A Guide to Predictive Analytics

Using predictive marketing strategies to improve the customer experience

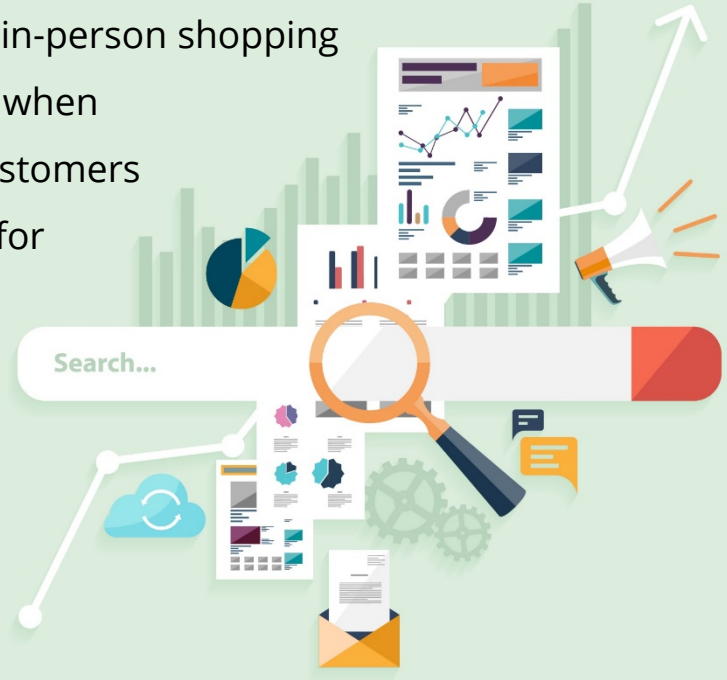
Contents

Introduction

Whether buying food, clothing or services, most of us have shopped at a business more than once, and interacted with the same employees frequently enough to develop a relationship with its staff. Maybe you order the same thing at the deli counter or get the same drink at a bar enough for them to serve “the usual”. Perhaps the clerk at your favorite boutique will draw your attention to a new item that they think you’ll like. These are businesses not just giving the personal touch, but predicting what you might want next in order to serve you better.

Of course, if you wish to deliver this to customers at scale, there simply aren’t enough bartenders or clerks for these personal interactions. Instead, we direct our inquiries at search bars or hunt web page categories. By its very nature, online shopping removes the human element we commonly associate with a personal customer experience. But that doesn’t mean it can’t.

Through proper data management and relevant technologies, marketers can develop a system of predictive analytics to emulate the intuition of an in-person shopping experience. That way, even when thousands or millions of customers are browsing your website for purchases, they’ll feel like regulars all the time.



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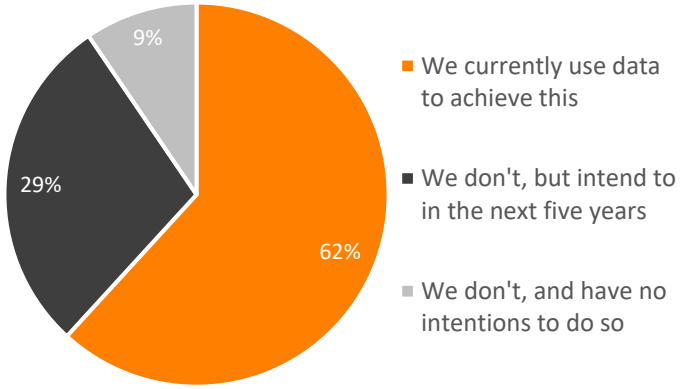
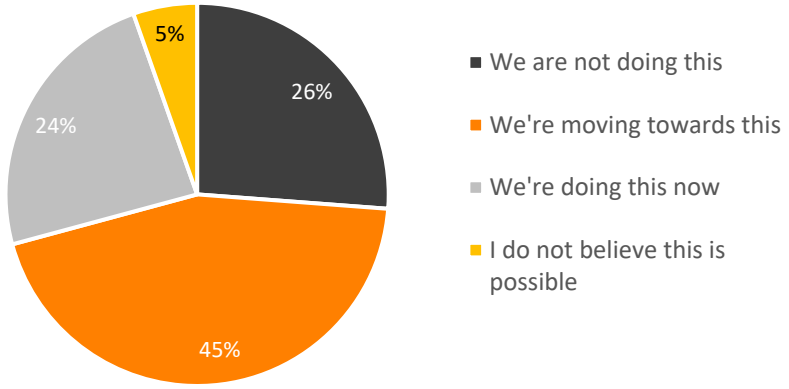
How are marketers approaching predictive?

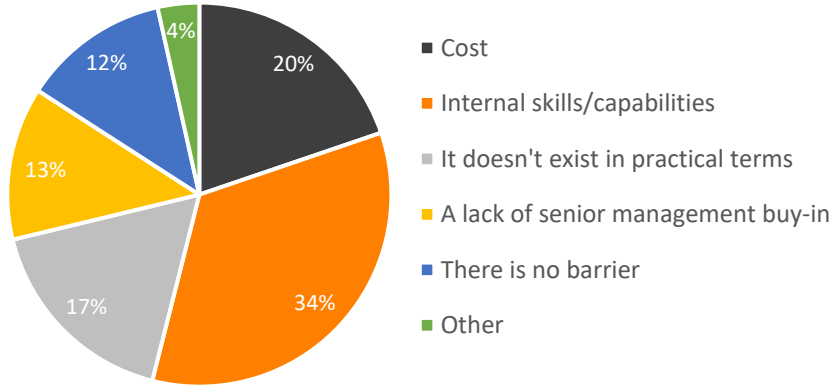
How are you using data to achieve to predictive analytics?[1]



How close are you to predicting customer behaviors before they happen?[2]



What is the greatest barrier to predictive analytics?[2]



Which areas do marketers expect to embrace in the next five years?[1]

35% Real-time website personalization

34% Using big data to predict trends and prepare demand

30% Artificial Intelligence

SOURCES

[1] *Data Dilemma*, BlueVenn, 2017

[2] *The Mythical Beasts of Marketing*, BlueVenn, 2016

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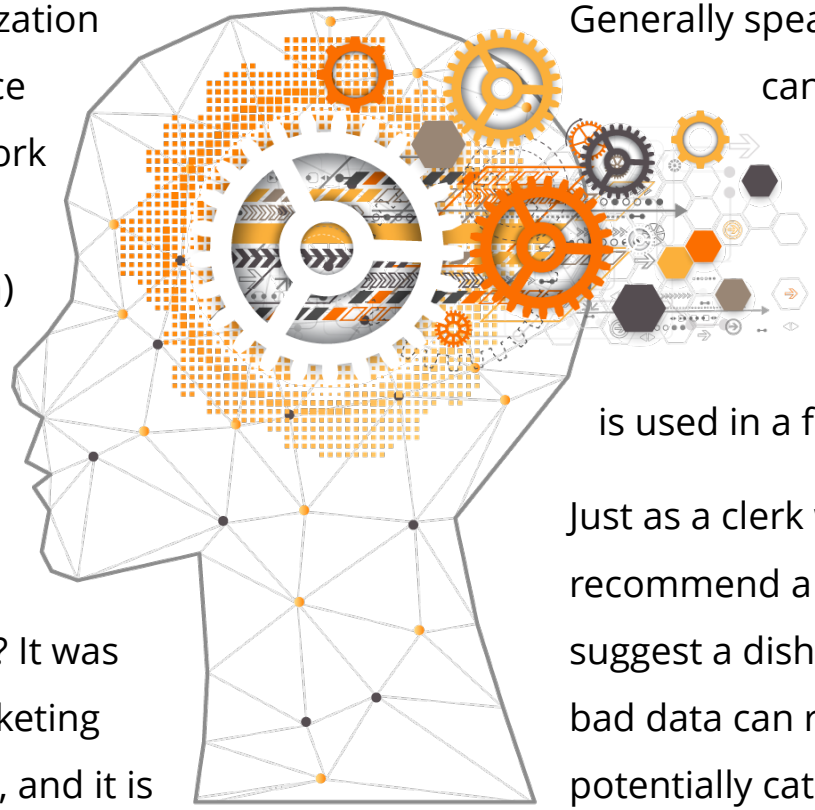
The basis of effective predictive analytics: good data

At its heart, predictive analytics and the personalization that it can enable are a type of Artificial Intelligence (AI). As such, in order for predictive analytics to work as intended, they need to be taught and programmed. Good instruction (that is, good data) is the basis of all useful intelligence, and predictive analytics are no different.



Anyone who works in data-based marketing knows that data quality sits at the foundation of the field. That old adage 'garbage in, garbage out'? It was applicable when putting together your direct marketing list to ensure campaigns reached the right people, and it is arguably even more important when programming AI.

Generally speaking, any AI system you choose to make can only be as smart as the information you provide it with. Even if this data is not continually governed and maintained, then it still needs some form of administration to ensure it is used in a fair, responsible and accurate way.

Just as a clerk without a sense of your style might recommend a garment you dislike, or a waiter might suggest a dish you're allergic to, predictions based on bad data can range from ineffective to clumsy to potentially catastrophic for your brand-customer relationship.

Seven stages for data preparation

Before you can execute reliable predictive analytics on your customer data, it is highly recommend the following data preparation stages are addressed:

1. **Data Cleansing.** This ensures improved match rates when matching customers to aggregate their data. This usually involves running data through zip code address files and possibly matching to 3rd party data.

2. **Standardization.** This ensure that data of the same type from multiple sources is presented in a consistent format (names, addresses, job roles, etc.).

3. **Data Validation and Verification.** This ensures that data is in the correct format, and data is valid and has not been incorrectly input.

4. **Customer Matching or Identity Resolution.** This ensures that each customer only exists on your database once. This is particularly relevant where you are bringing together multiple source systems from online and offline services.

5. **Aggregation.** This ensures that data is correctly rolled up, with business rules in place to determine how to deal with duplicates. You can usually use the most recent value or the most reliable data source.

6. **Enhancement.** This identifies missing data, gaps in source data or missing variables that may need to be sourced from 3rd parties.

7. **Variable definitions.** This ensures that your variables meet the needs for analysis, e.g. if you have date of birth on your database, that is a continuous variable, consider more suitable discreet variables like, age, year of birth, month of birth, and age band.

WATCH OUT!

Be aware of these common pitfalls

- **Operational Vs. marketing addresses** – Just because a customer pays a bill doesn't mean their address is correct!
- **Internal transactions** – Hangovers from testing and training, or internal processes that mean transactions are recorded against dummy records.
- **Returned goods** – These are sometimes managed through different systems or have positive values with a return flag.
- **System switchovers** – Moving data from one system to a new system doesn't always go smoothly.
- **Skewed outcomes** – Do you have, leads, opportunities or prospects in your customer data?
- **Lapsed customers** – Consider suppressing goneaways and suppressing against the bereavement registers to ensure that data is up-to-date, accurate and compliant.

The benefits of predictive analytics

Predictive analytics are the closest thing marketers have to a crystal ball. In addition to making tailored recommendations that reinforce customer loyalty and increase the probability of purchasing, predictive analytics provide marketers with the opportunity to tweak individual details of a campaign, at large scale.

This can yield incredible benefits, particularly when linked with marketing automation platforms. Such benefits include:

LOWER ACQUISITION COSTS

Identify prospects with the highest likelihood of converting. Marketers can then direct their efforts and tailor campaigns to specifically target and attract them, minimizing wasted marketing budgets.

IDENTIFY LOYAL CUSTOMERS

Propensity-modeling looks at past transactional behavior alongside customer attributes, transactional and operational history, to predict the likelihood of a customer to continue purchasing your products and services.

DETERMINE CROSS-SELL AND UP-SELL OPPORTUNITIES

Continuing to target customers with products and services best suited to their needs can keep them coming back, and predictive analytics looks deep into past transactional patterns to reveal what to target them with in the future.

INCREASED SUCCESS OF OUTBOUND EFFORTS

A ‘spray and pray’ approach to campaigns will see low engagement and yield poor results. Predictive marketing assesses the profiles of customers to determine who is most likely to convert, improving the efficiency of future campaigns.

TO PREDICT CHURN

After going to the expense of acquiring customers, nobody likes to lose them. A data-driven predictive churn model will identify the customers you are most at risk of losing (as you have not been meeting their needs) and can give insight into the actions you can take to retain them.

TO PREDICT CUSTOMER LIFETIME VALUE

This projects what a new customer is likely to spend with your organization over the course of their relationship with you. This can help marketing establish how they should market to each customer with future campaigns.

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PREDICTIVE LEAD SCORING

This methodology applies a perceived value of a prospect to the organization. Previously, this was based on potentially flawed assumptions (for example, high scores would be applied to somebody that visits a 'pricing' page or has downloaded multiple items of your marketing content). More recently, predictive lead scoring uses analytics to mine the behaviors of converting customers to build a profile that predicts how likely a new prospect will also convert – or not.

PIPELINE FORECASTING

Using a combination of external data and internal transactional data, pipeline forecasting looks to determine which of your deals are most likely to close and how much revenue will be booked, along with anticipating any risks that could jeopardize deals from closing.

The uses of predictive analytics

Predictive analytics offers many benefits because it has a wide range of practical applications.

And, as the technology becomes increasingly sophisticated, its uses will continue to grow. A small selection of potential examples include:

PRODUCT RECOMMENDATIONS

By tracking browsing patterns, purchase history and other forms of engagement, predictive analytics can make recommendations about relevant products based on their behavior. Not only do these recommendations have a higher chance of converting, serving shoppers with a tailored experience is great for engagement and turning first time buyers into repeat customers.

PREDICTIVE SEARCH

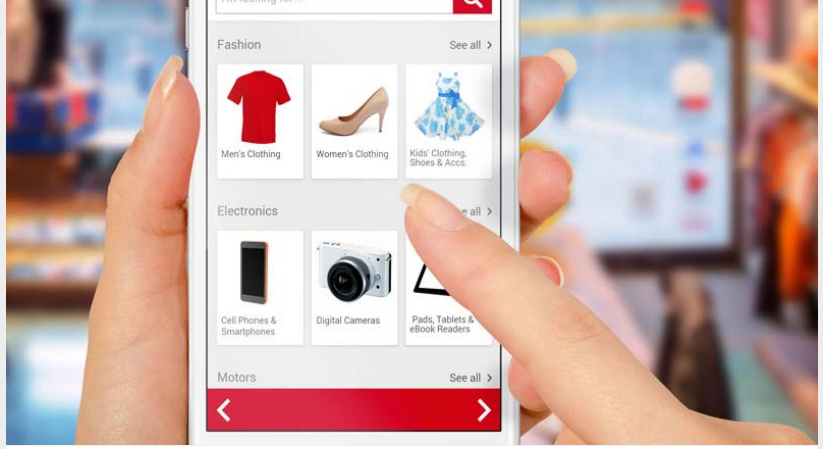
A site search is one of the primary ways a customer interacts with a site, particularly retail customers. Using continuous analysis of customer history, behavior and preferences, a predictive search function anticipates what a shopper is looking for by typing just a few letters.

Making purchases more effortless and user-friendly can help drive sales.

PREDICTIVELY TARGETED CAMPAIGNS

Predictive algorithms collate data from other sources (such as demographics, market size, response rates and geography), and past campaigns to assess the potential success of your next campaign.

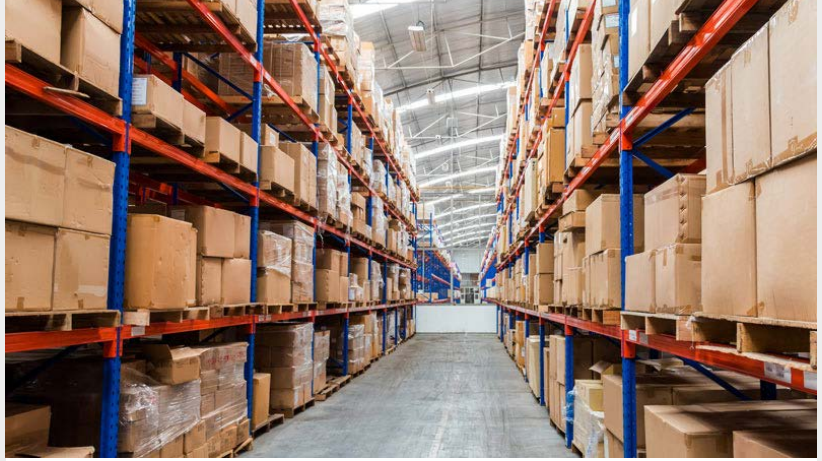
By determining what promotions are likely to work for a particular shopper or segment, marketers can pinpoint the most effective message for an individual.



OPTIMIZE PRICING

Predictive pricing analytics look at historical product pricing, customer interest, competitor pricing, inventory and margin targets to set optimal prices in real-time.

In Amazon's marketplace, for example, sellers who use algorithmic pricing benefit from better visibility, sales and customer feedback – reported to deliver an additional 40% profit gain compared to partially managed catalogs.



PREDICTIVE INVENTORY MANAGEMENT

Predictive analytics allows for smarter inventory management, taking into account existing promotions, markdowns and allocation between multiple stores to deliver accurate forecasts about demand.

This allows retailers to allocate the right products to the right place and allocate funds to the most desirable products with the greatest potential for profit.

FRAUD DETECTION

Insurance companies, for example, are beginning to use predictive models that look at quote histories, to see if customers are manipulating their data for a more favorably-priced policy.

Similarly, predictive analytics can be used by financial companies to detect data anomalies that could indicate fraudulent activities.

CHATBOTS

From fashion houses to fast food restaurants, a wide range of businesses use chatbots to field customer questions and requests with automated, yet conversational responses.

Predictive models are used in the development of machine learning, to produce a set of recommended actions when faced by particular queries.

Creating a predictive model in BlueVenn

The BlueVenn Customer Data Platform uses a very popular open-source programming language, called R, to deliver its powerful models through user-friendly wizards. For the purposes of marketing, these models can be based on:

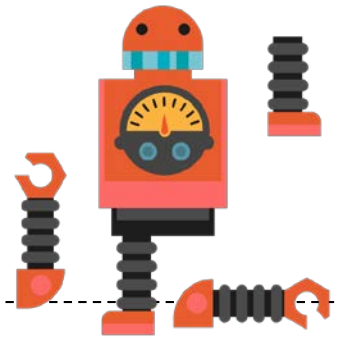
- **Linear regression** – Predict the likelihood of a true or false outcome with a confidence level between zero and one
- **Logistic regression** – Define a target audience and select fields or variables to predict a target goal. For example, which customers are most likely to purchase a particular product or service
- **CHAID (Chi-squared Automatic Interaction Detection)** – Create segments of customers based on their yield and their responsiveness
- **Machine learning** – Solve problems by finding patterns (such as within buying behavior) which lead, most often, to a desired result (such as spending over a certain amount after clicking an advert)

A Logistic Regression model with an 80-20 split (meaning 80% of the data is used to train the model, and 20% to test the model, cut the data and compare variables to predict a goal), could help marketers find those customers most likely to buy a certain product.

SET UP THE MODEL

1. Define the target audience (your customers who have already bought, say, a smartwatch).

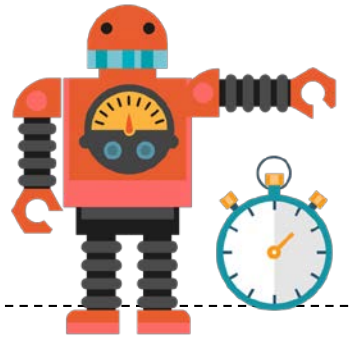
2. Select the fields or variables to predict the target goal (for example, the key characteristics of a smartphone customer).



TRAIN THE MODEL

The training process runs the data and parameters through the selected model, applying the 80-20 cutting model.

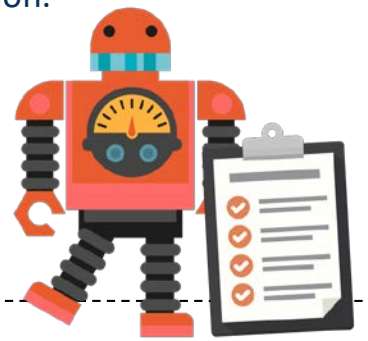
This process repeats several times and derives a score, which is accompanied by a robustness to indicate how robust the model is.



REVIEW THE MODEL

The scoring process produces a value with increments between 0 and 1. Here, 0 means unlikely and up to 1 is highly likely.

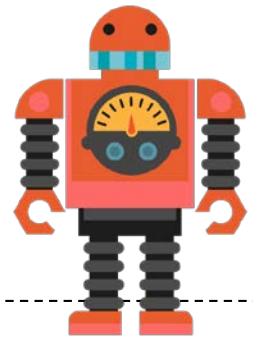
The review will also show other values that judge the validity of the model, how great the relationship is between your variables, model accuracy and a confidence value of a correct prediction.



USE THE MODEL

This model can be easily inserted directly into your audience selections and campaigns workflow using BlueVenn.

For example, to send a communication to customers with a propensity to purchase a smartwatch over 80%. Just remember to test first!



Predictive analytics to improve customer journeys

Every customer is different, so the way a customer interacts with your brand will be different. Applying a rigid vision of the customer journey to a broad range of customers is doomed to fail, because you cannot dictate customer behavior. Rather, your marketing must be dictated by their unique behavior.

Predictive analytics are immensely useful in this case because, as an approach, they are specifically designed to imagine future behaviors based on past ones. As opposed to guessing how a customer will react based on an irrelevant broadly applied model, predictive analytics allow you to create customer behavior models (and campaigns based off them) that are predicated on how that customer has reacted previously, and can constantly evolve in service of how that customer's behaviors are changing.

Not only does this provide marketers with tools better suited to the realities of the digital age, it provides the tools to build campaigns that your customers will respond to, the sort of campaigns dictated by the things they actually want.

Customers may not know predictive analytics by name, but the personalization and real-time strategies they facilitate are exactly the sort of strategies that connect with the things customers have been hoping for in the marketing they receive.

Predictive analytics for increased customer satisfaction

As countless surveys and reports have found, customers want personalization and personalization drives customer engagement and loyalty.

Essentially, customers want brands to learn their needs, know their needs, and put effort into anticipating those needs, which is the very core of predictive analytics. Predictive analytics not only help you give your customer what they want, but they provide you with the mechanisms to predict those wants, so your personalization game is not always one of catch-up.

Returning once more to the metaphor of the shopkeeper, predictive analytics is all about the personal connection between customer and brand that allows you to feel like a regular when you walk into your favorite store.

63%

of customers find personalized product recommendations useful

1in4

Shoppers will actively seek out personalized recommendations

62%

of customers buy more (and more often) when faced with personalized retail experiences

103% uplift

Personalized email offers compared to a generic email

Predictive analytics is about demonstrating recognition of the customer's value and illustrating it through tailored suggestions: showing that you're
invested in the future of your customer's satisfaction and their relationship with your brand.

Conclusion

Increased customer engagement is a valuable benefit of predictive analytics. But it's not the only one. In fact, focusing on it too much will inevitably limit the scope of your ability to apply predictive analytics, and might ultimately lead to the concerns about resources and data.

Specifically, focusing on one word might be the biggest tripping point. That word? "Customer."

Because customers are only one part of your audience, and you can't expect every single member of your audience to become a customer until you demonstrate your commitment to them, until you dynamically engage with them and bring them into the fold.

Predictive analytics allows you to engage with the entirety of your audience, not just the members of it who are buying. It helps with lead generation, and the growing of your customer base. It helps you understand how someone might act as a customer before they are one, based on how they've behaved as just a browser or observer.

Ultimately, predictive analytics challenges you to broaden your understanding of personalization, whom you direct it at, and make better use of this understanding for better customer experiences.

Want to talk about Predictive Analytics & Personalization?

BlueVenn

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