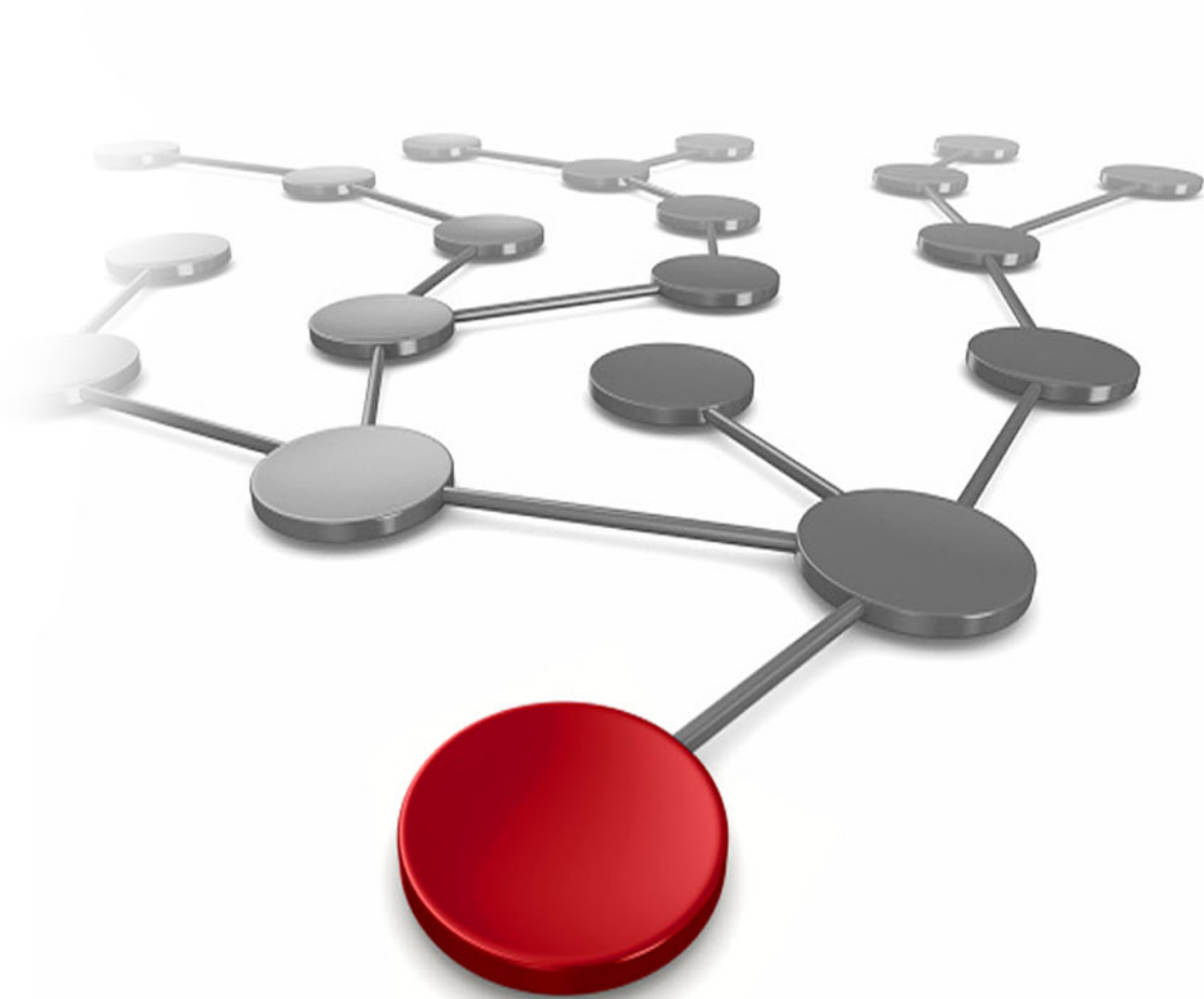


The Power of Cognitive Marketing

IBM Watson Marketing Insights

Theresa Morelli

Colin Linsky





Executive overview

How do you keep the pulse of your customers today? Customers are leaving more clues than ever on what they want and need. However, the ability to get a singular view, observe trends and changes in behavior, and then respond proactively is not as simple as it seems. It can often feel like shooting at a moving target.

The key is in the ability to quickly uncover and then visualize predictive drivers and insights about customers. For many organizations, this is not an easy task. Analyzing customer data and unlocking insights often requires the help of highly skilled data scientists, delaying the ability to take action. Other organizations completely lack analytics expertise altogether. Still others might succeed at analyzing data but struggle with integrating those insights into systems that influence the customer experience.

Traditional demographic-based segmentation is no longer enough. To truly understand customers and interact with them more effectively, organizations must now observe what customers do, not just who they are. They can then act on that information quickly. Behavioral information tells a much richer story and helps us understand customers' individual journeys, thus revealing preferences and tacit needs. In this way, organizations can more deeply understand how to reach the hearts of each customer in more meaningful and effective ways.

To focus on the correct customers, you must first identify them. What are the characteristics of your most valuable customers? Who is at risk of leaving for a competitor? What types of events or interaction habits might predict the likelihood of a customer to accept one offer over another? These insights are buried in the ever-growing and evolving pool of customer data. The key is to reduce the noise, uncover the relevant insights, and take swift action.

IBM® Watson Marketing Insights provides marketing analysts with a dynamic view of customer behavior and the power of predictive insights without requiring analytics skills. Presented in an interactive visual format, marketers receive a daily feed of insights and prioritized recommendations that allow them to quickly and easily identify the most impactful areas for targeted marketing outreach.

IBM Watson® Marketing Insights is a cloud-based cognitive analytics solution that enables marketers to optimally engage with their customers and act with speed and self-sufficiency. It allows marketers to accomplish these objectives:

- ▶ Gain analytical self-sufficiency without having to rely on data scientists to build models or translate outputs
- ▶ Reveal, visualize, and interact with critical insights that can transform the marketing process and dramatically improve customer outcomes
- ▶ Observe a dynamic and comprehensive view of your customers through constantly updated customer profiles that comprise omnichannel behavioral data
- ▶ Leverage the power of predictive analytics to easily identify target audiences that require attention and push the target lists straight to a marketing platform

This IBM Redguide™ publication introduces the IBM Watson Marketing Insights solution and highlights the business value of the solution. It provides a high-level architecture and identifies key components of the architecture.

Delivering on the promise of customer centricity

As the emphasis on the total, integrated customer relationship continues to intensify, Chief Marketing Officers (CMOs) now widely accept the role of analytics in creating personalized, relevant customer experiences. Developing deep customer centricity has become the top priority of CMOs looking to create competitive advantage and a table stake for marketers.

At the heart of personalizing customer experiences are the rich insights that are revealed by Customer Analytics solutions. Traditional on-premises solutions provide sophisticated analytics functions, but often require a significant investment in infrastructure, skills, and time. This limitation produces a number of barriers to marketers:

- ▶ Reliance on data scientists

Marketers historically have had to rely on highly skilled data scientists to unlock the rich insights buried in customer data and translate analytic outputs. The manual collaboration can be time-intensive and a delay might cause the insights to become irrelevant or ineffective, if they are able to be deployed at all. For some organizations, the availability of these data science skills is a luxury altogether. According to McKinsey, by 2018, there will be 140,000 - 190,000 data scientist job postings that go unfilled.¹

- ▶ Difficult to visualize and identify critical areas for action

The wealth of data and insights available can be overwhelming, and key insights can end up lost in the noise. In order to take swift, prioritized action, marketers need to know which insights are most important. This process requires an investment in time and specialized skills when using business-agnostic analytic platforms designed for building custom solutions.

- ▶ Segmentation is high-level, uni-dimensional, and ineffective

Traditional segmentation tends to lean heavily on relatively static demographic attributes, making it difficult to differentiate and treat members of a segment uniquely, or to identify a timely and effective offer. Behavioral data, conversely, tells a much richer story about individual preferences, interaction habits, channel usage, and other factors about each customer's journey. Without the ability to collect and analyze behavioral data, marketers cannot generate meaningful segments, and customers receive undifferentiated services and offers.

¹ *Why data scientists and marketing technologists are the hottest jobs of 2015*, [Venture Beat](#)

- ▶ Inability to act on insights quickly and across multiple channels

Analytics are only as good as what you do with them. Without a mechanism to quickly and easily apply insights to the marketing campaign lifecycle and deploy insights to multiple customer touch points, the ability to extend targeted, optimized offers becomes inconsistent. This limitation results in lost opportunities to improve the customer experience and erodes customer satisfaction.

To deliver on the promise of customer centricity, marketers need a simple, agile way to harness the power of predictive analytics and act swiftly on insights. They must seek to accomplish these objectives:

- ▶ Inform the campaign management lifecycle with rich customer insights that improve audience targeting, campaign optimization, and offer selection
- ▶ Focus on specific insights related to customer-centric metrics, such as recognizing which customers have the highest lifetime value potential or predicting drivers of attrition
- ▶ Understand the relationship of various insights across the customer lifecycle
- ▶ Create a comprehensive view of customers by collecting structured and unstructured behavioral data from various sources and update customer profiles regularly
- ▶ Reveal what makes customers unique and break free of traditional approaches for segmentation
- ▶ Quickly identify target audiences for various offers and run campaigns before the opportunity to influence the interaction expires
- ▶ Orchestrate campaign activities across all customer channels to create a seamless customer experience every time, for every customer, at every touch point

To deliver on the promise of customer centricity, marketers must focus their use of analytics to address key customer objectives and convert data into insights that improve customer interactions. Watson Marketing Insights is designed to bridge the gap between marketer and data scientist and deliver prioritized insights that guide marketers toward effective action.

Analytics designed with the marketer in mind

To be competitive and drive superior customer experiences, marketers must stay one step ahead of their customers, anticipate customer behavior, and be proactive in extending targeted offers. A critical element of targeted offers is understanding and identifying the most impactful and relevant audience, an increasingly difficult task given the wealth of data available. Critical insights about customers that help construct targeted audiences are often buried in this data and require specialized data science skills to uncover.

Watson Marketing Insights helps marketers redirect their time from performing analysis to taking targeted actions that drive improved outcomes. It delivers insights that can be directly used by marketers and other business users, without translation by a data scientist. This feature provides these benefits for the business:

- ▶ Analytic self-sufficiency

Pre-built, self-learning analytic models designed for marquee marketing objectives automatically refresh and get smarter over time. After configuration of Watson Marketing Insights is complete, very little intervention by IT is necessary. This feature solves many tactical pains around using an analytics solution. It allows marketers to take immediate action and frees up data scientists/IT to focus on more strategic issues that truly call for deep and specialized data science skills.

- ▶ **Faster, directly actionable insights**

Watson Marketing Insights recommends high-priority insights each day so marketers can quickly identify real opportunities and the most important actions to take. In addition, the highly visual, interactive user interface allows marketers to experience insights in a contextual way.

- ▶ **Accelerated time to value**

Watson Marketing Insights includes predefined application programming interfaces (APIs) to get data into an analytics-ready state, minimizing the time necessary for data preparation. Its cloud-based environment with prebuilt integration makes it simple to get up and running with no capital investment and connect to your existing systems.

An analytically supercharged marketing platform

Effective marketing interactions require more than analytics alone. The marketer must also be able to tailor offers and run the interaction at the right moment. In today's multi-channel, "always-on" consumer landscape, all of the pieces of the marketing puzzle must be working in concert.

IBM Watson Marketing features three key pillars that together comprise a comprehensive marketing portfolio (see Figure 1 on page 5):

- ▶ **Campaign Automation**

The Campaign Automation pillar includes cloud-based and on-premises platforms that power the execution of cross-channel interactions.

- ▶ **Marketing Insights**

Marketing Insights features a broad range of analytic insight solutions that deliver deep predictive and cognitive insights, targeted recommendations, and rich audience identification.

- ▶ **Real-time Personalization**

Real-time personalization arms the marketer with engines that select and optimize offers for customers in real time.

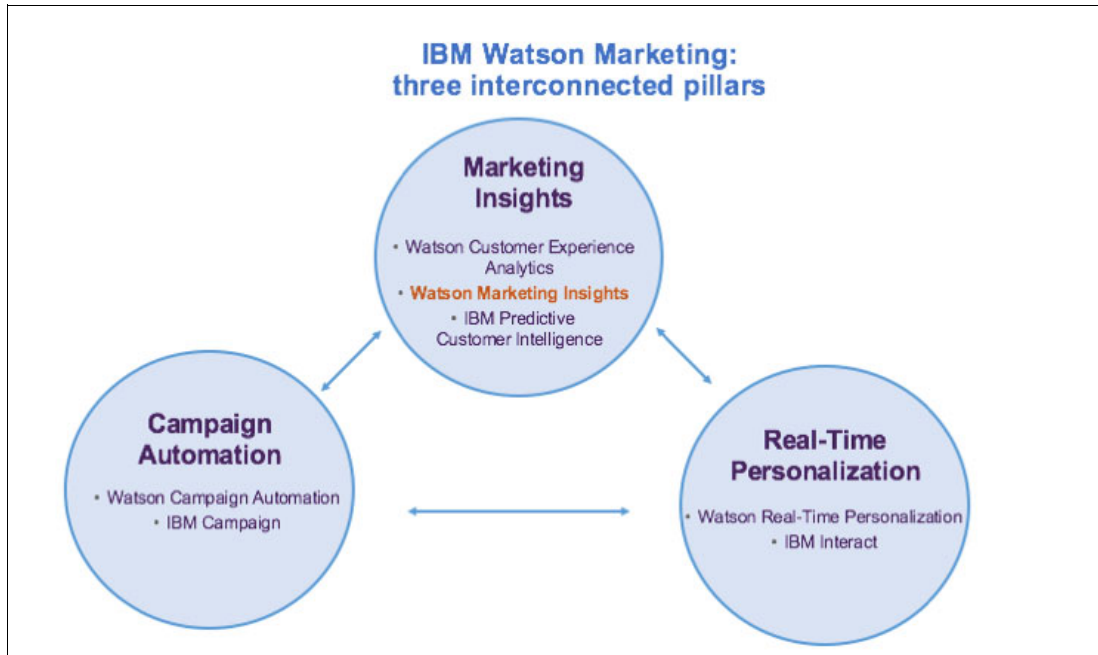


Figure 1 IBM Watson Marketing: three interconnected pillars

The power of analytics insights lies in the ability to dynamically adapt to new data. The self-learning models in Watson Marketing Insights ingest campaign response data and continuously refine. This process allows for ever-improved understanding of your customers and sharpened ability to create targeted audiences based on similar behaviors rather than static segments.

Marketing in the “man plus machine” cognitive era

The cognitive era is about embedding analytics in day-to-day processes for better decision making. It is about using technology to become not only more efficient, but more effective. It is about enhancing, amplifying, and scaling human expertise.

Analytics in business has historically required a heavy investment in data science and programming to extract valuable insights out of data. Without the correct expertise, these insights would remain buried and their value unreachable to the business user.

The new era of analytics combines the power of man-led interrogation and machine-led cognitive recommendations. Watson Marketing Insights presents marketers with prioritized insights and recommendations that address key business objectives. It also allows marketers examine trends, predictors, and details behind these insights. This combination of cognitive recommendations pushed to the marketer and easy-to-use interactive graphs for self-exploration allows the marketer to act swiftly, with deep cognition, and in a way that is tailored to their specific business objectives.

Figure 2 shows an example of Top Priority Insights pushed to the marketer on the Watson Marketing Insights home page.

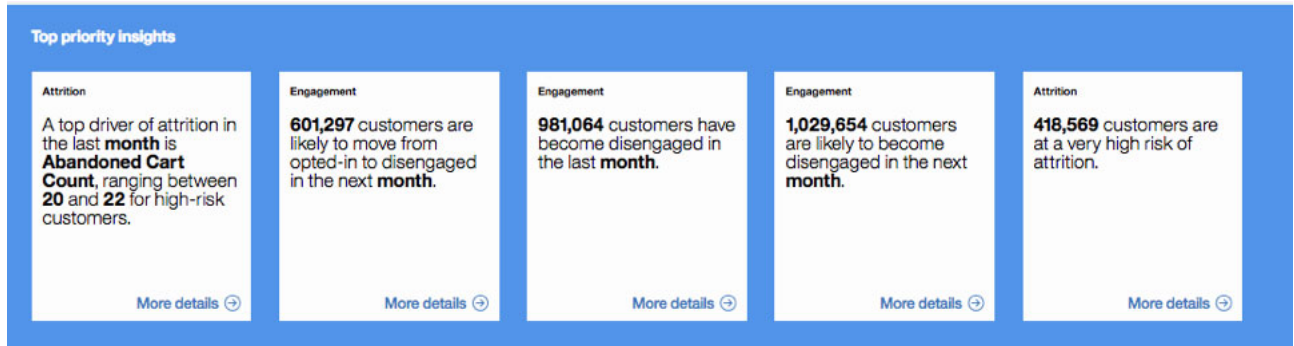


Figure 2 Example top priority insights

The ranking of the Top Insights is based on the severity of impact to the business. It considers a number of factors such as revenue, volume of customers, and key predicted behaviors for a selected audience. In this way, the marketer's attention is drawn to the highest-priority areas that call for the most immediate action.

Watson Marketing Insights recommends specific target audiences of customers who demonstrate similar behavioral attributes, such as key indicators of attrition. Algorithms first uncover the most significant attrition drivers, then find correlations between these drivers, and finally recommend groups of customers who are exhibiting these behaviors and therefore are at an elevated risk of attrition.

These insights are presented to the marketer in an interactive graphical format that allows for easy identification of relative audience size and attrition risk (see Figure 3).



Figure 3 Recommended audiences

Marketers can then explore specific insights, trends, and predictors in more detail (see Figure 4).

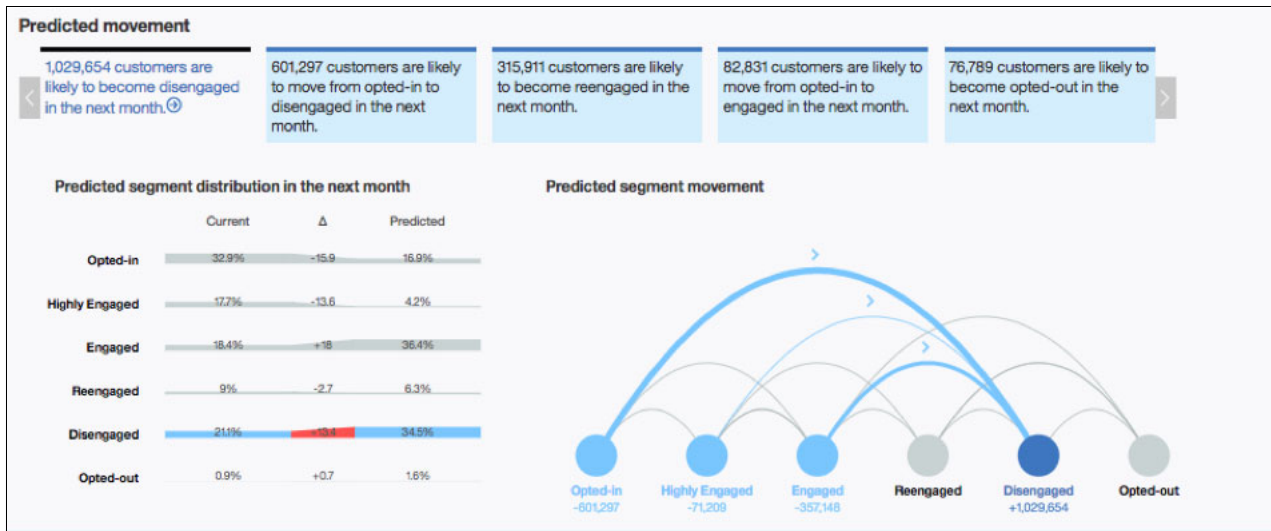


Figure 4 Predicted movement

By combing the power of machine-led cognitive recommendations and man-led investigation, marketers can harness the true power of customer data, create impactful audiences that are relevant to the business, and take swift action, all without relying on a data scientist.

A solution built for purpose

Fifty-five percent of marketers in a 2015 study believe that their analytics tools are too hard to use and do not provide information in an easy-to-understand format.² Most advanced analytics platforms are designed with the data scientist in mind. They are rich in functionality and analytic capabilities in an environment that fosters custom-built models. Developing analytics models takes time and skills that a typical marketer simply does not have.

Watson Marketing Insights features an assortment of prepackaged analytics and insights that help solve the most top-of-mind challenges for marketers, such as:

- ▶ Churn/retention prediction: Who is likely to leave my company, and why?
- ▶ Behavioral engagement segmentation: How brand engaged are my customers today and how engaged will they be in the future?
- ▶ Predictive Customer Lifetime Value analysis: Who are my most valuable customers, and who will be valuable in the future, if I can keep them happy?

With a range of analytic techniques, predictive models, and cognitive analytics, Watson Marketing Insights relieves the marketer from having to secure data scientist resources and wait for models to be built and tuned. A standard data model with a range of APIs helps speed and simplify data preparation and configuration, while still allowing for some unique tailoring to each individual organization. All of this is designed to drive toward the goal of simplicity, speed, and ease of use.

² *Big Data Analytics Pain Points*, Kaushik Pal, [KDnuggets](#)

The insights within Watson Marketing Insights support customer centricity by considering the entire customer lifecycle and accounting for the interconnectivity between customer-focused objectives.

Additional insights introduced into Watson Marketing Insights will closely align with these industry-standard customer imperatives. In some cases, insights focus on a single metric (lens), and in other cases, insights address multiple use cases, or “compound” lenses.

The following are examples of “single lens” insights:

- ▶ N customers are likely to become brand disengaged in the next 30 days.
- ▶ N customers are at a high (> 80%) risk of attrition.
- ▶ The top driver of attrition in the next 30 days is the number of service complaints. N customers have had more than three complaints and are at high risk of attrition.

The following are examples of “compound lens” insights:

- ▶ The average Customer Lifetime Value (CLTV) of your most engaged customers has dropped by more than 20% in the last 30 days.
- ▶ The total predicted revenue impact of the N customers who are at risk of leaving is \$ X .
- ▶ N customers are disengaged or will become disengaged in the next [time t] and are at high risk of attrition.

The ability to identify and examine target audiences based on single or compound lenses provides the marketer with superior ability to focus on specific customer metrics or to understand the broader business impact when various metrics are considered in tandem. In many cases, the compound insights provide smaller, more targeted audiences that behave similarly. This feature increases the likelihood that a specific type of campaign will be both efficient and effective.

Watson Marketing Insights also features an Audience Scorecard that provides a point-in-time measurement of overall customer health that is expressed through key metrics and a “Pulse” indicator (for example score). This output is designed to help the marketer clearly and simply understand whether health is improving or declining. The Scorecard is designed to allow the user to compare metrics for a selected audience side by side against the same metrics for All Customers. See the example in Figure 5 on page 9.

The “Pulse” indicator is a single score that represents aggregate customer health for the selected target audience, based on an algorithm that considers a weighted combination of attrition indicators, CLTV, and brand engagement.



Figure 5 Example Audience Scorecard

The various charts in the scorecard (shown in Figure 5) are explained as follows:

- ▶ Pulse Score (item 1)

Pulse score that is calculated for selected target audience. Figure 5 shows the current score for this list versus all customers, graphic representation of both scores on range line, trend line for this list's Pulse score over the past 90 days [duration configurable], and which components of the score are contributing to positive or negative moves.
- ▶ Customers (item 2)

Number of customers in this list, and percent of all customers, shown as numbers and graphically as a Sicilian pie chart.
- ▶ Metrics (item 3)

Metrics shows (top to bottom) the status bar (grey/red/yellow/green), metric name, and trend lines for past 90 days.
- ▶ Channel by average order (item 4)

Up to five channels, sorted by average order size in current duration.
- ▶ Purchasing behavior (item 5)

Purchasing data as provided by the customer.

- ▶ Channels by engagement (item 6)
 - Up to five channels, sorted by percent highly engaged + percent engaged.
- ▶ Status bars (item 7)
 - The status bar colors indicate these statuses:
 - Green: Better than All customers
 - Yellow: Within $\pm 5\%$ of All customers or on a downward trend
 - Red: Worse than All customers
 - Gray: Neutral metrics

Designed with the marketer in mind, the insights and Scorecard in Watson Marketing Insights provide a comprehensive view of customers across a number of dimensions and alerts the marketer to specific trends. With the ability to compare target audiences against all customers, the marketer can also zoom in on specific behaviors occurring within a select group and understand how that relates to the broader customer base.

Rich analytic techniques

At the heart of Watson Marketing Insights is an Analytics Engine that fuels the insights for understanding and predicting customer behaviors. Insights within Watson Marketing Insights are organized by “lenses” that address a marquee use case using various analytic techniques. These analytic techniques generally fall into one of two families or a combination of them:

- ▶ Attribute Assignment
- ▶ Predictive Scoring

When a new Watson Marketing Insights tenant is provisioned, default data fields and default Analytic Techniques are automatically set up. In all circumstances, the data field collection is added to create a bespoke Data Model for that tenant. The import process brings the actual Customer Profile attribute values, per Customer, into the Watson Marketing Insights Customer Profile History table.

Analytic techniques are hosted on and run through a single analytics service. Although the service is shared, each tenant's data and analytic output is secure from all other Watson Marketing Insights tenants. Even though the analytics service is shared, each tenant has its own configuration of the default analytic techniques. In some instances, multiple configurations of each analytic technique is possible.

Watson Marketing Insights analytic techniques operate on historic views of Customer Profiles. An analytic technique can be run against any date layer in the Customer Profile History table. Any scoring or output from the Analytic Technique can be assigned to that history view also. In this manner, Watson Marketing Insights stores a history of customer profile attributes and the scores and outputs from each analytic technique.

Watson Marketing Insights includes analytics techniques that address these goals:

- ▶ Engagement Segmentation
 - A series of rules are used to define membership of each of the Engagement Segments (Opted In, Engaged, Highly Engaged, Re-engaged, Disengaged, Opted Out).
 - Configuration of the Analytic Technique involves setting up a data-based rule definition per Engagement Segment. The rules relate to data fields set up in the Data Model (using the Profile API) and populated with the latest Customer Profile Attributes (using the Import

API). The rules are not fixed, and therefore allow a flexible approach to what defines Engagement for a particular industry or business.

► Engagement Segment Migration

Pre-defined groups created in the Engagement Segmentation Technique. The output is the next predicted Engagement Segment for each Customer Profile. You can see the output of this Analytic Technique in the Engagement lens charts of current and predicted Engagement Segment. Insights and Target Audiences are generated based on known migration patterns.

► Attrition

Attrition relates to the likelihood of a customer to leave a scheme, cease trading, become dormant, not use any services, or stop any interactions with a business or organization. The data import has a field, ATTRITION, that is populated to allow the Attrition Model to be developed that best predicts those that are, and those that are not, likely to Attrite. The advantage of a Predictive Model over one or more rules is that nuances and patterns in the Customer Profile can be picked up and quantified by using the Predictive Model.

The main output from running the Attrition Model is an Attrition score per Customer Profile. You can see summaries of the Attrition score (across All Customers and per Target Audience) at various places in the Watson Marketing Insights UI, including the home page, as well as having the scores available for selection rules when generating User Target Audiences. The Watson Marketing Insights Attrition lens drives insights for a couple of special cases of Attrition:

- Code Red where Attrition Likelihood is very high
- Spikers whose Attrition score has risen dramatically in the last couple of Attrition scoring sessions

Apart from a score of the likelihood to become dormant for every Customer Profile, the other main output from running the Attrition Model is a ranked listing of fields that are the most predictive of Attrition. Those fields that are found to be predictive of Attrition by the Model are called Drivers.

By default, the top five drivers are used to drive insights in Watson Marketing Insights. The driver-based insights are then used to generate Target Audiences.

Actionable insights and rich audience building

The ability to take swift action is critical when nurturing customer relationships. The right timing and the right offer can determine whether an interaction drives the wanted positive outcome. Anticipating and preempting customer behavior is also key. An attrition prediction, for example, might reveal a customer's likelihood to attrite months before they have even thought about defecting.

By staying one step ahead of customer behavior, a marketer can be able to not only save a customer, but delight them and further endear them to the brand.

Watson Marketing Insights makes it easy to take meaningful action. It features directly actionable insights that automatically prepare target audience lists based on specific predictors and insights:

- Who is at risk of leaving
- Which high value customers have become brand disengaged
- Who is likely to opt-out of marketing communications in the next month

The marketer can then click that target audience and publish it to the IBM Marketing Cloud or export it to the desktop for use in other marketing platforms. Marketers can also modify the actionable insight lists or create custom lists by selecting the wanted attributes and filtering criteria from the customer profile.

Four types of attributes are available:

- ▶ **Demographic attributes:** These are traditional descriptors of a customer such as age, gender, income level, marital status, region, and so on.
- ▶ **Transactional attributes:** These describe purchase activity such as cart activity, average spend, channel preference, and so on.
- ▶ **Model attributes:** These are values that are uniquely provided by the analytic techniques within Watson Marketing Insights, like attrition score, predicted customer lifetime value, and predicted brand engagement.
- ▶ **Behavioral attributes:** These are other values that are related to the overall customer lifecycle, like abandoned carts, net promoter score, service complaints, and campaign responsiveness.

Watson Marketing Insights provides the distribution of customers across the selected attribute, which is how many customers are within a certain range of churn risk or CLTV. This information allows the marketer to quickly identify concentrations of customers for a particular attribute and filter outliers. This process improves the reach of marketing budget and increases your “bang for the buck.”

To create or modify a target audience, select an attribute and the conditions that you want. The list automatically saves and is available for use or export at any time. See Figure 6 for an example that shows customers by age.

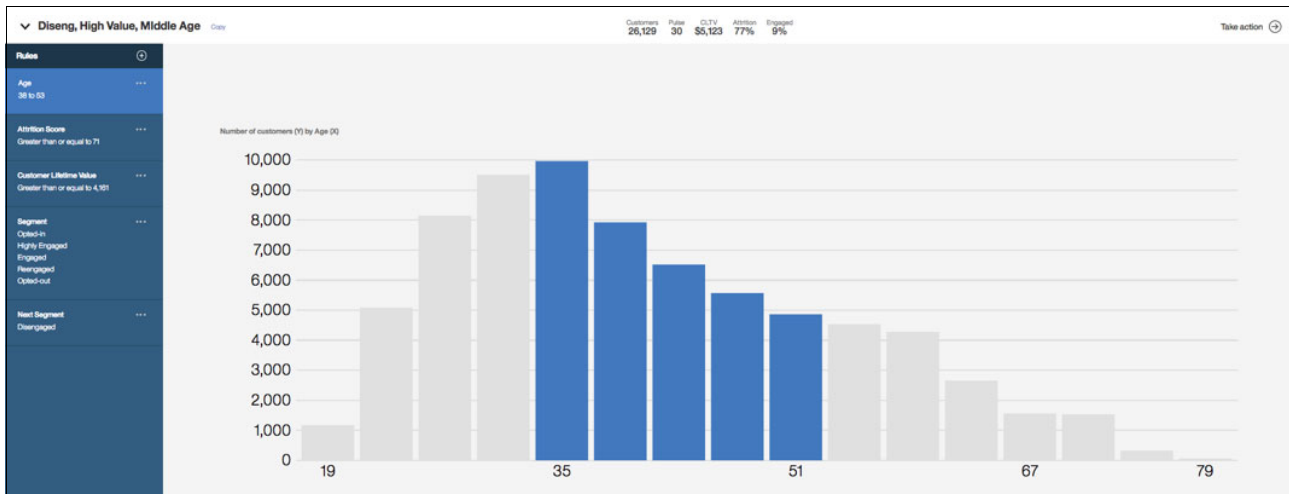


Figure 6 Number of customers by age

Extending reach with third-party customer data

Organizations who rely solely on their own data to perform analytics might struggle to create successful marketing campaigns. To address this challenge, IBM and [Acxiom](#) formed an alliance that provides extra capabilities and curated data sets that extend and enhance an organization’s data. This alliance provides even richer insights and a broader assortment of targeted audiences. The partnership can help marketing analysts and data scientists fine-tune their understanding of their customer base and predict future behaviors with more

accuracy and higher confidence. This feature delivers even greater value with Watson Marketing Insights.

“Acxiom has a long history of helping marketers generate better results from their own customer data, by applying the power of our consumer recognition technology, AbiliTec, and our other proprietary technologies to customer databases,” said Rick Erwin, president and general manager, Audience Solutions at Acxiom. “By collaborating with IBM, we're excited to help bring those capabilities directly into the hands of the marketing analysts and data scientists that can best apply those insights to their companies' unique needs.”³

For more information about the IBM and Acxiom partnership, see *IBM & Acxiom Plan to Help Data Scientists Use Analytics to Obtain Customers and Prospects with Greater Accuracy* at the [IBM News Room](#).

Conclusion

IBM Watson Marketing Insights transforms the marketing experience by driving scalability and self-sufficiency for marketers who before had to rely on data scientists to take advantage of the power of analytics in understanding customer behavior. Rich, prepackaged analytics designed for marquee customer analytics imperatives and an interactive, visual interface allow marketers to quickly identify predictive trends and explore more deeply in ways that are meaningful to the business.

The cognitive analytics engine within Watson Marketing Insights identifies and recommends high priority areas and impactful target audiences for the marketer to immediately address. These target audiences are compiled based on key predictors and like behaviors that a range of analytic techniques within Watson Marketing Insights reveal. Marketers can also explore and interact with the insights and create bespoke audiences that address a specific strategic segment or business objective.

Ultimately, effective marketing efforts are about timely action. The self-learning models within Watson Marketing Insights reduce or eliminate the need to wait for the intervention of a data scientist and automatically provide fresh insights when new data is consumed. This provides the marketer with a dynamic and relevant view of the entire customer base and of specific audiences.

By identifying similarly behaving groups of customers, the marketer can take more effective, targeted action with key audiences. This technique can drive down marketing costs and drive up campaign effectiveness and customer satisfaction. With higher customer satisfaction comes higher revenue, deeper customer loyalty, and increased brand equity.

The IBM integrated Watson Marketing portfolio provides integrated, comprehensive solutions for the entire marketing journey, from insights to campaign automation to real-time personalization. At the heart of marketing insights is Watson Marketing Insights, designed to empower the marketer to discover the opportunity in all data and create transformative customer experiences.

³ *IBM & Acxiom Plan to Help Data Scientists Use Analytics to Obtain Customers and Prospects with Greater Accuracy*, June 20, 2016, [IBM News Room](#)

Other resources for more information

For more information, see the following resources:

- ▶ [IBM Customer Analytics](#)
- ▶ [IBM Watson Marketing](#)
- ▶ [IBM Watson Marketing Insights](#)
- ▶ [Watson Predictive Customer Analytics](#)

Authors

This guide was produced by a team of specialists from around the world working with the International Technical Support Organization (ITSO).

Theresa Morelli is a Worldwide Senior Offering Manager within IBM Customer Engagement in the US. She has managed a number of solutions and offerings within the IBM Analytics and Commerce divisions and is a recognized expert in customer analytics solutions. Her background is in management consulting, industry solutions, and enterprise-level technology operations and release management. Before joining IBM in 2007, Theresa was a global account manager with Accenture. She studied music education at The College of New Jersey and holds a Master of Business Administration from the University of Chicago.

Colin Linsky is a Worldwide Customer Analytics Enablement Leader responsible for technical and seller enablement for Watson Marketing Insights solutions. He has been an independent consultant, serving all industries, specializing in Customer Analytics. With his current Customer Analytics Enablement duties, Colin continues to be hands-on to many organizations by supporting the strategic deployment of analytics both locally in the United Kingdom and internationally. Colin has a Bachelor of Science Honours degree in Psychology from University of Wales (Swansea), a Master of Science degree in Applied Psychology from Cranfield University, and a Psychology Doctor of Philosophy from London Guildhall University.

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Martin Keen
International Technical Support Organization, Raleigh Center

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