global, a large international telecom provider, uses open text questions to give their customers the opportunity to express what is most important to them. Each year, the company receives approximately 2.5 million written customer feedback text comments about its range of product and service offerings. It would take an incredible amount of time and resources to manually read and tag these comments for topic and sentiment, then perform the analysis to

identify key aggregate trends and issues to address. Instead, Liberty Global has found great utility in parsing customer comments by product/service line using text analytics to understand what is happening in the moment, and empower humans in the organization to take the right actions.

Text analytics helps Liberty Global to quickly understand experiences related both to specific product/service lines, and those spanning omnichannel interactions. For example, the organization found that their wi-fi customer satisfaction is primarily influenced by service reliability, while pricing is the most important factor to their mobile plan customers. Such insights enable decision makers to prioritize improvement efforts, and make capital investments in the highest-impact areas; while simultaneously tracking the impact of the changes over time. In this case, Liberty Global identified that investing in wifi infrastructure would both improve the customer experience and deliver positive returns to the business.

Text analytics helps Liberty Global to quickly understand experiences related both to specific product/service lines, and those spanning omnichannel interactions.

2. From guessing to knowing

Predict current sentiment and future customer behavior

AI can replace some of the guesswork and manual labor involved in anticipating customer behavior. Imagine being able to predict with high accuracy which customers will churn in the next three months, or which customers will spread negative opinion. Or, how about predicting which of your at-risk customers you should call back versus those you should leave alone? Now imagine having those predictions completely automated so that you and your employees can be much smarter and more efficient with who you target for follow-up conversations (e.g. Closing the Loop) or for fixing issues.
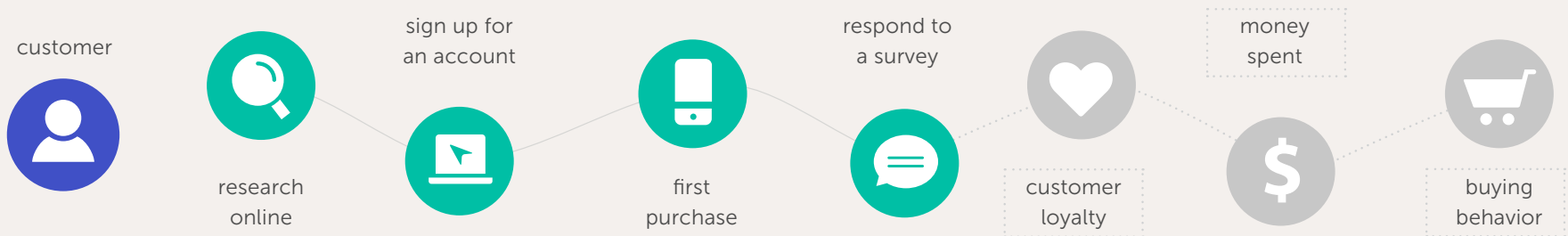
Experience data enhances our ability to detect patterns in customer behavior. A guest who comes back to a hotel time and time again, but never has a great experience, is far more likely to stop coming altogether when a better alternative emerges. The guest might be scoring the hotel highly in the post-stay survey, while expressing their lack of "wow factor" in written feedback. The data footprints of experiences—such as past behavior data (e.g., frequency and amount of past purchases, support interactions), customer characteristics (e.g., tenure), and survey response data (e.g. score and comments)—provide early indicators of future customer behavior. Modeling these together enables companies to predict

which customers are at risk of churning or abruptly changing their behavior, even when some of the data is missing. These

> The data footprints of experiences — such as past behavior data, customer characteristics, and survey response data — provide early indicators of future customer behavior.

predictions allow companies to act sooner, when intervention is cheaper, easier to automate, and usually more effective.

Predict current sentiment and future customer behavior

customer · research online · sign up for an account · first purchase · respond to a survey · customer loyalty · money spent · buying behavior

Predictive Analytics at IBM

IBM, a global technology company headquartered in the U.S., was not satisfied with just reacting quickly to resolve negative customer experiences. The enterprise wanted to know if a customer is at risk of becoming dissatisfied before he or she ever gets there. To do this, the company built a Net Promoter Score® (NPS)[1] Early Warning System (N.E.W.S). Leveraging dozens of sources such as NPS records, support ticketing systems, problem management records, and operational metrics, IBM developed a model that predicts Likelihood to Recommend (LTR)[2] scores the moment each individual submits a ticket to IBM Technical Support. Why did IBM invest time and energy into this? Using Technical Support NPS data, IBM's data scientists determined that accounts with promoters have substantially higher renewals versus other accounts. Meanwhile detractors issue more support tickets driving costs up and resulting in significant losses to the bottom line. With N.E.W.S., IBM could counteract that.

IBM spotlight

IBM spotlight cont.

The model runs in near real time, correctly predicting detractors with an astounding 95 percent accuracy. The predicted LTR score gets funneled to a support agent in charge, along with the reasons for the prediction so the agent can act before it's too late. Each agent, as well as management, gets access to more than just NPS data — N.E.W.S. also provides visibility into predicted scores, and most importantly, actions they need to take to improve those scores. Among technical support agents who use the model, it has become something of a sport to prove the model wrong.

IBM now has predictive insight into the 83 percent of its clients who don't respond to a survey, allowing the global organization to proactively intervene with those who are at high risk of becoming detractors.[3] This predictive power significantly reduces 'time to resolution' — a key driver of poor client experience, which impacts account retention and expansion.

N.E.W.S has become an essential tool in IBM's organizational arsenal. The company has seen powerful examples of IBMers using NPS data to deliver business impact. In one example, an IBMer in charge of support feedback for a key portfolio credited pre-emptive action from customer feedback with securing a large support renewal contract. Similarly, in North America, an account owner noticed unusually low LTR scores in surveys from a top automotive client. He quickly determined that a poorly done proposal was the cause and immediately reached out to the client to remedy the situation. By quickly addressing the feedback and fixing the flawed proposal, the account owner was able to secure and expand the contract, leading to significant savings.

These stories demonstrate the importance of empowering IBMers, approximately 30,000 of whom are regularly engaging with customer feedback, to do the right thing for their customers, and drive a more client-centric culture. N.E.W.S. takes this cultural shift one step further by demonstrating that a client experience program can be about more than reacting quickly to customer insight. Instead, IBM aims to change, and improve, the future for its customers.

> By leveraging an AI-driven CX platform, companies can quickly enable employees to take the right action and understand its impact.

3. From finding problems to evaluating actions

Direct focus and prescribe the next best action

Just about every analysis should help answer the question "What should I do next?." Imagine having those actions discovered and prioritized automatically. Customers tell you what is wrong with their experience and volunteer ideas for fixes every day — through direct feedback, purchasing patterns, and other observable behaviors. Employees also have suggestions, both spontaneously and in response to customer feedback. There is substantial value for companies in curating and estimating the impact of direct suggestions in particular. Using algorithms that leverage experience data — customer comments, experience scores, voice of customer through employee — companies can surface suggested actions, have suggestions (expressed in natural language) from many sources ranked by likely value to customers, identify which actions might most affect a given customer's experience, and use these curated sets to better direct experimentation.

But having well-curated ideas for action isn't enough. To realize their business value, companies need to both take some of these actions and accurately measure their impact. Traditionally, there is a lot of friction through the cycle — between action ideation and analysis — from structuring the action, to implementing an impact experiment, to testing it, and finally to measuring its payoff. By basing these innovations around customer experience and leveraging an AI-driven CX platform, companies can streamline the action-innovation process, and quickly enable employees to take the right action and understand its impact. Employees are then empowered to implement the best ideas.

A global hospitality chain used customer feedback to identify opportunities to improve guest experience, prioritize the most valuable action, and ultimately measure its impact through a successful innovation pilot. The company relied on a comprehensive voice of customer program— soliciting guest feedback from multiple channels (e.g. web surveys, comment cards)—to obtain a 360° view of the entire hotel guest journey from arrival

Customer - Centered Action

COLLECT

AI-driven customer-centered action

1 Machine prioritizes primary data collection given business interests.

CUSTOMERS + EMPLOYEES

4 **IMPLEMENT**

Humans implement the successful solution.

PRIORITIZE **2**

Machine combines predictions and human judgments to rank opportunities.

VALIDATE

3 Machine helps structure, track, and interpret impact experiments.

to checkout, including the customer's experience with the concierge, staff, hotel itself, spa, meetings and events, fitness, in-room amenities, guest room, and restaurants. The hotel chain then used machine learning powered text analytics to sort through thousands of customer comments, and identified a critical area of improvement: guest recognition. The brand discovered that a substantial number of their guests across global properties — primarily their loyalty members — had requested more personalized treatment from the hotel staff.

The hotel brand quickly prototyped a viable solution and tested it with actual guests. The company re-trained its staff at one hotel property — the pilot location — providing new guidelines on how to gather relevant information about each guest's needs and expectations prior to their stay, based on their past interactions with the hotel chain. Having real-time analysis of customer feedback for the comparison and pilot groups, and an estimate of the time it would take to measure the impact of the prototype, made it easier for the company to commit to the experiment. The prototype was a success.

Relative to the comparison properties, guest scores at the pilot location increased 13 percent for the "staff and service" experience metric over the six-month period of the experiment.

Conclusion

Companies can now make use of applied AI and machine learning techniques to repurpose the time and energy traditionally spent on manual analysis, and make near real-time decisions that improve CX and a company's bottom line. Empowered with new insights that were previously unattainable, companies and their employees can prioritize and take actions where it matters most.

Endnotes

1,3: A common customer experience metric tied to a question that asks "How likely are you to recommend [our business, product, or service] to your friends or family?" This question is referred to as "Likelihood to Recommend" or LTR. Typically measured on an 11 point-scale, NPS divides respondents into Promoters (9 and 10), Passives (7 and 8), and Detractors (0 to 6). The score is then calculated by subtracting the percentage of detractors from the percentage of promoters.
2: The question "How likely are you to recommend [our business, product, or service] to your friends or family?", rated on a 0-10 point scale, used to calculate NPS (see above).

Emma Sopadjieva

Emma Sopadjieva leads Medallia's Research Practice responsible for developing insights and frameworks that define how companies will win in the future through customer experience. Prior to coming to Medallia, she was a consultant for over five years in Deloitte's Financial Advisory practices in the US, the UK, and Spain. She has an MA in international economics and management from the School of Global Policy and Strategy at UCSD, and a BS in business administration and management from Bucknell University.

Carolyn Egelman

Carolyn Egelman is a Senior Manager on Medallia's Insights Team where she helps clients drive growth though the key strategic lever of customer experience. She has a PhD from Carnegie Mellon University in Engineering & Public Policy where she studied how organizations learn and innovate from managing complexity, and a BS in Engineering Science & Mechanics from Penn State University.

Gregor Stewart

Gregor leads Data Science at Medallia. Prior to joining Medallia, he was VP of Product Management at Basis Technology, a global leader in natural language processing software. He holds an MA in Philosophy, Politics and Economics from the University of Oxford, and MSc degrees from the London School of Economics (Cognitive Science) and The University of Edinburgh (AI).

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About Medallia

Medallia, the leader in Experience Management cloud technology, ranked #15 in the most recent Forbes Cloud 100 list. Medallia's vision is simple: to create a world where companies are loved by customers and employees alike. Hundreds of the world's largest companies and organizations trust Medallia's cloud platform to help them capture customer and employee feedback everywhere they are, understand it in real-time, and deliver insights and action everywhere—from the C-suite to the frontline—to improve business performance. Medallia has offices worldwide, including Silicon Valley, New York, Washington DC, Austin, London, Buenos Aires, Paris, Sydney, and Tel Aviv. Learn more at www.medallia.com.

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