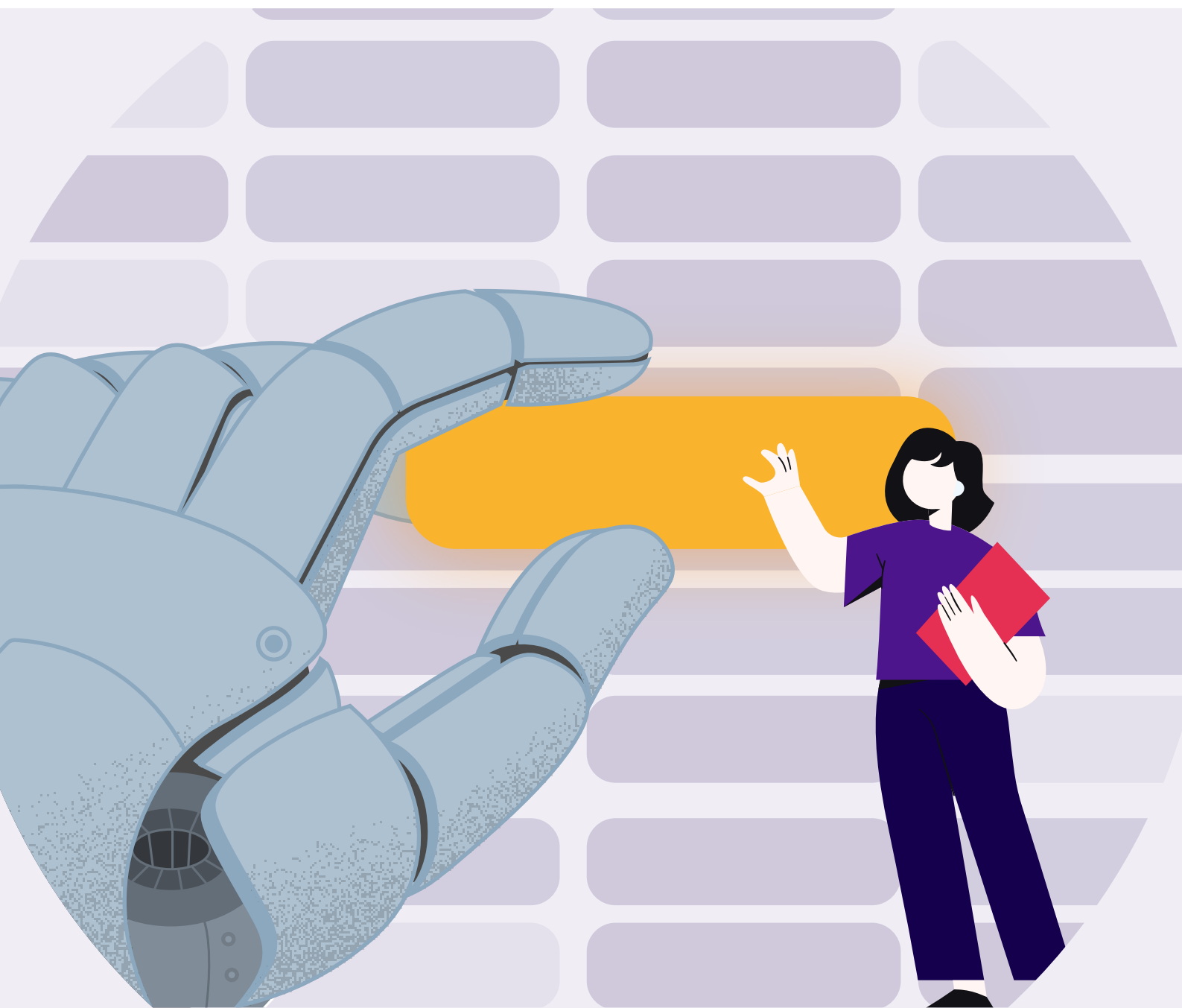


How to leverage AI to improve Customer Experience

How AI works to enhance everyday brand experiences



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Introduction:

The case for AI

There is no argument that AI is here and it's here to stay. AI has been a hyped- up term for quite a while and is now a reality. This e-book will walk you through what AI is, and show you some real-life examples and adaptations that may help you improve the customer experience (CX) for your business.

What is AI?

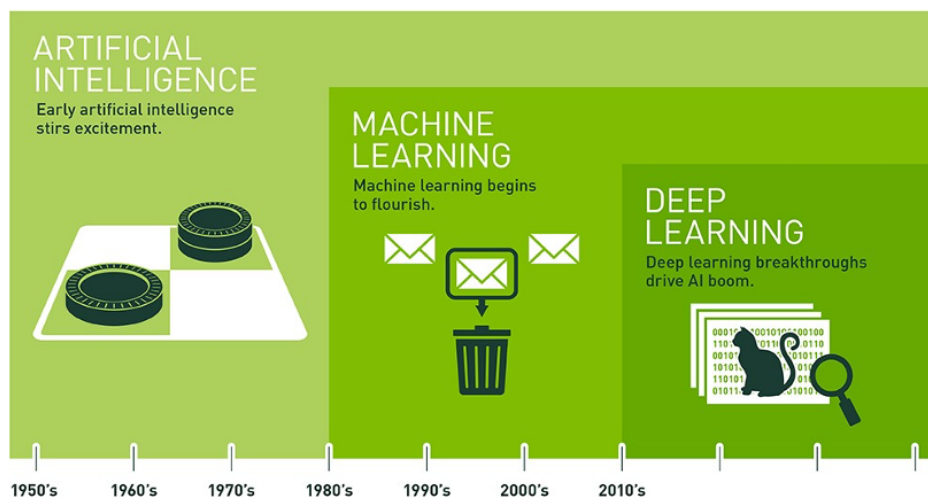
Let's break it down. How can we explain AI in layman's terms? [Techopedia](#) defines AI as "an area of computer science that emphasizes the creation of intelligent machines that work and react like humans".

Wikipedia states that "the term 'artificial intelligence' is applied when a machine mimics 'cognitive' functions that humans associate with other human minds, such as 'learning' and 'problem solving'."



By 2020, **85%** of customer interactions will be managed without a human

Gartner, 2015



Since an early flush of optimism in the 1950s, smaller subsets of artificial intelligence – first machine learning, then deep learning, a subset of machine learning – have created ever larger disruptions.

Image credit: [Nvidia](#)

What's the difference between AI, deep learning and machine learning?

To help explain this we share a great analogy by Deep Learning 4J: “You can think of deep learning, machine learning and artificial intelligence as a set of Russian dolls nested within each other, beginning with the smallest and working out.

Deep learning is a subset of machine learning and machine learning is a subset of AI, which is an umbrella term for any computer program that does something smart. In other words, all machine learning is AI, but not all AI is machine learning, and so forth.”

Natural language processing (NLP) spans across these fields. Whenever a task requires understanding human language (spoken or written), computers require various algorithms to process it. Machine Learning and Deep Learning are examples of such algorithms.

AI and customer experience in the limelight

The big shift has already happened, however, the way AI will continue to change the customer experience landscape will have significant implications for the way consumers interact with brands and the world of business as a whole.

Gartner predicted that by 2020, 85% of customer interactions will be managed without a human. In addition, by 2020, smart agents will manage 40% of mobile interactions ([Gartner, 2015](#)).

Further, Gartner predicted that by the end of 2018, “customer digital assistants” will recognize customers by face and voice across channels and that by 2018, 50% of agent interactions will be influenced by real-time analytics ([Gartner, 2015](#)).

Whether these trends are on track or not, we've all used AI in some way, shape or form; whether it's Google search, automated spam filtering, a chatbot, Siri, Alexa or another smart application.

Back in 2016, 75% of companies said their top objective was to improve customer experience ([Spigit Crowdsourced Innovation Report, 2016](#)). From experience, we know that often companies don't know where to start or how to go about these changes as it often requires a huge cultural shift within the company involving a large amount of employee engagement. (That's another e-book!).

At the same time, AI in relation to customer experience is a highly relevant subject, which is exactly why our team at Thematic decided to create this e-book in the first place. To gauge which topics would be interesting for our audience, we surveyed close to a hundred CX industry professionals, most of them senior executives. We gave them a list of seven hot topics and asked them to rate which ones would be the most important for them. “AI and Machine Learning CX trends”, along with “The Future of Customer Feedback” came out on top.

Everyday AI algorithms

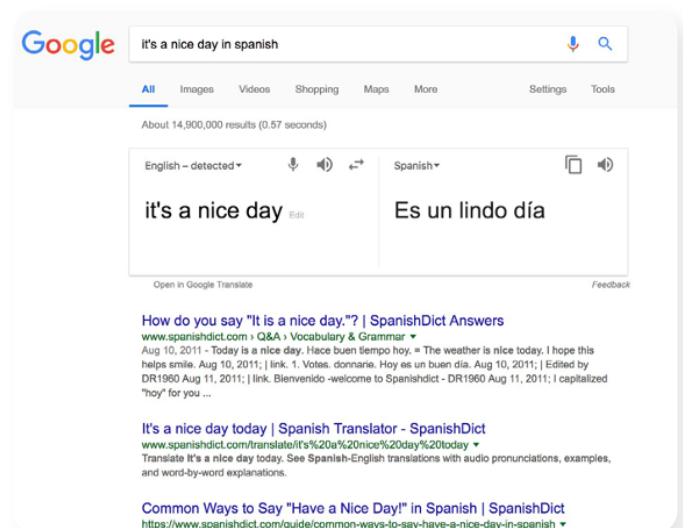
If you look hard enough, you'll find plenty of examples of how businesses have used AI to make your (and their) life easier, thus improving the customer experience. Here are some to get you started:

- Machine translation (for example, in Google translate)
- Image analysis (recognition of objects of interest)
- Autocomplete
(that annoying little helper that often gets it right, but oh so often gets it embarrassingly wrong!)
- Intent detection in chatbots and search engines
"did you mean...?"
- Automated coding of customer feedback
(as opposed to manual labor)
- Voice to speech detection (for example Siri)
- Predictive analytics
(predicting the future based on past actions)
- Prescriptive analytics
(automatically detecting risks and triggering an action)

You may have heard of Amazon's ground-breaking shipment anticipatory model. Using your prior Amazon activity, including your time on site, duration of views, links clicked and hovered over, shopping cart activity and wish lists, Amazon predicts the sale accurately enough to make it worthwhile to ship close to your home before you buy. Imagine ordering something online and it arrives one hour later at your door. That makes for a pretty unique customer experience. It's a prime example of how AI works as a win-win situation for both parties.

Amazon is often cited as the best in class case study for customer experience. Why is it so successful? Potentially one of the reasons the company is able to take so many risks with its customer strategy is that it doesn't need to turn a profit.

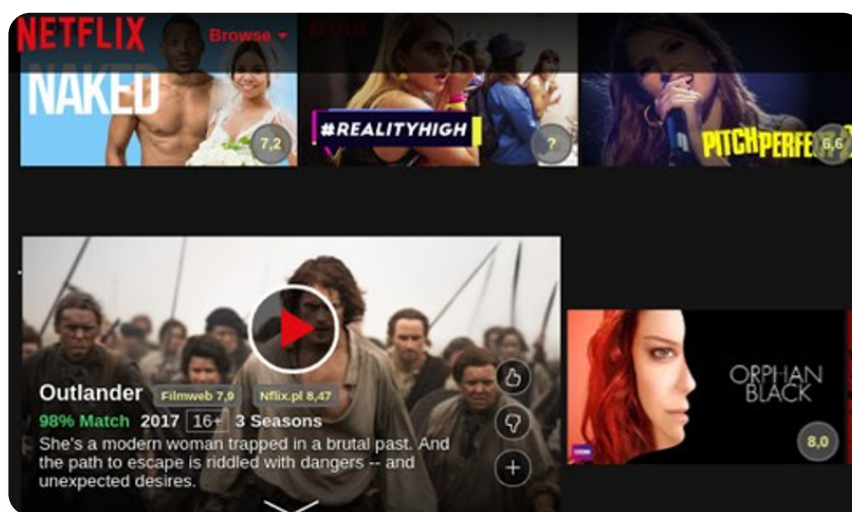
To note, Amazon has been criticized in the past for its failure to make money. In the third quarter of 2017 Amazon boasted a profit for the 9th quarter in a row, however before that the numbers were very up and down year to year. According to Investopedia this is called a slow burning model to a sustaining business. ([Forbes, 2017](#))



AI analytics – some examples

Because surveys are not always practical or will give accurate results, advanced analytics is useful as it can infer customer feedback from the growing volume of digital exchanges that are taking place in businesses today.

We'll take you through a few different types of analytics to show you how AI works in action day to day; Predictive, Descriptive and Prescriptive analytics.



Descriptive analytics answers the questions: What happened? Why is revenue less? Why is it so? It may be applied in CX by analyzing: How many customers have churned? Why did they churn? It uses KPIs, dashboards and charts to explain this. As an example, Netflix uses data mining to find out correlations between different movies that subscribers rent and then recommend the one which you are most likely to watch.

Predictive analytics concludes what's likely to happen based on history. It uses statistical methods and data mining to understand the relationships in input data and predict the outcome. An example is ING using personalized campaign offers in real time by predicting who will respond, to increase 30-40% response rates and reduce direct marketing costs by 35% per year.

Prescriptive analytics takes it one step further, automatically detecting risks or opportunities and then triggering an action for a given situation. It answers the questions: What is the best course of action for given situation? What actions to be taken to retain these predicted churners? A good example here is Amazon. com using price optimization based on demand to increase the online shopping revenues.

In summary, prescriptive analytics is where you know what the future is, but you'll also know what to do with it ([Customer Think, 2016](#)).

Real-world examples of AI in action

With the help of AI, businesses can easily predict what customers want and thereby respond accordingly. A huge trend for AI is just this ability for more accurate prediction. As Kindzierski writes for PR Newswire, “Thanks to the rise of digital channels and the advancement of AI and machine learning technology, we now have the ability to predict (with a high level of confidence) the right answer to a customer’s inquiry in any digital channel — email, SMS, chat, or social. This advancement in technology will make our agents much more efficient. No more looking up answers, spell checking, tagging or categorizing conversations” ([PR Newswire, 2018](#)).

There’s no question that advanced data analytics tools help businesses reveal important insights and gain a competitive edge. As customer experience analytics matures, it’s becoming increasingly predictive and focused on personalization. A sophisticated data analytics tool can make predictions, or generate recommendations based on information gathered, thereby giving human support reps and chatbots more background and context on each individual customer they’re servicing. In addition, analytics plays a significant role in increasing productivity. For example, speech analytics can detect non-value adds, such as long conversational pauses or points in the conversation when the customer has to repeat responses ([PR Newswire, 2018](#)).

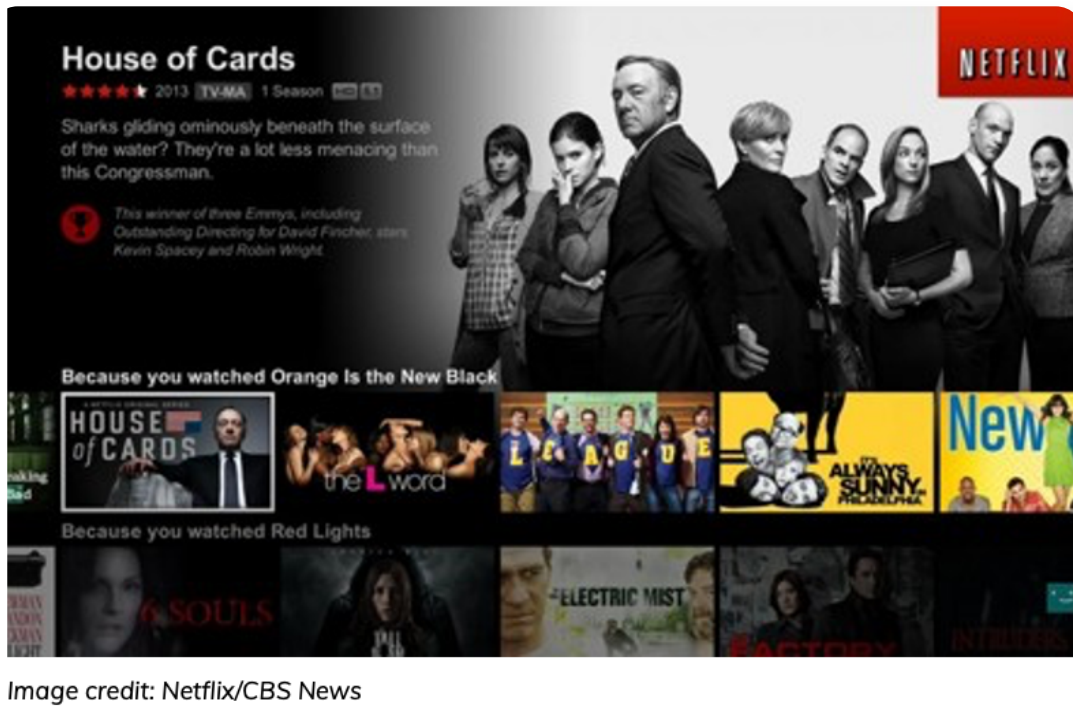
Sprint uses Predictive Analytics to reduce churn and increase NPS

Predictive analysis is used in companies all over the world. For example, Sprint uses AI to create better customer experiences. In 2014, they had a customer churn rate of 2.3%, double that of its biggest competitors. As for customer service strategies, the company was relying on CX agents to analyze their data, thereby allowing for human error and trusting on the agent’s own judgement.

Before employing AI such as predictive analytics, the CX agent would sift through numerous offers, picking the best offer while the customer was waiting on the phone. As we know, customers are loathed to wait, and the longer they wait the more aggravating it can be.

Sprint realized this was not ideal so, they implemented a data solution where predictive and self-learning analytics helped find customers at risk of churn. They also proactively provided personalized retention offers to customers. The results were staggering. Sprint reduced customer churn by 10% to “historic lows”, and increased its Net Promoter Score (NPS) by 40%. Additionally, Sprint boosted customer upgrades by eight times, convincing 40% more customers to add a new product line, and improving overall customer service agent satisfaction ([Forbes, 2017](#)).

Another example of real-world AI in action is one telecom company which found that when a customer defected, others in that customer’s calling circle, friends and family, were at elevated risk of defection also. Their predictive analytics model helped them flag those situations in real-time and trigger relevant actions based on these predictions ([Bain, 2017](#)).



Netflix and Spotify autonomously figure out customer's likes and dislikes

AI algorithms also underpin Netflix services, where if a customer is browsing a different movie category on Netflix than they were before, new recommendations need to be served up to entice the customer to watch a particular movie and continue being engaged with Netflix ([Bain, 2017](#)).

Content services get better and better at figuring out what the customer likes and dislikes through algorithms, such as Discover Weekly playlists on Spotify.

Personalization through AI

Raconteur brings us an interesting example from US software company Dynamic Yield, which uses an advanced machine-learning engine to build actionable customer segments to personalize the customer experiences and services.

Using AI, marketers can talk to each of their customers in a tailored and relevant way and thus build stronger relationships, which will yield more ROI over time. “Dynamic Yield is working towards being the leader in AI-based personalization”, says founder and chief technology officer Omri Mendellevich.



You can try different designs of a purchase stage on your website. Since we have a lot of audiences in the system, we can see through our machine-learning how each segment interacts and engages with the different content. We learn with every user response.

This means you actually get traffic directed to the right segment with the right variation in real time.

Omri Mendellevich

Currently the technology is used to empower the decision-making process for marketing purposes. “We understand how specific segments within your customer base interact with specific variations of the web experience,” says Mr. Mendellevich.

In this way, behavioral data reflecting real customer actions trumps traditional consumer panels, where customers tell you how they think they might behave in future ([Raconteur, 2017](#)).

In a similar vein, ContentSquare, a user experience analytics and optimization business added an AI layer in the form of a bot named Arti. This bot captures website user engagement data to help them ensure every section of content on their sites is as potent and profitable as possible ([Raconteur, 2017](#)).



Use prescriptive analytics to improve your customer relationships

A great example shared by Bain, is DiDi, a major Chinese ride-sharing company providing transportation services for more than 450 million users across over 400 cities in China, i.e. many times bigger than Uber (whose China operations DiDi acquired and absorbed in 2016).

As you know, Net Promoter® Score (NPS) is used by thousands of companies worldwide to establish the likelihood of customers recommending the product to others. What if you don't want to or for some reason aren't able to send out a survey? Sometimes you don't even need to ask.

Imagine the vast scale of data generated by all those transactions which gives DiDi a huge advantage. Knowledge is power, indeed.

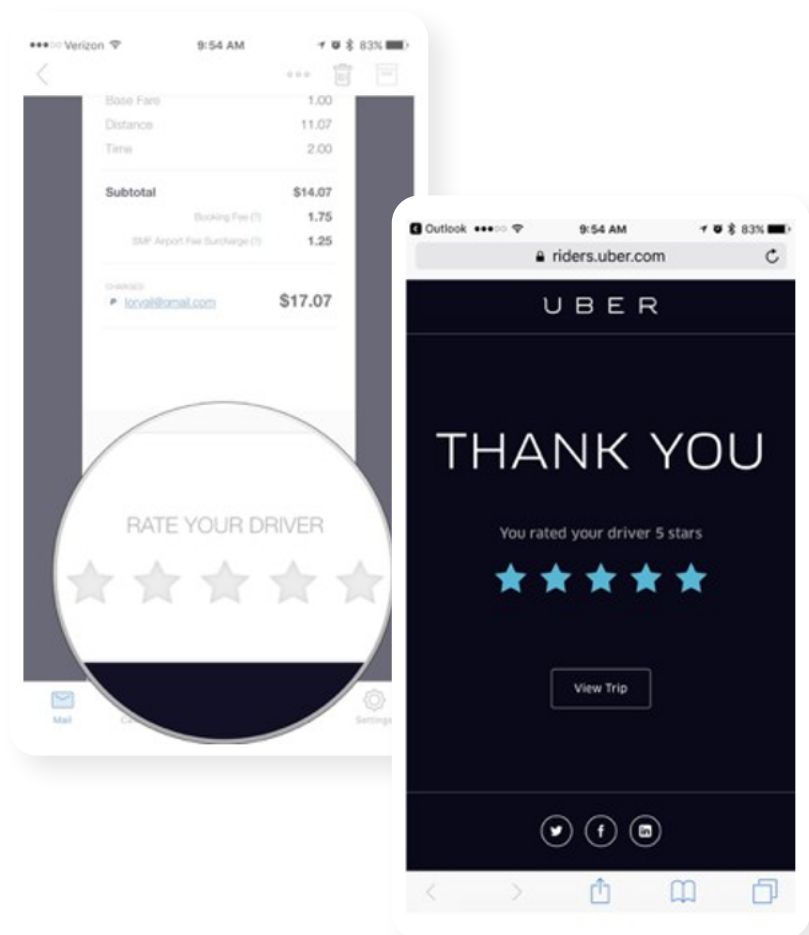
Matching the data it collects on every aspect of millions of rides with end-of-ride ratings from customers allows the company to create predictive models. They'll know what sorts of experiences usually produce promoters and which ones create detractors.

Thereby, DiDi doesn't need to ask all its customers for feedback. The models generate a rating score for rides that match what customers say in traditional NPS survey.

This means that DiDi's model can generate real-time feedback to its drivers. For example, it immediately identifies situations where there's a need to rectify the for relationship or service. This then triggers an intervention, possibly even before the customer has completed the ride. If the algorithms identify a pickup that went wrong or a ride that took longer than it should have, DiDi can issue an apology or a credit. On the other hand, if the ride went swimmingly well, DiDi's app can prompt the customer with ways to share with their friends about the service's benefits.

Is this the future of customer feedback? Companies using predictive analytics to figure out whether customers are promoters or detractors, and then using prescriptive analytics to help close the loop and enable instant action.

Advanced analytics applied in the right way can foster even deeper customer intimacy using enormous volumes of digital interaction data to "remember, interpret and enhance each customer's experience at every point of contact, digital or personal" ([Bain, 2017](#)).



3 ways AI and ML improve CX

AI tools make it possible to easier anticipate customer needs in multiple ways. Marketers can analyze vast volumes of customer data, identifying the characteristics of high-value past customers which allows businesses to create highly personalized campaigns. Sales teams can quickly identify customer purchasing patterns and customer service reps can deliver relevant actions and sales offers. Here are three benefits of using AI:

1. Improved matching of customer needs and products

Improving relevancy when it comes to offering products is a major factor for increasing customer lifetime value and return of investment.

By using big data and machine learning, businesses can offer relevant products that match their customer's exact needs. Recommendation systems are used to suggest products to customers that they are more likely to buy. Having access to vast amounts of customer data such as price range, preferences and buying cycle, businesses can target customers with specific offers.

With the help of AI recommendation programs, customers can be given personalized information at the right time in the customer's journey.

What this means for businesses is improved and more sophisticated communication with customers, and consequently increased revenues and in the long term, customer satisfaction.

2. Personalization remains key in customer communication

Customers today are savvy and can sense when they're being marketed to by generic email blasts (when was the last time you deleted an email feeling it wasn't relevant or not personalized enough – not too long ago, we suspect!).

This is nothing new for marketers. If you don't personalize content, you lose out on valuable communications opportunities. Over 85% of mobile marketers' report success with personalization in the form of higher engagement, revenue and conversions (Wharton University, 2016).

Personalization techniques such as geo-fencing and loyalty programs are combined with AI algorithms to predict customers' needs and desires. Geo-fencing provides location-based marketing messages, and loyalty programs reward customer loyalty and intensifies customer advocacy over time.

3. A smooth virtual experience is priority

Today, purchase decisions are often based on emotional needs, not just practical needs. The actual pleasure and ease of the buying experience is equally as important as the quality of the product itself. Thus, customers prefer brands who can cater to both of these needs.

By studying customer behavior in various stages of the buying cycle, and on websites, advanced analytics helps testing and improving the customer experience over time. For example, companies use it to make it as easy as possible for customers navigate their site or answer customer queries faster, ultimately saving customers time ([NewgenApps, 2017](#)).

5 benefits of chatbots and how they're transforming CX

Customers want quick, seamless solutions to their problems. Some are used to the traditional way of phone support therefore a hard time accepting a chatbot with the notion that it is a robotic interaction, lacking the human touch. However, more and more customers are open to new technology, especially if it means a quick resolution to their issues.

Chatbots are in essence automation decoyed as human conversation, or rather, automated programs that can simulate a human conversation. The bots use natural language processing (NLP) to understand human communication in the accurate context and provide relevant answers to questions. From the customer's point of view, they're speaking to an actual human being, or at least, so it seems.

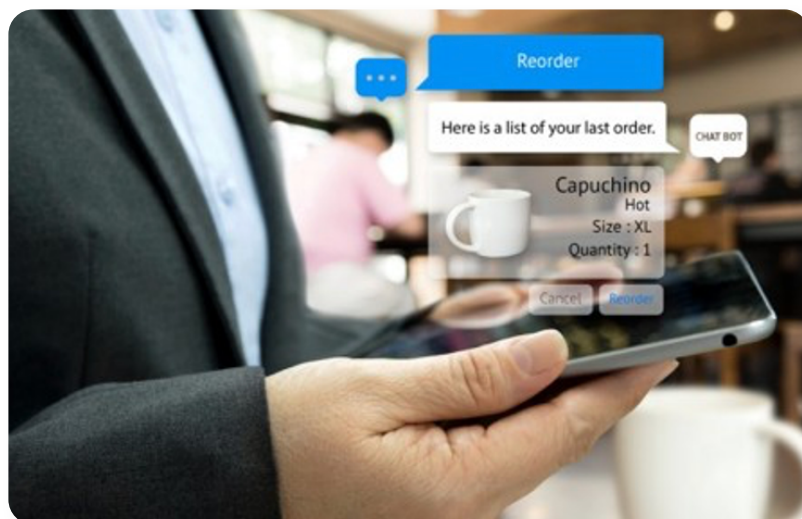


Image credit: Zapp2Photo/Shutterstock

5 ways chatbots improve CX

1 **Impactful business insights**

By collecting data from the chatbot conversations, businesses can get valuable insights into user experience (UX) and be notified early regarding any issues and any roadblocks that's customers are facing. The means that early prediction of other issues can happen or similar issues can be prevented in the future. Businesses can analyze the data from these conversations, by using advanced customer feedback analytics tools, such as Thematic, which can help decipher insights by theming and interpreting verbatim using AI free-text analytics.

2 **Reduce wait time**

Chatbots can reduce customers wait time and get them where they want to be quicker. Remember that cringe worthy on- hold music (especially the computerized ding-dong sounds, ugh!) – these could now be a thing of the past. The chatbot is always there. Which brings us to our next point...

3 **Always-on customer service**

The chatbot never sleeps and is able to offer 24/7 customer support. A cost-efficient, yet potent way to provide basic support. Best practice chatbots are trained by using historical conversations, thereby can action some of the most common tasks such as amending an invoice, answering basic questions about account balances, similar to a real support rep. In some cases, the chatbot can even distinguish human emotions such as anger, confusion, fear and joy. If the bot detects that the customer is angry, it transfers the interaction to a human to take over, which will provide a relief to said customer.

4 **Personalized human interaction**

The computerized chatbots can in fact also help personalize the customer experience in retrospect. Chatbots gather customer data from their interactions. With that data, real support reps can use the information to personalize their interactions with customers. Customer information can be fed to the agent in real time *when they're speaking to a customer on the phone), so the support rep can provide relevant solutions based on current needs as well as previous interactions with the company.

5 **Encourage employees**

A surprising benefit to AI can actually be to encourage support staff to focus on more challenging tasks. As AI has such great ability to mimic human behavior, staff may fear their jobs are at risk. To soothe these fears, companies must show their employees what's in it for them. Chatbots are actually a chance for support reps to focus on more high-value activities rather than routine tasks. For example, sales reps can use AI to make a better offer on a renewed contract, insurance providers are more likely to sell a policy when they can offer personalized advice ([Forbes, 2017](#)).

How to get actionable insights from collected data

Whilst AI technology is great, we still need humans! In fact, it doesn't actually matter how good an AI technique may be, only a real person can effectively decide what's actionable and what's insightful for the business (applying the right context with the correct historical knowledge).

Whether you're using a chatbot, NPS or another means of collecting customer feedback, you will need a reliable solution to be able to analyze the data you collect to be able to decipher insights in the right context. Verbatim, or free-text responses can be notoriously hard to analyze, which is why NLP methods are used to ensure correct analyzation. At Thematic we use NLP and ML in addition to our own AI which we've developed to analyze verbatim feedback responses.

Many companies collect vast amounts of customer data but simply don't know what to do with it or how best to derive meaningful insights from it. The key word being meaningful, as insights can be plenty but unless you can put them in to the right context it will be meaningless for your business.



What are actionable insights and can an AI deliver them?

When it comes to making sense of data, getting actionable insights is the holy grail. But when is a finding an insight? When is an insight actionable? Can data analysis deliver them? Let's get to the bottom of this by looking at some examples.

Non-insightful is everything that's old news to you. Something that you already knew was an issue. For example, the fact that some students struggle with too many exams on at the end of the semester.

Insightful is everything that you did not know. Or, you may have had a hunch or a suspicion. Insights are findings that contradict your knowledge, confirm your suspicions or quantify the importance. For example, if the analysis reveals that 90% of students in a college struggle with too many exams, this is insightful and worth re-thinking.

Actionable insights lead to either adaptation and action, or confirms the fact that no action is required. Actionable findings are those that translate into concrete actions. Companies need to ask themselves what can be actioned on? What hasn't already been actioned on?



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As an exercise, try to find examples of actionable insights in your business. We've come up with a few examples below. Which out of these would you say are actionable insights?

- Our NPS score this month dropped by 15 points
- Passengers complain at missed flight connections
- 20% of customers talk about price
- Buyers say that clothes sold by a competitor are better quality
- People talk about our brand more positively following a ban on plastic bags
- Twice as many detractors talk about product's ease of use

In fact, the first 3 bullet points are not actionable for the business, and not very insightful.

If your customers are saying that your competitor makes better quality clothes, that is a key insight that you can action. You can further enquire why (by asking for feedback through a survey) and drill down into what exactly the factor that they like about your competitor. If your company is a supermarket chain, and you ban the use of plastic bags for a couple of your franchises, this can have a positive effect whereby customers feel you're doing something positive for the environment. As an action, you can enforce this change nationally. If your detractors are getting frustrated that your product is not easy to use, that's something you can action and do something about straight away.

What AI can deliver today is the ability to sift through the data more efficiently. When it comes to making sense of people's comments, NLP algorithms can turn people's comments into themes that can be analyzed just like numbers. Following that, when it comes to making sense of structured data, data visualizations help understand differences, uncover correlations and detect trends.

When evaluating an AI solution, use the following questions to test it:

- Will this solution tell you things about your business that you don't already know?
- How easily will you be able to separate signal from noise?
- Will it be able to identify trends in data without having to specify them in advance?

At Thematic, we help companies to find insights by digesting customer and user feedback into easy to use data visualization. Regardless of how you adopt AI, the success lies, as ever, in uncovering customer insights, the deep truths that companies can use to create better customer experiences. As Quentin Hardy, Head of Editorial at Google Cloud, wrote for the Harvard Business Review:

“The technology works to the extent that its owners know what it can do, and know their market”.

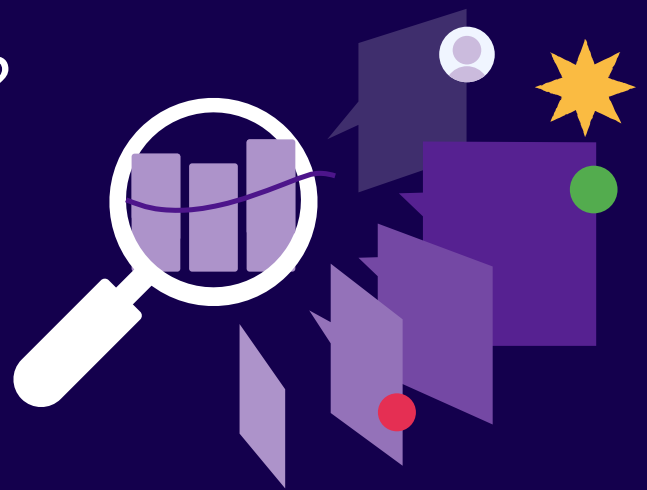


Want to spot customer issues before it's too late?

Thematic allows you to turn customer feedback into actionable insights. We provide a strategic, in-depth analysis of your customer feedback through AI text analytics.

Book a consult with one of our team - we'd be thrilled to show you how Thematic works!

Talk to one of our experts



getthematic.com