GETTING REAL ABOUT ARTIFICIAL INTELLIGENCE

How Machine Learning Can Help Marketers Find, Reach, and Keep Customers

Lineate

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INTRODUCTION

The impact of artificial intelligence (AI) has been promised for years, and most of the time people predict it's roughly 5-10 years away. Well, it's time to put your crystal ball away because AI is here, and it's bringing major benefits to the businesses who know how to use it. After all, the ingredients are all here: computer power affordability, sophisticated algorithms, and most importantly, the data needed to train AI systems and machine learning models is being generated in staggering amounts.

And that's just scratching the surface. The world produces billions of gigabytes of data on a daily basis, with 90 percent of all data in the world produced in just the last two years.[2] All of that data is the raw material from which to mine insights because "it exposes algorithms to more examples they can use to identify correct and reject incorrect answers."

90% of all data in the world has been produced in just the last 2 years.

In 2019, every minute of every day, the human species:[1]

- **Watches 4.5 million YouTube videos**
- **Downloads 390,030 apps**
- **Conducts 4.5 million searches on Google**
- **Post 55,140 photos on Instagram**

DEFINING ARTIFICIAL INTELLIGENCE

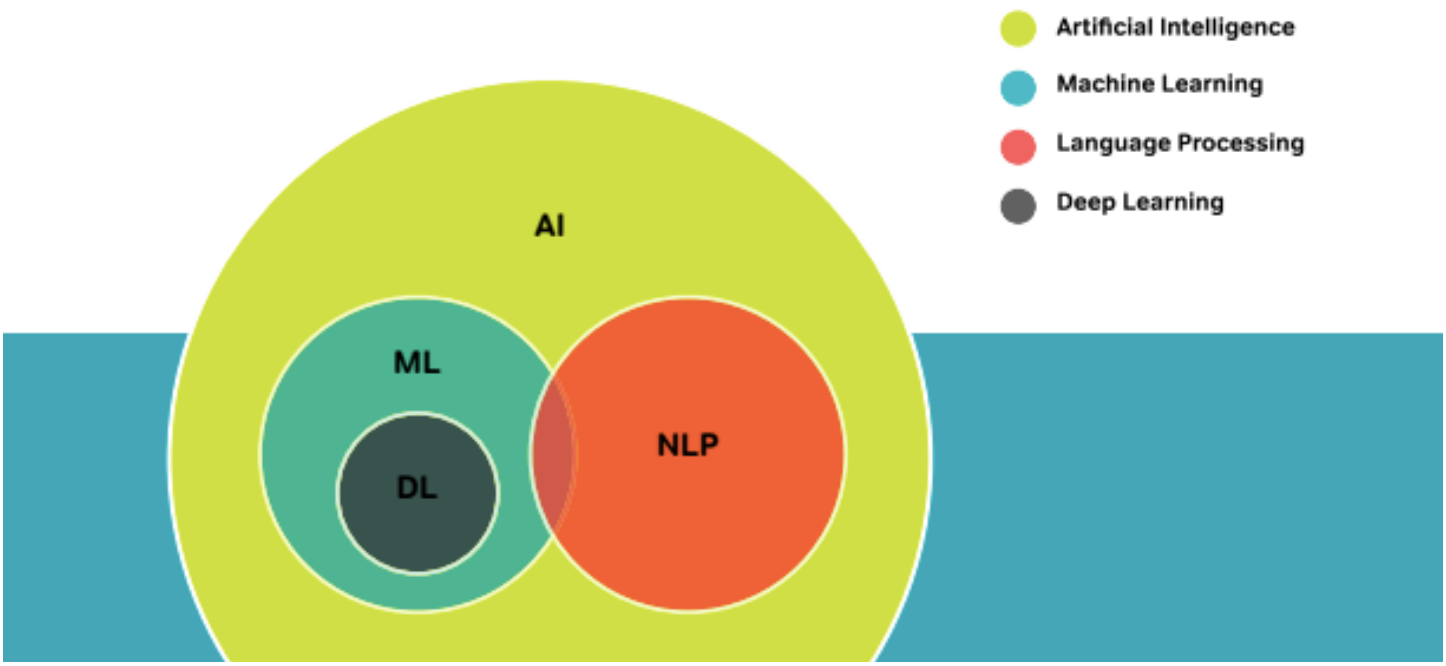
For starters, let's define AI: AI is the broader concept of machines exhibiting intelligence we might consider human-like—for example, solving a problem without step-by-step instructions. AI is, in other words, a catch-all term for a computer learning from patterns it finds in large amounts of data and improving as a result.

History Lesson, Anyone?

Did you know the idea of AI has been around since the 1950s? AI as a concept arose soon after the first digital electronic computers were developed in the 1950s. Alan Turing, the British mathematician and computer scientist (who helped Britain break Nazi codes during World War II), developed the Turing test, which poses the seemingly simple challenge: "Can a computer communicate well enough to persuade a human that it, too, is human." Throughout the 1950s, researchers at MIT and IBM worked on semantic networks for machine translation and self-learning software. But by the 1970s, the U.S. government grew impatient for practical AI applications and cut funding. Few advances developed over the next decade. A number of booms and bust punctuated the 1980s and 1990s, until early in the 21st century when advances in computing power and more data allowed for greater research into deep learning. Investors and researchers were convinced that AI was finally practical and profitable, and ready to go to work.[3]

MACHINE LEARNING'S ROLE IN ARTIFICIAL INTELLIGENCE

Today, the bulk of AI investment—some 60 percent—has gone into machine learning (ML),[4] which can include natural language processing (NLP), speech recognition, computer vision, predictive analytics, and data-based classification models.



Why is ML getting most of the love? Marketing potential. ML can improve customer service processes by determining if messages are complaints or compliments. It can listen to music and decide whether a song is happy or sad, and then find similar songs to increase engagement. And when large amounts of data are interpreted with Natural Language Processing (NLP), computers can listen to speech, determine what people are asking about, find the most relevant information, and give it back to them in a people-friendly format. Machine learning is the most prevalent for marketers, it's what we'll be focusing on in this guide. So, let's quickly define three ways ML models can "learn": supervised, unsupervised, and reinforcement.

1. SUPERVISED LEARNING

provides machines with a specific detail. And, with enough data on that specific detail, the machine will train itself to find other things, or "outputs," that are similar. When you upload a photo of a orange collared shirt to Pinterest, for example, you receive many visually similar blue collared shirts. Why? Because an algorithm has been trained to identify photos that resemble yours as containing blue shirts.

2. REINFORCEMENT LEARNING

improves how something works through positive or negative feedback. This type of ML is most prevalent in the technology marketers use to run campaigns. But what does this positive feedback look like? It could be a customer clicking an ad or making a purchase. From these positive actions, ML algorithms can recognize patterns in what leads customers to these positive decisions or even the type of customers more likely to purchase.[5]

3. UNSUPERVISED LEARNING

provides results based on patterns a machine sees in large clusters of data—not specific details. Travel site recommendations illustrate how this works. Travel brands collect tons of data on the customer journey, a customer's background, and what people consider when they book a trip. From that information, machine learning is used to provide others booking similar trips with recommendations. Each interaction strengthens connections about whether certain offers are purchased together (airfare and insurance) or how similar people behave while shopping (i.e. are seniors more likely to book first class flights?).

Now that we've defined what machine learning is and the different applications within the AI umbrella, let's explore what it isn't.

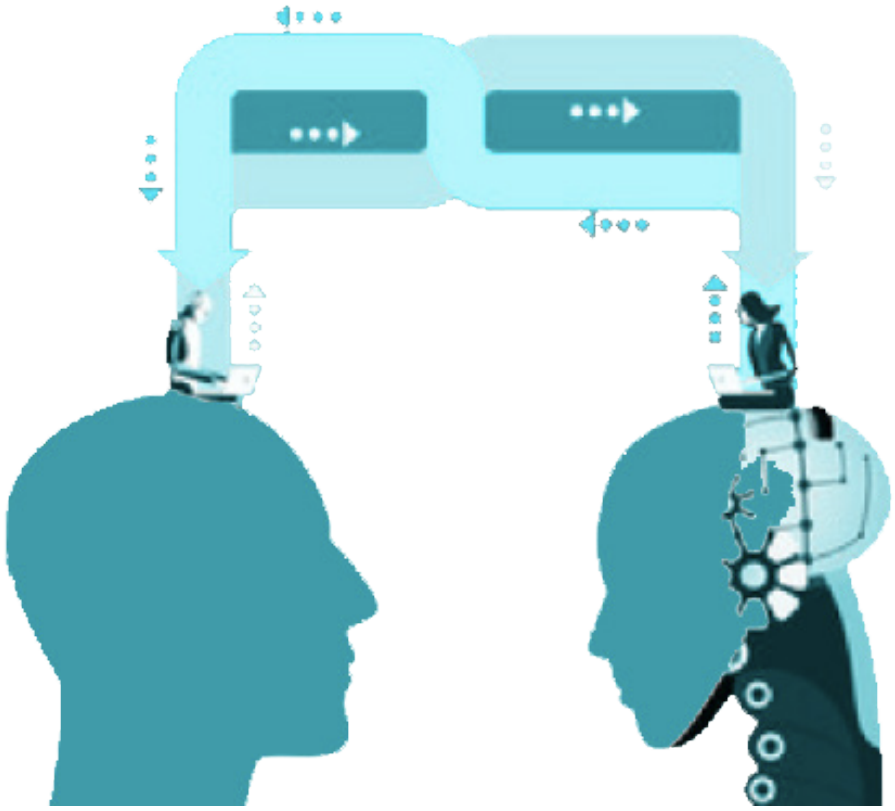
RULES-BASED VS. MACHINE LEARNING

In 2018, a record $9.3B was invested into U.S. AI startups.[6] But many of these companies may not be doing what is considered "true" AI. While a study of its kind hasn't been done in the US (yet), out of 2,830 startups in Europe that were classified as AI companies, a recent report found that only 1,580 had true AI capabilities.[7] Often, companies who say they utilize AI or machine learning are actually using some form of rules-based technology.

So, what's the difference and how does it affect marketing? A rules-based solution "allows marketers to deliver experiences to specific groups or segments of people based on the manual creation and manipulation of business rules."[8] For instance, if a person lives in ZIP code X, show her a coupon offer from merchant Y. Or if a person viewed shoes on his last visit, show him shoes again. This last example should sound familiar to anyone who's purchased a pair of shoes and is then retargeted for those same exact shoes (also known as rules-based gone wrong).

Machine learning, on the other hand, allows for real-time personalization and requires substantially more data in order to "dynamically present the most relevant content or experience for each and every visitor."[9] It works like this: A basic algorithm might use Natural Language Processing to analyze the keywords used in a search on a merchant's site to provide a personalized experience in real-time. Or it might use predictive analytics to base offers not only on a customer's ZIP code, but their behavior online as well, what similar users have purchased, any other brands they've visited, and more. With enough data, it's possible to present the absolute perfect offer at the perfect time and at the perfect price.

THE TAKEAWAY



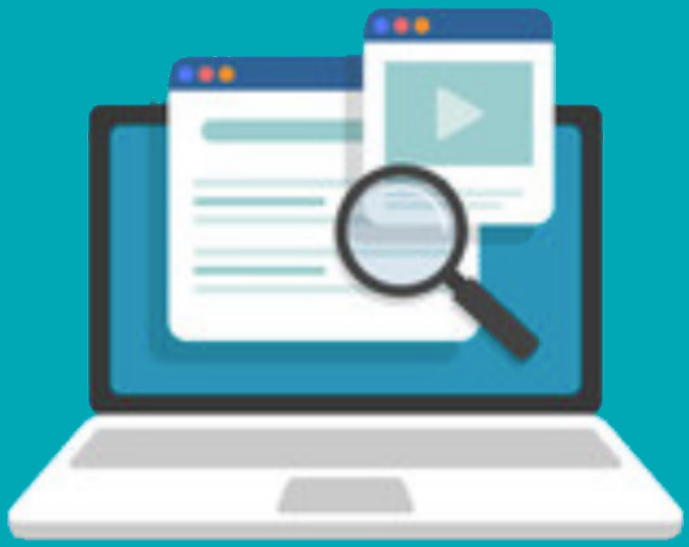
Rules-based isn't all bad. ML isn't all good. Ultimately, it depends on your needs. Rules-based software can be effective if you want to achieve something you've seen work before on a basic level. For example, in the past, anyone who came to this page made a purchase. So, in the future, if a person visits this page, let's serve them a coupon to increase the likelihood of purchase. ML applications require more data to train, and as a result, can make more informed decisions about what types of behavior may lead to purchase or what types of offers are most likely to resonate for a customer in real-time.

This guide explores machine learning's power to improve how marketers find, engage, and keep customers. Specifically, each section showcases how top brands in Retail, Travel, and Consumer Packaged Goods (CPG) are using the technology to better understand customer behavior to drive sales and engagement. You'll learn how the different types of ML work, which types of machine learning map to common marketing challenges, and what your brand can do to utilize machine learning as well.

FIND CUSTOMERS FASTER

In the last five years, the cost of acquiring new customers has increased by over 50 percent.[10] Machine learning, however, allows marketers to identify patterns in substantial quantities of data to acquire customers more quickly (and make the process cheaper). But what does this look like, exactly? For retail, it can mean building a predictive model to determine when customers are more likely to buy certain products. In travel, it may mean using natural language processing to identify what type of trip a customer wants to book. Consumer packaged goods, on the other hand, may use image recognition to fill in the blanks about consumer preferences in-store.

Now, while different industries use ML in their own ways, there is often significant overlap in terms of how the technology helps marketers acquire customers. So, let's explore how machine learning has improved the way in which marketers find their best customers and success stories your brand can learn from to do the same.



FORECASTING TO FIND YOUR BEST CUSTOMERS

Forecasting "uses past data to predict and meet the demands of consumers to anticipate needs, identify new sales opportunities, control pricing and inventory, and more..."[11] thus making it a life-or-death process for successful marketers.

A quick note: Whether you say "predictive analytics" or "forecasting," the two can be used interchangeably. Most marketers are familiar with using predictive analytics in cross-channel marketing platforms to optimize campaigns, provide insight into lookalike audiences, or offer suggestions for campaign budgets. But, the impact of predictive analytics goes way beyond campaign optimization. Accurate forecasting can help marketers understand consumer purchase patterns before someone even buys, allowing for more strategic promotions, relevant in-store experiences, and ultimately, a deeper understanding of what people actually want.

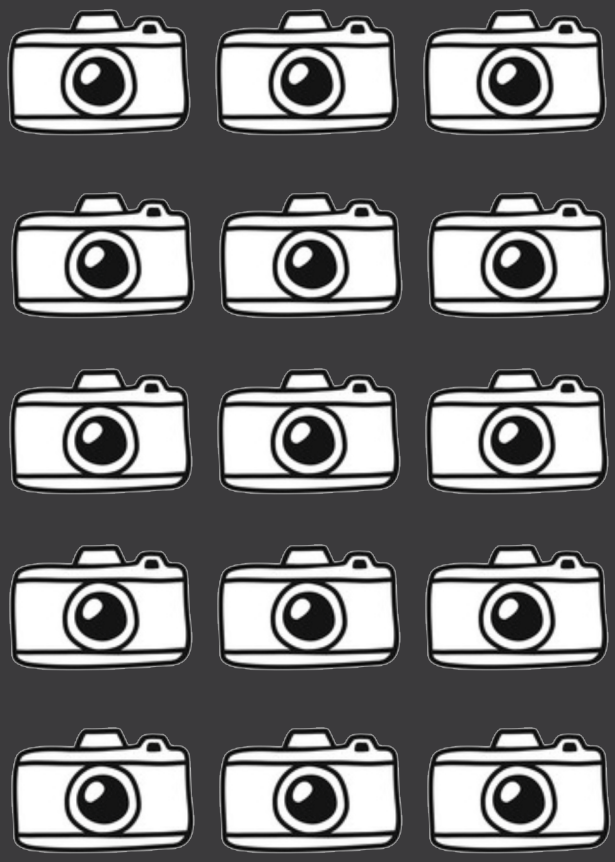
AirBnB is a heavy user of data to forecast demand. The company has an astonishing 11 petabytes of data that AI algorithms trawl through looking for patterns to guests' bookings. This allows AirBnB to let hosts know which dates are most likely to be booked at their current prices, as well as when they are less likely to be booked. This is followed up by dynamic pricing suggestions, which subsequently helps AirBnb provide more value to hosts and advise when to make pricing changes around events like New Year's Eve in New York.[12]

The secret sauce to achieving this? Loads of (well-organized) data. Historically, demand forecasting has an error rate of 32 percent because of a substantial number of causal factors from historical sales data to supply chain set-up, advertising campaigns, prices, and weather forecasts.[13] Machine learning algorithms, however, are designed to account for these causal factors and find patterns within them. It's because of machine learning, in fact, that forecasting errors in retail could be reduced by 30–50 percent and customer losses due to product unavailability could be slashed by 65 percent.[14] Research also shows that if CPGs take advantage of ML and predictive demand forecasting, they may be able to generate a staggering 10 percent increase in revenue growth.[15]

Lineate's chief revenue officer, Elizabeth Gallagher, explains how predictive analytics can help marketers understand data to uncover customer insights. "A concrete way of using machine learning is by finding patterns across your different demographics, and all the different segments and types of audiences that are engaging with your brand,"[17] she explains. "And using machine learning to figure out the patterns that get people to the second purchase. What was the timing? What are the promotions? What's the price? What is the outreach and engagement? Machines are going to be able to discover all kinds of patterns we wouldn't think of, or be able to evaluate given the sheer amount of data."[18]

What To Do If You Don't Have Enough Data

But what if, like many smaller companies, you don't have enough data to build your forecasting or image recognition models? Well, a lot of data is available for free on the web. In May 2019, Google released a set of 5 million images of more than 200,000 landmarks around the world, allowing anyone access to the data to train visual recognition models.[16] Other companies sell data sets to train chatbots or increase the accuracy of recommendation engines. And of course, there are ways of getting access to more first-party data through data orchestration platforms.



DYNAMIC PRICING

Let's focus on one of the most common forecasting use cases: dynamic pricing. Or, adjusting price based on demand. But, how do algorithms determine what price a customer is willing to pay? As one study explains, "The optimal price for a product depends on many factors: the day of the week, season, time of day, weather, channel and device, competitors' prices, and much more."[19] ML can churn through all that data and arrive at the best price for that customer to ensure the likelihood of a sale.

In travel, accurately forecasting demand is crucial for delivering the right price at the right time to the right customer. It works like this: When a customer searches for airfare, the airline uses search history and other data to display prices based on which fare class a customer is most likely to purchase. The fares will likely be quite different than the ones shown to other customers searching for the same ticket at the same time.[20] Ultimately, figuring out how to harness data effectively for pricing is critical to acquisition. A McKinsey report said travel businesses are 23 times more likely to acquire a customer if they employ a data-driven strategy.[21]

Dynamic pricing is also exciting for marketers in the hotel industry. Prior to its acquisition by Marriott in 2016, Starwood Hotels & Resorts spent $50 million on developing its demand forecasting system. In real-time, this system used ML to "learn" how to price rooms to boost revenue and profits. This was a marked improvement over the old method of room pricing, which was updated 2–3 times a day. Starwood's software allowed it to update room pricing in near real-time based on "a dizzying number of behind the scenes calculations in Starwood's data center."[22]

The system cross-checked past and present reservation data, booking patterns, cancellation rates, occupancy data, room type, daily rates, as well as whether you're a solo traveler a group. It also analyzed external data, such as competitive prices, weather, and other sites' booking patterns. Building an algorithm capable of processing these factors led to a 20 percent improvement in demand forecasting, and a better sense of what customers consider when making a major purchase like booking a hotel room.[23]

Dynamic Pricing Considerations In Travel

- **Past and present reservation data**
- **Booking patterns**
- **Cancellation rates**
- **Occupancy data**
- **Room type**
- **Daily rates**
- **Solo vs. group travel**
- **Competitor prices**
- **Weather**
- **3rd-party site booking patterns**

"Algorithms are constantly evaluating how many searches are made, and how many eyeballs are on a certain page and how many of them are converting. So as more people choose a particular flight or hotel room, the algorithm will then inform dynamic pricing," Lineate's director of AI, Allen Yu, said. "And that pricing will adjust accordingly. If five people within the last hour purchase, the machine takes that into consideration and adjusts prices up. Likewise, if it's been sitting there for a long period of time, and historically speaking, theserooms have booked but more recently has not, the algorithm will inform the price to drop."[24]

GEO-TARGETING POWERED BY PREDICTIVE ANALYTICS

Like dynamic pricing, predictive geo-targeting allows brands across many industries to acquire customers more effectively. In particular, ML-based location targeting has been successful for brands in the CPG and retail industries. After all, **77 percent of consumers use their phones to compare prices on products while they're browsing in the aisles of the store.**[25] So, a well-timed coupon based on a customer's location—usually sent as a text message with a promo code—can encourage a customer to buy when they wouldn't have considered it otherwise.

Location targeting is by no means new. That said, using location data to predict the best time to send a customer a coupon for a store they pass every day is an exciting use case. But, many brands are hesitant about getting this granular. And it makes sense. There's a fine line between useful and creepy from a consumer's perspective. Gallagher explains,"That's where partnering with a company who knows how to use data in a way that's valuable from a customer-perspective is really important."[29]

Why does this matter? Marketers can use this as an opportunity to build loyalty. Travel brands may, for example, exclusively inform high-priority travelers or customers in the consideration phase when a price is likely to drop or rise in order to nudge those customers to buy. In other words, ML allows marketers to discover new ways of acquiring customers by anticipating behavior and adjusting content accordingly—ensuring the likelihood of purchase and a greater number of sales long-term.

Geo-Targeting Success Story: Foreknow

Foreknow, a geo-targeting company specializing in food and beverage, needed a way to make their real-time location data more actionable. To help, they tapped Lineate (that's us!) to use their data to create a predictive analytics algorithm to find the best time to send a coupon to a customer.

"We know that people will plan where they're going to get their coffee before they get on the subway," said Gallagher. "And we know what route they take based on the historical data we've gathered about them. And then they get a coupon for their favorite coffee shop 30 minutes before they pass."[26] Once the algorithm was built, Foreknow used DataSwitch, a data orchestration platform, to organize their audience segments and push coupons.[27] The result? Within six weeks, Foreknow turned its algorithm into a fully functional predictive geo-targeting marketing tool and landed its first major restaurant client—supporting 992 stores across the country.[28]

Back to another ML success story, shall we? French supermarket, Carrefour, is also a leader in geo-location to drive sales. The company put wi-fi beacons—small wireless sensors that can be attached almost anywhere—to gather shopping data via the brand's app. When customers used Carrefour's app while browsing, say, the produce section, the app would relay the customer's precise location (i.e. in front of the bananas), analyze the customer's past purchase patterns (lots of banana purchases in late March) and the time of year (i.e early April), and then push a notification to the smartphone announcing a relevant sale or coupon. Carrefour saw a 600 percent increase in their app downloads and a 400 percent increase in app engagement.[30] Furthermore, the data collected from customers' movements through the store and their purchases allowed Carrefour to optimize stores' offerings and aisle layout. This example in particular proves this is one strategy marketers should explore. After all, creating an in-store promo app will allow marketers to collect more customer data, provide greater incentive for customers to shop, and connect the dots on customer behavior online and in-store. **In fact, McKinsey estimates precise location targeting could increase CPG sales specifically by 4-6 percent.[31]**

VISUAL SEARCH AND IMAGE RECOGNITION

We've all heard the phrase "a picture is worth a thousand words." This is an understatement when it comes to the potential for visual search and image recognition in marketing. Simply put, visual search is when you search for something using a photo and with ML, are presented with visually similar alternatives. You could, for example, snap a picture of a dress, and use visual search to find the designer and where to purchase it. Along the way, machine learning-powered visual searches could also list similar dresses, or accessories.

Questions to Ponder When Picking An ML Partner

Most brands outsource for the expertise needed to build ML applications. Ask the following questions to ensure the vendor can meet your needs in a timely way.

- **What is your approach to building ML algorithms? Is it iterative? How long do they usually take to train?**
- **How do you determine whether ML is actually a viable solution? What experiments do you set up to determine viability?**
- **Do you use any existing market tools or models to ensure time isn't wasted building an algorithm from scratch? What do you use and from where (i.e. Google ML)?**
- **For the problem we are hoping to solve, how long would it take to train the model?**

In 2018, Pinterest reported 600 million visual searches every month.[32] Unsurprisingly, Target announced it would integrate Pinterest's visual search technology (Lens) into its mobile app.[33] A Target executive explains what people love so much about visual search and why marketers should take note, "This Pinterest partnership quite literally helps us shorten the distance from when our guests have an idea to when they're ready to make a purchase," said Target Chief marketing officer Rick Gomez. "It's another way we're making it easy and fun for guests to find new products. Beyond acquisition, as we start to understand what shoppers are looking for, it'll help us anticipate—and plan for—the latest styles and trends."[34]

HOW COCA-COLA KEEPS AN EYE ON STORE SHELVES

Visual search and image recognition not only provide marketers with greater insight into customer behavior online, but also in-store—making it critical for CPG companies hoping to stand out among a sea of competitors. In 2017, for example, packaged products sales in supermarkets' middle aisles fell by 1.7 percent, according to research firm Nielsen.[35] Sales at the 10 big CPG food companies have been flat or declined from 2014–2017.[36] Coca-Cola, the world's largest beverage company, is leaning hard into machine learning to push back against this trend.

The company sells more than 500 brands of soft drinks to customers some 1.9 billion times a day in more than 200 countries.[37] Previously, Coke conducted manual audits of store shelves. Now, the brand uses AI-enhanced software products from Trax, which allow for store shelves to be photographed on mobile phones. Using image recognition and other machine learning applications, Coca-Cola gets insight into shelf patterns and changes much faster than before.[38]

Don't Miss Out On This Pinterest Acquisition Trick:

When retailers upload their product catalog to Pinterest (free-of-charge!), Pinterest's Lens Technology captures the products, categorizes them, and ensures that those products come up during relevant customer searches.

Why does it matter for marketers? Greater visibility in stores will allow unparalleled insight into what customers are actually buying. "We had limited visibility about what's going on in stores," said Ariel Rodriguez, Coca-Cola's director of execution planning and performance. "We now understand what happens in stores better than ever. Millennials (desiring) healthier options are buying more from the perimeter of stores. This is helping us to put the right products in the right place."[39]

Image Recognition-Powered Product Management

While several CPGs use Trax, not all brands may want to use the exact same software as their competitors.

- **Consider building a custom app that utilizes image recognition to.**
- **Empower sales reps to report product management gaps from their smartphones.**
- **Provide real-time insights on planogram compliance and product placement.**
- **Reduce restocking inaccuracies due to human error.**

NATURAL LANGUAGE PROCESSING & CHATBOTS

At one point or another, we've all yelled "REPRESENTATIVE" at a dumb phone robot. And the brand using that phone robot probably lost your business (or at the very least your respect). But, thanks to natural language processing, this is becoming a thing of the past.

Voice search and chatbots are powered by Natural Language Processing or, the type of ML that processes what you're saying, what it means and in what context. Lineate's AI Director, Allen Yu, explains how voice search could help marketers understand a customer's thought process during a traditional retail purchase: If a brand combines visual and voice, for example, devices can become personal shopping assistants with infinite customer insight. Let's say a customer asks a device to find work-appropriate jeans. In turn, the device says, 'Do you mean something like this?' while showing certain options. If the shopper replies, 'I'd prefer a different color,' the bot will provide new suggestions. If the shopper rejects those options too by saying, 'I need it for work. It needs to be more professional,' the device will provide more professional options.[40] Through this back and forth, the device learns not only what colors a customer prefers, but what someone in that shopper's demographic may consider "professional." This is valuable information marketers can use when selecting campaign creative or tailoring messaging.

In travel, NLP is utilized both as a tool to acquire customers more quickly and improve customer experience once someone has already purchased (more on that in the next section as well). A traveler-to-be may ask a chatbot in WhatsApp or Facebook Messenger, "Show me flight options from Los Angeles to New York for Christmas." Then adding, "Use frequent flier miles for the purchase." And if the chatbot has access to enough customer data, it can return a highly tailored list of recommendations, increasing the likelihood of a purchase.

Kayak is currently the gold standard to follow for marketers hoping to improve how customers shop with chatbots. Whether on Alexa, Slack, or Facebook Messenger, Kayak takes simple requests—"I want to fly to Mexico City in September"—and will help travelers book flights, hotels, cars, or just find someplace to explore.[41] It also sends travel plan updates to customers via messenger (so we never have to press 4 for a callback from that dumb robot again). Kayak CEO, Steve Hafner, highlights the importance of using ML investment to increase convenience for customers: "There's a whole generation who are more familiar with text messaging and voice via Siri looking for a different interaction with an online travel agency," he states. "We have voice interaction with Alexa, where you can actually talk to Kayak and say, 'Hey Kayak, what's the status of my flight to Denver later today? Where can I go this weekend for $300?'"[42]

ENSURE YOUR DATA IS MACHINE LEARNING LEARNING READY

Effectively utilizing ML starts with having your data organized in a way that makes it easy to understand. This can be a substantial challenge for brands that have a presence both online and in-store (aka legacy retailers or CPG brands). Lineate's Gallagher sheds light on how one popular chocolate brand struggled to connect in-store purchases and digital campaigns. "This company ran tons of campaigns offering chocolate promos. But, they had no idea who was buying in all the stores where their products are sold versus who is buying online and what the relationship was between those people," she said. "With no way to connect the dots on data, they didn't know how much of it was promotional versus impulse buys, etc."[43] "This is known as data silos," she continued. "Even if a CPG or retail company wants to train an ML model to predict which promotions are most likely to be effective, there's no way to do that with data that exists in 75 databases."[44] In other words, to effectively utilize ML, brands must first find a solution that allows them to unify, organize, and utilize all of this data (like data orchestration) to truly understand what messaging is and isn't working, and how they can create more relevant marketing experiences.

It makes sense why industries like retail and CPG would struggle with dismantling data silos. After all, think of all the different touchpoints: multiple distribution channels, offline/online behavior, a vast number of products, SKUs, geographic regions, and more. That said, those who find ways of incorporating it even on a small-scale are likely to reap big rewards. **Research by McKinsey and the Massachusetts Institute of Technology shows that companies that incorporate big data and analytics into their operations are 5 percent more productive and 6 percent more profitable than their competitors.**[45]

Companies that incorporate big data and analytics into their operations are:

5% more productive

6% more profitable than their competitors

No matter your industry, customer acquisition is more challenging for marketers than ever before. In a recent Hubspot survey, 69 percent of respondents shared they do not trust advertisements, and 71 percent said they do not trust sponsored ads on social networks.[46] But, by utilizing machine learning, marketers can develop the insight they need to rebuild trust and find customers faster. After all, with predictive analytics, you can forecast which customers will be most receptive to what you're selling. With personalization, you can dynamically tailor your messaging based on their needs. And with chatbots and NLP, you can proactively address any questions or concerns your customers have—reducing any friction on their path to purchase.

That said, just because you've acquired a customer doesn't mean your job is done. It's vastly more cost effective to keep a customer than to invest in finding new ones regardless of your acquisition strategy. So, let's explore how machine learning can help keep people engaged long-term.

Engage Customers More

For most people, engagement means putting a ring on it. For marketers, it means building a different kind of long-term relationship. How so? By convincing customers to buy more once they've made a purchase or have them explore more of your content to build loyalty and trust. And if you're considering investing in ML, algorithms focused on engagement are a great place to start as research shows that the cost of finding new customers is far more expensive than working to keep the ones you already have. **In fact, studies have shown that the success rate of selling to a customer you already have is 60-70 percent, while the success rate of selling to new customers is 5-20 percent.**[47]

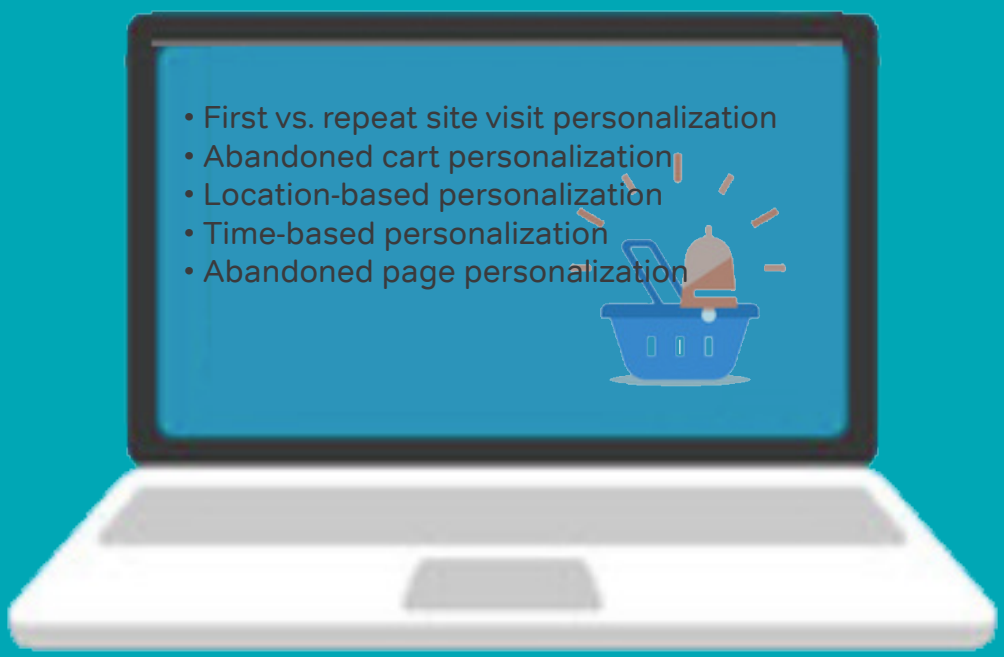
This section shows how machine learning helps marketers improve customer engagement from content recommendation to every brand's white whale: meaningful personalization. Let's dive in.

PERSONALIZATION

It's probably no surprise that personalization is one of the most prevalent use cases for ML. A 2018 Accenture study found that a whopping 91 percent of consumers are more likely to buy from businesses that provide relevant offers and personalized recommendations.[48] And for anyone thinking they have time to figure out how to achieve personalization "eventually"—think again. A recent Salesforce study found that 51 percent of consumers expect that companies will anticipate their needs and make relevant suggestions before they even make contact by 2020.[49]

In retail, the right data can help marketers effectively put the right product in front of a customer at the right price at the right time, increasing the possibility of a sale. Stitch Fix, an online personal shopping company, combines machine learning and human stylists to eliminate the need for customers to go out and shop or even browse online. By collecting a large amount of data on customer preferences upfront, Stitch Fix regularly sends personalized items right to their customers' doors. Over time, factors including style trends, body measurements, and especially feedback on what a customer keeps or returns improves the brands algorithms as well. The result? An ability to determine a customer's preferred style, anticipate preferences before the customer does, and even identify trends among similar customers by age, zip code, and demographic information.[50]

Similarly, ML-powered landing pages embody the idea of putting the right product at the right time in front of the right customer. And while different industries may provide different offers, the basic ways in which to personalize are similar across the board:



In practice, it works like this: if a customer is heading to your page from Brazil, your homepage should automatically only show products your site is able to ship to Brazil, or what past visitors from Brazil considered while shopping. Or, if a customer visits your page at night, dynamically changing your homepage copy to speak to that night owl while they browse is more likely to delight them in the long-run.[51]

88 %

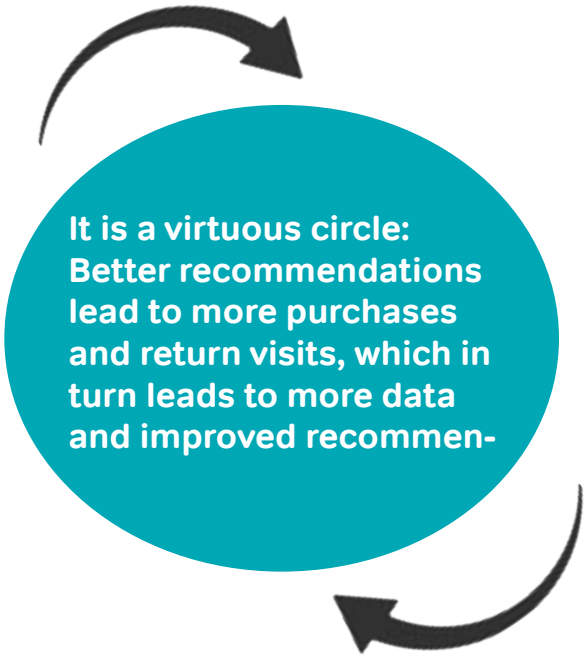
of people are more loyal to a travel provider that offers personalized deals.

When it comes to personalization, travel is leading the pack—largely due to major ML investments. A recent survey reported that 43 percent of travel companies are making "targeting and personalization" a top priority in their digital strategy.[52] In a survey of 2,000 United States travelers, Mindtree found that 88 percent of respondents are more loyal to a travel provider that offers personalized deals.[53] United Airlines has been particularly successful in using ML to personalize its marketing materials. The airline tracks customer behavior data and pairs it with historical data such as search destinations and purchases to create detailed customer segments.[54] Then, the airline adjusts specific landing pages, layouts and content on its websites to increase sales.

While travel companies are interested in personalization to increase sales, customers are interested in it for tailored experiences. Almost 90 percent of travelers worldwide say they want a personalized with 85 percent of respondents saying personalized itineraries are better than standardized ones. 83 percent of millennials said they would allow travel brands to track their behavior if it meant a more personalized travel experience.[55] And leading the personalization push is Gen Z, larger than the millennial generation, and with a global buying power between $29 billion and $143 billion in direct spending.[56] This is super important for marketers as data laws like the GDPR and CCPA become commonplace. Why? Younger travelers don't mind giving their data away as long as you use it to improve and personalize their interactions with your brand.

"The marketing potential of Gen Z can't be ignored," said Michael Edwards, chief growth officer of travel company Intrepid Group of Melbourne. "We find that the most effective way to attract Gen Z travelers is by taking a more targeted and personalized approach. This even ranks above discounts and perks when it comes to achieving this audience's loyalty."[57] Providing personalized offers can be a huge area of opportunity for marketers in this industry because most consumers feel travel brands aren't getting it right. According to a recent Mindtree's survey, only 23 percent of customers who received offers from travel companies rated the offers as excellent, based on the customer's preferences. Less than a third—31 percent—report using offers most of the time. The most common reasons offers aren't used? They don't arrive at the right time or expire too soon (45 percent), or don't offer enough savings (35 percent).[58]

Interested in creating custom site experiences for travelers-to-be? Lineate specializes in merging cross-channel customer data from cookies to past purchases to enable dynamic, personalized pages for customers in real-time. Reach out to learn more!



Personalization matters to people, period. It's why brands have invested so heavily in figuring out how to do it in the right way, whether based on location or individual customer behavior. Similar to personalization, another ML-powered strategy customers love is product and content recommendation. And it makes sense. The busier people get, the less time they have to think about what they need. Well-executed content recommendation can serve as a reminder for what people may want before they think of it themselves. The next section focuses on the brands using it well and how marketers can explore this strategy themselves.

In other words, recommendation algorithms allow marketers to engage existing customers more by developing a solid understanding of what products customers want and showing them content that reflects that preference. Amazon leads the pack here by using unsupervised learning algorithms to analyze past purchases, browsing history, etc. to show customers items they most likely buy. This creates a virtuous circle, as better recommendations leads to more purchases and return visits, which in turn leads to more data and improved recommendations. Roughly 35 percent of Amazon's sales are generated from their recommendation engines. Roughly 35 percent of Amazon's sales are generated from their recommendation engines. While the vast majority of brands don't operate at Amazon's scale, recommendation algorithms can be a critical investment for medium-sized retailers.

CREATING BETTER CONTENT RECOMMENDATION

Fundamentally, content recommendation is about making connections. Lineate's Gallagher explains how machine learning allows marketers to make better connections between data points to recommend content: "Machine learning is why some brands figure out which products to place on the page for which customer and others don't" Gallagher states. "To personalize in real-time, brands need ML to make accurate connections. For example, if a customer purchases X items on the same day every month... let's say payday. Are people who look like that customer also likely to make similar purchases on payday?"[59]

AMAZON

35%

of Amazon's sales are generated from recommendation engines.[60]

Getting Started with ML in Retail

In retail, a great way to ensure you get more training data and make real-time connections between different products is by incorporating opportunities for customer feedback into your site UX. For example, Amazon encourages customers to click thumbs up or thumbs down icons while shopping to indicate interest. If someone clicks the thumbs up, the product page immediately reloads with similar products based on other past click data.[61]

Travel brands use content recommendation to increase cross-selling opportunities as well as to shorten their customers' path to purchase. And it's necessary. According to Google, the average consumer explores 500 different touchpoints before booking a flight.[62] Expedia experienced this problem on a smaller scale. Expedia found that travelers searched about 48 times across various travel sites before booking a flight.[63] So, using ML, the travel company searched for patterns that led to the shortest path-to-purchase and provided custom recommendations to simplify the booking process.

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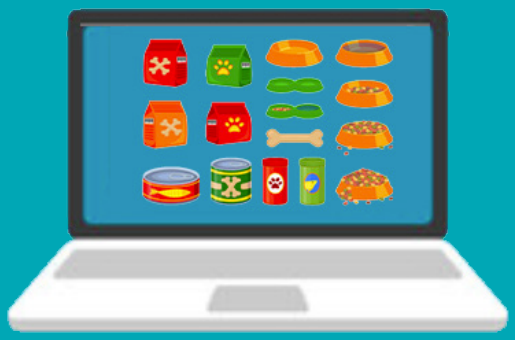


Many traditional brands in CPG may not have the same access to data as today's digitally-focused travel brands do. But, some brands have found ways to collect the data they need to increase engagement—like Nestlé. The CPG giant chose to invest in ML iteratively—first focusing on one of its major pet brand's (Petcentric.com by Purina) online engagement versus creating a more connected presence from the get-go. Here's how: Starting off small, Purina used only local weather data to provide more relevant content for site visitors such as local, pet-friendly activity suggestions.

For any users who engaged, Purina incentivized them to provide more concrete data like their name, email, and of course, details on their pets. Now, here's where the machine learning comes in: if users returned to the website, a personalized welcome-back message would be displayed with pet-specific content based on not only that user's history, but the engagement history of people with similar pets as well. The results of Purina's data leveraging efforts? A 37 percent decrease in website bounce rate and a 20 percent decrease in sessions that were 10 seconds or less.[64]

So, you've found the customers you want. You've identified the best way to keep them engaged. Now comes the tricky part: figuring out how to retain them for the long haul. Successful brands retain customers long-term by building trust and creating emotional connections between themselves and their customers. But how, and what is machine learning's role in executing this? Read the next (and final section) to learn more.

KEEP CUSTOMERS LONGER

It is 30 times more expensive to obtain a new customer than to retain your old ones

Here's an obvious statement: Customer loyalty is a great thing, and for many reasons. Not only is it up to 30 times more expensive to obtain a new customer than to retain your old ones,[65] loyal customers tend to make larger purchases, meaning a larger return on investment from your campaigns. Here's another fun fact: **On average, a company with a 40 percent repeat customers rate earns 50 percent more revenue than a company with a 10 percent repeat customer rate.**[66] While there's overlap between engagement and retention, for our purposes, customer retention means ensuring a customer remains loyal to your brand and does not purchase from one of your competitors. But how does machine learning fit in? In retail, for example, predicting customer needs using ML has led to an industry-wide decrease in returns—2 million fewer product returns per year.[67]

We'll share how marketers are using machine learning to enhance loyalty programs, make product recommendations, and proactively communicate with customers to provide best-in-class brand experiences. Plus, we'll share tips on how you can strike a balance between exploring ML in your marketing while still prioritizing customer data safety.

THE POWER OF PREDICTIVE LOYALTY PROGRAMS

Once a customer has made a purchase, loyalty programs are a great way to retain them. That said, many loyalty programs fall short due to a lack of relevant offers.

77% of loyalty programs fail within 2 years of launch because companies don't take advantage of their data.

In fact, 77% of loyalty programs fail within two years of launch because companies do not take advantage of the data they have.[68] But, the benefits of investing in a well-run, machine learning powered rewards program is worth it—just ask CVS. CVS is known for sending highly personalized discounts (often in the form of a mile-long receipt) to customers that join their ExtraCare loyalty program. They utilize many machine learning solutions, such as lookalike modeling, dynamic pages, and content recommendation for individually targeted offers to their customers.

It is a complex mix of interwoven data, including a customer's shopping history, demographics, geographic location, and even the weather! For instance, if a customer has bought allergy medication in the past, CVS will send a coupon for an allergy med on a day where the pollen count is especially high in their area. Or, they can send offers on toothpaste or shampoo when they predict a customer is running low.[69] These well-timed, cross-channel marketing messages combined with rewards for continued patronage ensures that customers will stay loyal to your brand and not run to competitors.

For CVS, it's all about nurturing repeat customers through well-timed, strategically relevant communication. They send only relevant incentives at the right time, in the right way. "The market is changing at a rapid, rapid pace," notes Michele Driscoll, VP of loyalty and personalization for CVS. "So, really the hardest thing is making sure that we see what our customers are telling us and respond in a way that keeps her engaged and coming to CVS."

With that in mind, CVS's ExtraCare membership has more than 80 million active members, which is roughly one in four households in the United States![70] What is astounding is that loyalty members make up 84 percent of total front store sales,[71] with the top 30 percent accounting for three-quarters of CVS's margins.[72]

Like the retail industry, travel relies heavily on creating positive brand experiences to increase loyalty. American Airlines' AAdvantage rewards program, for example, provides highly personalized messaging that includes not only rewards information, such as frequent flyer miles and upgrades, but also details on flight information and things to do when their customers reach their destination. The AAdvantage rewards program also allows customers to earn points through partnerships with hotels, credit cards, and even restaurants.[73] In fact, American Airlines has over 1,000 partnerships, which means a deluge of additional data to use.

When it comes to partnerships, your company may want to identify patterns among which offers customers prefer. Are certain offers considered longer than others? Did certain offers receive more engagement at different times of year? Once you know the pattern you'd like to optimize for, you can use machine learning to confirm your hypotheses. While figuring out the right place to focus your efforts may seem overwhelming, companies that take full advantage of ML algorithms like American Airlines, can gather the insight necessary to retain customers for the long-haul.

While using ML to anticipate customer needs isn't as prevalent in CPG, brands who take this leap will be at a huge advantage in this fiercely competitive industry. After all, it's no surprise that as consumers shift their purchasing online, brick-and-mortar stores are left wondering why, exactly, they may not be measuring up. And it's more critical than ever that CPG brands understand how consumers really feel about them. In 2017, there were 9,000 more CPG products jostling for less shelf space and 1,000 fewer stores to sell to, according to a Nielsen study.[74]

To improve the effectiveness of CPG retention efforts, marketers must engage directly with customers to get more accurate data. Here, loyalty programs and ML-powered social listening tools can help companies monitor conversations, analyze customer sentiment, and identify behavior crucial to building positive relationships between consumers and brands. ML can help CPGs to use data from past promotions to analyze how strategies are working and get recommendations for future promotions. A well-organized loyalty program, for example, will generate more data than traditional print coupons, leading to trackable, personalized promotions that run at the right time and right place to generate high returns.

Building A Data-Driven CPG Loyalty Program

In-store purchases don't automatically mean an inability to connect the dots on customer preferences and behavior. Earlier, we covered how Foreknow uses predictive analytics to send customers timely promotions for stores based on their daily routines. Similarly, CPG companies can invest in loyalty programs that engage with customers based on their daily routines, preferences, and habits to determine which offers resonate. Plus, this type of loyalty software will allow CPG marketers to increase the amount of first-party data they have, all while providing more relevant offers based on customer behavior across social media, website, and even offline.

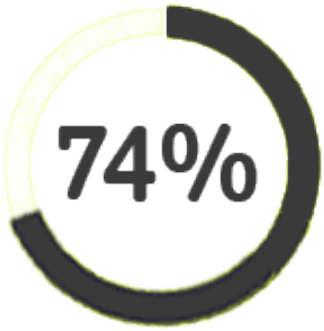
USING ML TO LISTEN WHEN CUSTOMERS SPEAK

One of the most important elements of customer retention? Listening. Machine learning allows brands to identify what customers are saying, the sentiment behind it, and how the types of responses that have resonated in the past. Tapping into this understanding leads to better marketing and brand experiences, which in turn, creates more engaged and loyal customers.

In hospitality, listening to customers helps brands provide guest experiences that outshine competition—not only in-person, but online as well. In fact, almost 90 percent of travelers report they would switch to a competitor in the face of a poor digital experience.[75] The good news is that 74 percent said those companies did try to win them back and 85 percent said the attempts helped restore their trust in the provider.[76] Even if customers do have a poor experience with your brand, ML can help manage expectations during the full customer lifecycle by improving personalization, tailoring recommendations, and enabling fast response times even when staff aren't around.

Dutch airline KLM is using ML to field customer service requests via social media, often without the intervention of a live agent. KLM says its team of 250 social media service agents have about 30,000 conversations a week, double the volume of the year before. Customers contact KLM through Twitter, Facebook, and WhatsApp. Most conversations consist of five to six questions. KLM built an ML platform that analyzed customers' questions and returned suggested responses that shows up on the screen of a customer service agent.

After a poor digital experience from a travel company:



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The agent could accept the answer, reject it, or send a personalized response. Because their customer service process uses machine learning, it's gotten more accurate over time, allowing KLM to automate the most common questions and save the tough stuff for human agents.[77] Using NLP to decode the sentiment of social media posts and relating it to a traveler's journey, these ML-powered social listening tools can detect frustration mid-trip and automatically reach out with real-time interventions that are likely to have a positive effect. These interventions might range from providing additional information about why a flight is delayed, or suggestion for alternative routes, or even a discount on future travel purchases.[78]

The Dorchester Collection hotel group offers a great example of how marketers can use ML to identify guest preferences and personalize experiences, as well. At the company's properties in Beverly Hills, Rome, and Paris, rooms start at $780 a night and go up to $16,000 for the Belle Etoile ("beautiful star") suite.[79] High-end hotels like this spend fortunes hiring celebrity chefs for dinner time dining. But the hotel wondered if there was an untapped opportunity. So, the hotel's Director of Guest Experience and Innovation used Metis—machine learning software—to analyze online customer reviews on TripAdvisor and Booking.com. The findings? Dorchester Collection guests also care a lot about breakfast.[80] In other words: Machine learning has made it possible for the brand to pinpoint what customers really care about and adjust not only their marketing messaging, but their overall guest experience.

The software also found connections between words the guests mentioned like "relaxation," "unwinding," and "pampered" alongside descriptions of patios, terraces, and fireplaces. But, Dorchester's websites didn't emphasize a room's outdoor features. In response, the brand is placing Google keyword bids on "fireplaces" and "terrace" so that the hotels show up higher in search results for what guests actually care about when picking a place to stay.[81] This type of deep data interpretation through machine learning ensures that the messaging stays relevant to what your customers want, greatly increasing a marketer's success in retaining customers. Improving customer experience, listening to customers to anticipate their needs, providing offers that encourage customers to keep coming back for more—

All of these things have one thing in common: to accomplish this, companies of course need data, and lots of it. Thankfully, consumers generate a lot of it—from website cookies as they research trips, to site browsing history, surveys, and other sources. But there's a catch.

TO UNLOCK CUSTOMER BENEFITS WITH ML, CONSENT IS KEY

We live in a post GDPR world. For all of ML's benefits, marketers cannot ignore the importance of consent when collecting data to build algorithms—even in cases where data is public. Hyp3r, a geolocation company and former instagram partner, shared users' instagram data with travel brands so they could see how and where guests spend their time, and in turn, personalize marketing offers. While Hyp3r provided value to travelers, it was doing so by using personal Instagram account data like the posts, profile information, and locations they visited.[82] This information was public, but many people found this to be a breach of trust. Instagram ended its partnership with Hyp3r stating a violation of its terms of service and, of course, public user backlash.

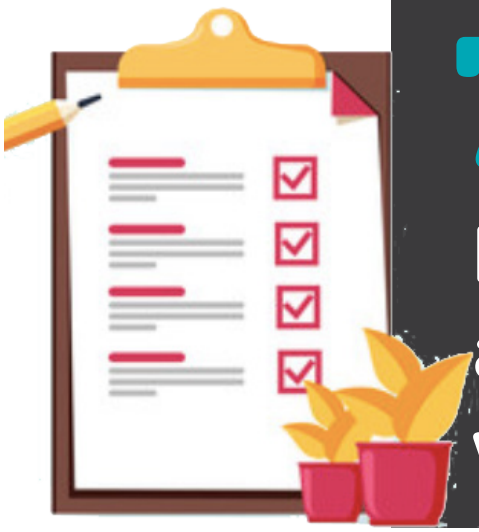
The Hyp3r horror story shows the need for companies to keep privacy in mind. Sure, the data was public and Instagram's users agreed to that. And Hyp3r is well-known to Instagram and its parent company, Facebook. That said, consumers neither expect nor like to have their data collected and analyzed into a personal profile by a company they've never heard of. There's no quicker way to lose a customer than to make them feel like you've violating their trust (regardless of any privacy agreements they hastily signed). Considering the Hyp3r example, prioritize building effective ML applications as well as implementing technology that allows your company to organize audience data and manage consent effectively.

Machine learning requires lots of data. This data, particularly reliable data, is not always easy to come by, nor is it easy to always gain consent for. That is why it is imperative to make sure you have a plan as a part of your ML adoption strategy. Give your customers a reason to share their data with you, and be sure to have a system in place that can easily parse and (if necessary) delete customer data if they so desire. After all, reclaiming a customer's data is much easier than reclaiming a customer's trust.

Keeping a customer coming back to your business is no easy feat, but it is incredibly necessary. Boiled down, every company is in the business of keeping their customers happy, and thanks to machine learning advances, the guesswork of figuring out what customers want, and when to reach out to them is easier than ever. Customer loyalty is the marking of a healthy company, and leads to both better data for your machine learning systems, and opportunities to finding and engaging other customers.

CONCLUSION

At the end of the day (and the guide), data represents information on customer needs, wants, and behavior. ML has become the key to unlocking that insight at scale. It's why companies of all sizes use predictive analytics, natural language processing, and computer vision to more readily connect with their customers—namely, through forecasting, enhanced marketing, and improved customer service. And while there can be barriers to entry, more executives are seeing the value of ML. Of the 203 executives surveyed by the Economist Intelligence Unit, 75 percent said AI or ML would be "actively implemented" in their companies within three years.[83]



75% of execs say AI or ML will be actively implemented at their companies within 3 years.

But what are those barriers, exactly? On the surface, larger companies are at an advantage because they have mountains of data. But often, the larger the company, the greater the number of teams, and the greater the number of chances for data to become siloed. So, for bigger companies, the trick is not getting access to data. It's finding a solution to organize it and ensure its reliability. Once that's in place, the challenge becomes identifying a partner with the specialized expertise necessary to build an ML model capable of solving challenges from predicting demand to streamlining customer service requests.

Small to medium companies, on the other hand, often have greater data transparency, but less data to work with as a whole. So, the challenges that these marketers have when adopting AI are finding ways of collecting enough data to use as well as identifying a partner who understands realistic ways for them to activate what they collect to train ML models.

Lineate has helped companies of all sizes organize their data effectively as well as build ML algorithms to make it easier to acquire, engage, and retain customers. For example, we helped 33Across, an online advertising company, make it easier to capture consumer attention through ML-optimized display ads. Specifically, we tested various scenarios against that data to maximize the options for those most likely to bid, spend and win ad auctions. The result? A whopping 30 percent decrease in operational costs.

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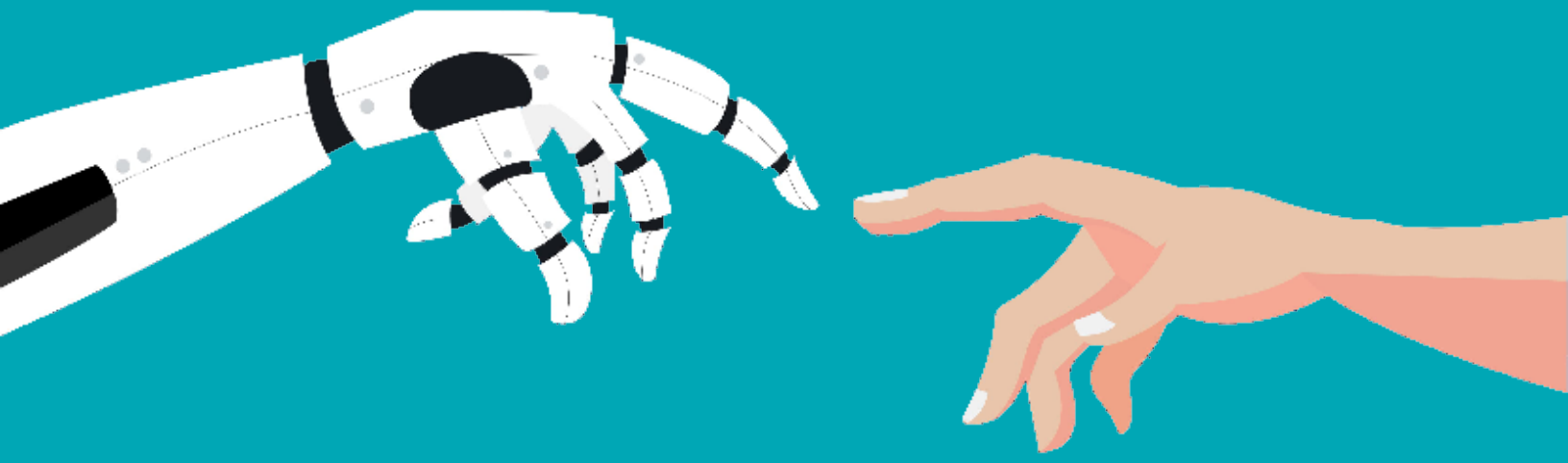

Another company Lineate has helped is Moasis, which uses geolocation data to better target consumers with advertising. For this company, we were able to use machine learning to identify patterns within microsegments—microsections within a ZIP codes—to optimize promotional offers. This hyper specificity ensured Moasis no longer had to make rough guesses based on demographic similarities between neighborhoods during campaigns. We helped Moasis attain targeting information down almost to individual street addresses.

So whether your company is just starting out or is a well-seasoned brand, it's clear that incorporating machine learning can make or break marketing efforts. Consumer expectations dictate brand behavior. And brands must listen to and adapt to this behavior or risk getting left in the dust. After all, 82 percent of consumers report they are willing to share relevant information about themselves in exchange for connections between their digital and in-person experiences, while 92 percent are more likely to trust a company with their information if they have the ability to control it.[84] So, what are you waiting for?

Whether you need to improve your customer experiences using NLP chat bots, boost your marketing efforts through predictive analytics, or streamline supply chain optimization, Lineate can provide custom solutions that grow with your brand and transform your business. **To understand more about how machine learning could work for your team, visit us at www.lineate.com.**

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