WHITE PAPER

The Math of Modern Marketing: How Predictive Analytics Makes Marketing More Effective

Sponsored by: SAP

Gerry Murray Mary Wardley
May 2014

IDC OPINION

Today's highly competitive marketplace requires that organizations create compelling customer experiences. Big data and analytics support this process by generating insights from CRM, social, marketing, sales, and service interactions coupled with transactional data within a predictive framework. The combination of structured and unstructured data creates a more complete view of the customer that can further the conversation, reveal patterns of customer intent, and provide predictive guidance on future customer behavior. This predictive knowledge enables the alignment of corporate goals with customer expectations to create the highest level of customer experience.

Keys to data-driven customer insight are as follows:

- Responsibility for customer experience initiatives is not confined to a single department but is a holistic organizational effort that requires participation from all customer-facing departments (such as marketing, sales, finance, fulfillment, service, and support) as well as back-office processes (such as finance, inventory management, distribution, and logistics).
- The success of data-driven marketing depends on issues such as senior-level sponsorship and active endorsement; tight alignment with business strategy; clear, measurable objectives; and a culture that supports data-driven decision making.
- A complete customer view through data is not restricted to internal transactional data, social media inputs, or customer service/contact center records. All data sources play a role in the total customer view and need to be aggregated, rationalized, and weighted by use case.
- Numbers alone cannot tell the whole story. Data drives but does not dictate decisions. There is a strong need for judgment, expert interpretation, and common sense implementation.

IN THIS WHITE PAPER

This white paper discusses the imperative faced by marketing organizations to create satisfying customer experiences. For the modern marketer, that imperative can be answered only by transforming the marketing organization to a data-driven operating model. Data-driven marketing pivots the marketing organization from "gut feel" to "outcome" focused. Using insight gleaned from analytic models of customer behavior in campaigns and other customer-focused activities enables marketing to create an

efficient, effective customer creation process. It also reduces customer fatigue resulting from over-targeting with irrelevant and unwanted communications. The result is the ability to produce customer relationships that are more profitable for the vendor and more satisfying for the customer.

Marketers who read this paper will gain insight into the following: 1) how to most effectively contribute to customers' experiences, 2) top applications of predictive analytics in marketing, and 3) examples of predictive analytics in action.

SITUATION OVERVIEW

The New Customer Environment

Customers come into the buying process more highly educated than ever before. Various studies estimate that between 40% and 60% of the buying decision is made before customers engage with sales. For brands, this is both a positive and a negative. More informed prospects are better leads, but these pre-educated customers carry risk. In entering the discussion at such a high level and holding the buying power, they are more easily able to switch providers if their needs and expectations are not met. They are also more likely to communicate their dissatisfaction, which can become viral instantaneously.

What is an organization to do? The pressure is high to step up to satisfy this new informed and powerful customer. Marketing must:

- Provide avenues for real-time response to market dynamics
- Shift in engaging with customers when, where, and how customers want
- Orchestrate multiple channels: in store, mass media, Web, social, mobile, etc.
- Adopt a new model of customer experience based on data and predictive analytics

Data-Driven Marketing

Data-driven marketing pivots the marketing organization from "gut feel" to "outcome" focused. Using insight gleaned from analytic models of customer behavior in campaigns and other customer-focused activities enables marketing to create an efficient, effective customer creation process. IDC defines data-driven marketing as follows:

- Making the most compelling offers to the best customers the fastest.
- Making the most compelling offer requires rich, real-time customer insights into questions such as the following: What do we know about these individuals? What need is driving their purchase? Where are they on their buyer's journey? Who is influencing them? Who are they influencing? What's the next part of the story they need to know?
- Defining the best customers requires insight into existing customer relationships: Which customers buy the most the fastest? Which customers have the highest lifetime value to us?
- Moving fast means being able to answer those questions (and many more) between the time a customer clicks on a link and the time your content appears on his or her screen or understanding that a customer of high worth has just entered a physical store and appropriate content can be delivered to that individual's device.

As a result, implementing data-driven marketing requires fundamental changes in infrastructure, processes, and organizational orientation to data.

According to the CEO of a boutique social marketing services company, one of the fundamental principles of marketing in the future will be the requirement for "real-time personalization, which depends on collecting and processing data in real time."

It is a tall order and one that will take most large organizations years to accomplish. But it is much harder to get started than it is to accelerate once the initial steps have been taken. With that in mind, marketers must not get left behind because the gap will only widen between the leaders and the laggards. Once your competitors benefit from data-driven marketing, it is too late, and you will be playing catch-up for a long time.

Predictive Analytics for Marketing

One of the most powerful methodologies behind data-driven marketing is predictive analytics. Predictive models use multi-variate analysis to discover how behavioral patterns at different stages of the customer creation process do or do not influence one another. IDC has found the top applications for predictive analytics in marketing include the following:

- **Marketing mix modeling:** What marketing media is best for generating demand for which types of products? A leading sports and entertainment company recently analyzed the marketing channels it was using to support two different offerings. One was a leader in a well-known category; the other was a new offer. The company was applying its standard media spend to both, approximately 50% on traditional advertising and the remainder on digital. Deeper analysis showed that the product in the well-known category received a lot of traffic from digital promotions, but the new product did not. As a result, the company restructured its marketing to mostly digital for the existing product and mostly traditional to build awareness for the new product. **The result was a 40% increase in monthly subscriptions at no additional cost.**
- **Enhanced lead scoring:** What response patterns are best for qualifying leads? A midsize high tech company recently **doubled its lead-to-opportunity conversion rate** by analyzing its lead scoring methodology. The company discovered that its original scoring model was linear, so every additional visit or download elevated the lead score. After analyzing how marketing-generated leads performed in the sales pipeline, the company found two insights that changed everything. Only a few key factors were found to be relevant, and there was a significant diminishing return on the quantity of interactions. In addition, it also established that there was a limit on the number of leads on which sales could execute after which additional leads made no impact. So the company was able to provide the right volume of the right type of leads to each rep.
- **Up-selling and cross-selling:** An online gaming company was able to convert **free players into revenue-generating players**. The company analyzed player data to understand the behavior patterns and preferences of players and gained insights into the best time to engage with players to make personalized and relevant cross-sell and up-sell offers on virtual objects.
- **Web optimization:** How do we optimize customer engagement on our Web site? One of the Web's largest and longest-standing financial information Web sites recently found that there are discernible segments of visitors on its site. Some take too long on too few pages, others take too little time on too many pages, and others spend just about the right amount of time on

the right number of pages. By quantifying the page view patterns, the company was able to create real-time interventions using online chat in the two non-productive scenarios and attempt to get those visitors on the right track. As a result, the company **increased Web revenue by more than $10 million annually.**

The power and scale of applying predictive capabilities can be seen in Mobilink. Mobilink is a telecommunications company headquartered in Islamabad, Pakistan. Operating in the highly competitive telecommunications market, Mobilink runs over 800 promotions a month. Of those campaigns, approximately 60–70% are now based on predictive analytics. Mobilink states that it can easily see that the campaigns based on predictive models bring in more revenue than the other macro-segmentation campaigns, which don't use those models. The company has experienced significant increases in business metrics, including an 8x increase in uptake of customer retention offers (from 0.5% to about 4%), and at a fraction of the cost, as well as a 380% boost in campaign response rates through social network analysis.

Other predictive analytics applications that can have significant payback for marketing, depending on your business model, include:

- **New customer acquisition:** Knowledge about existing customer profiles and buying tendencies can be leveraged in analysis of new populations to predict the most likely to become customers and even high-value customers.
- **Optimization of campaigns, promotions, and loyalty programs:** An auto insurance company was able to increase loyalty and reduce customer churn. By analyzing customer buying patterns, it was able to put the right products and services in front of members at the right time. By extending targeted offers to members with low usage, the company was able to cut attrition and increase overall customer lifetime value. It also saw an increase of millions of dollars in sales due to campaign optimization.
- **Product promotion by channel preference:** A leading European teleshopping company with a multi-channel environment provides consistent experience to its customers through better customer segmentation and customized offers based on channel preference. The company has decreased the return rate by 1%, which contributes to more than $1 million in profit.
- **Product bundles based on consumer behavior:** By finding customers similar to those that bought products A and B but only bought A or B, marketing can generate of list of prime cross-sell candidates to customer support. This can be an area of immediate impact for B2B marketers. One of the world's most successful beauty product companies uses this technique to empower its customer service representatives to up-sell customers after resolving support calls when appropriate. As a result, the call center has **transformed from a cost center to a revenue center.**
- **Price optimization:** This includes simulating price changes based on various attributes, which helps reduce stock-ups, as well as cutting deep into the margins to sell products at a high discount rate.

Which application is best to start with will depend on your business model, the state of your marketing data, your analytics maturity level, and the mission of your marketing team. The idea is to look forward, not back. Prediction will require additional tool sets of the technology as well as the organization.

As Viliah Overwater, Vodafone's Senior Information Architect, BI Strategy & Architecture, stated, "You can't say do reporting and then expect models; it's a different skill set. It's a struggle to move from reporting to modeling and predictive analytics."

Challenges/Opportunities

Analytics and data analysis have become hot topics and buzzwords with the explosion of social data and the growing awareness for the concept of big data. Many organizations have started analytics practices or augmented existing practices and have experienced moderate success. However, several challenges exist that, if addressed, can lead to even greater success. They include:

- **Lack of clear definition of desired outcomes.** Better decisions from insight depend on how well the insight is incorporated within each process' decision management framework.
- **Understanding the need for a broader set of data.** The proverbial "360-degree view of the customer" is in actuality restricted to closer to 180 degrees, representing the known structured data that the organization has collected over time. It lacks external, unstructured, and often un-augmented data. Useful insight depends on capabilities for collecting, organizing, and analyzing data from varied sources.
- **Technology is ahead of culture and skills.** Historically, analytics teams have been set apart in their own department, which can challenge the alignment between business and analytics teams. For data to be applied effectively and with business benefit, it must be applied across internal departments and systems, and those teams need to have an understanding of what each contributes.

As Ammar Karim, assistant manager of advanced analytics at Mobilink, stated, "Marketing analytics is not the job of the analytics team; it is the job of the whole marketing department."

One of the simplest ways to assess where you are with respect to predictive analytics is to run the following experiment. Send "thank you" notes to your best customers and include a discount for the specific product or service you expect them to buy next. Can you identify your best customers? They're the ones who buy the most the fastest, require the least amount of support, and endorse your brand. You'll have to look outside of marketing to find the data you'll need. What's the offering they're most likely to buy next? You find the answer by matching them with similar customers who made the same type of purchase and bought something else. The difficulty or ease with which you can get the right data together will give you a good indication of how well prepared your organization is for predictive analytics.

CONCLUSION

Imagine you have better insight than your competitors into how the behavior of your customers translates into revenue. Imagine how easy it would be to have several weeks or months to develop the relationships without meddling from other vendors. You could have demos, proposals, and even deals done before another competitor comes knocking on the customer's door. Now imagine it's your competitor that has all that insight. It is not only ahead; it is gaining ground on you. You are a day late and a dollar short with every customer. Predictive analytics has clear competitive implications; the fact that it will require tools and an enhanced skill set makes it all the more powerful as a means of competitive differentiation. It also makes it all the more important that you start right now, if you haven't already.

Mobilink

Mobilink is the leading telecommunications service provider in Pakistan. Founded in 1994, Mobilink serves more than 20,000 cities, towns, and villages across Pakistan. The company has announced an aggressive plan designed to create the country's largest 3G network made up of 9,000 cell sites across Pakistan by July 2014. As Mobilink modernizes its telecommunications infrastructure, it has also modernized how it analyzes and targets its customers with service offerings. In an environment where GPRS (General Packet Radio Service) and 2G and 3G networks co-exist, Mobilink services a wide range of customer types. Using sophisticated modeling, customer profiling, and predictive analytics combined with an interdisciplinary business team consisting of data analysts and marketing personnel, Mobilink has measurable ROI from its targeted campaigns.

The Challenges

The highly competitive telecommunications industry faces constant pressure to achieve two objectives simultaneously: 1) increase revenue and 2) decrease churn. In 2009 the company selected SAP InfiniteInsight (formerly known as KXEN InfiniteInsight; SAP acquired KXEN in 2013) to advance its analytic capabilities. While Mobilink had been using InfiniteInsight in campaigns, the intelligence piece related to how it selected the customers for campaigns was missing. In 2013 Mobilink realized that it needed more insight into individual customers in order to offer more targeted campaigns. The advanced analytics group embarked on building a comprehensive view of each customer. Specifics needed to drive business decisions were:

- Increase predictive capabilities to identify a variety of business indicators such as propensity to churn or potential high lifetime value customer
- Understand customer behavior through cluster analysis
- Understand how the customers were connected to one another through social network analysis

The Solution

Mobilink runs over 800 promotions a month. Of those campaigns, approximately 60–70% are now based on predictive analytics. Mobilink states that it can easily see that the SAP InfiniteInsight-related campaigns bring in more revenue than the other macro-segmentation campaigns, which don't use predictive models. The company has experienced significant increases in business metrics, including an 8x increase in uptake of customer retention offers (from 0.5% to about 4%), and at a fraction of the cost, as well as a 380% boost in campaign response rates through social network analysis.

Examples of Mobilink's usage of and success with SAP InfiniteInsight include:

- **Increasing revenue:** To drive revenue, Mobilink uses various predictive models such as the high-value prediction model. The output from such an analysis gives Mobilink the subscribers who are likely to become high-value subscribers over time but are not yet high value. Armed with this information, Mobilink "over-ensures" the prediction by giving subscribers in this category an attractive offer that ensures they actually do become high-value subscribers.

- **Reducing churn by identifying "unknown" network users:** Mobilink faces a significant challenge within the Pakistan telecommunications market as a majority of network subscribers utilize prepaid calling cards. This means that while Mobilink can see the subscribers on its network as well as their SMS and voice call behavior, the company lacks identifying information as well as demographic information such as gender and address. This makes tuning offers aimed at reducing churn and targeting these offers to individuals very challenging, and in a market where personalization is on the rise, Mobilink was at a disadvantage. Mobilink uses the SAP InfiniteInsight product to analyze the social graph (those with whom the individual personally interfaces) of the network users, and then based on the community information and social role, creates derived variables that are also used in other models. In this way, other models are enriched with social network data. The more complete the data, the more granular the models can become to target individuals and individual behaviors. (Note to readers: In this case, social network refers to the subscriber's personal social graph and not a public social network such as Facebook.) Mobilink has experienced success in two areas:
  - **Identifying the influencers:** As part of internal analysis of churn, Mobilink noticed within the graphs that certain communities would vanish from the network but then reappear. The profile of the communities based on connections revealed that the individuals were likely from one family and centered in certain areas. Using the social graph, Mobilink could target the influencer within the community of behavior to head off churn, which would then cause others to follow.
  - **Identifying "offer hoppers":** Using the social graph, Mobilink was also able to identify and target individuals who are offer hoppers or cherry pickers. By using "calling" and "called party, Mobilink was able to identify the individual through the calling pattern and could see the individual SIM with the calling pattern leave the network and then reappear under a different SIM. Identifying the behavior, while not knowing the individual's identity, still enables Mobilink to target the subscriber with the type of offer the company knows appeals to this profile and reduce churn.

Lessons Learned

An Interdisciplinary Team

While Mobilink had the technical expertise in IT for analytics and the marketing department was consuming the output, there was a gap in knowledge sharing. 2013 was identified as Mobilink's most successful year because the company made the move to combine the analytics and marketing teams within the commercial group by moving the analytics team into the commercial group and physically co-locating them. IDC conducted a joint interview with Ammar Karim, assistant manager of advanced analytics, and Kaleem Ullah, manager of customer case management, which includes all promotions being executed through voice, SMS, and contact center channels. Today, the two teams sit in the same hallway and meet on an ongoing basis to discuss the results of existing campaigns such as understanding the scores and to discuss upcoming business needs.

As Karim stated, "Marketing is the driving force for analytics to have direction; they are the motive behind the successful analytics." Marketing suggests the business cases against which the analytics team builds its models. Then the two teams meet and selectively decide which models to build in the future, but it all starts with a business question. Likewise, the business person must also gain a level of technical understanding.

Advice to Others

Mobilink feels strongly about the link between the business and the analytics team and advises others following a similar path to make the investment in a cross-functional team. Additionally, while Mobilink was ultimately successful in building its models and predictive frameworks, the company felt that it experienced a delayed learning curve in the beginning. Mobilink advises others to seek help in the form of business consultancy processes and frameworks from their suppliers.

Boutique Social Marketing Services Firm

This company provides marketing services based on its expertise in predictive analytics for marketing. Its clients include large European brands in broadcasting, sports marketing, music and entertainment, and other B2C sectors that are striving to respond to customer behavior in real time. It uses SAP InfiniteInsight to build predictive analytics models that help its clients better segment, target, and attribute their marketing spend. Its competitive advantages are based on the quality and speed of the actionable insights it provides.

The CEO founded the company with three fundamental principles about the future of marketing:

1. **ROI:** Marketing budget must be spent efficiently.
2. **Digital:** Mobile, digital, targeting, retargeting, content management, and social are revolutionizing the practice of marketing.
3. **Analytics:** Real-time personalization depends on collecting and processing data in real time.

The company's business model is based on the ability to build actionable analytical models from social and appended third-party data very quickly. One client is a broadcaster that must process real-time data on viewers coming from set-top boxes. When the set-top box is on, the broadcaster can track all the programs being served, but it doesn't know who is watching or if the screen is actually on. It has only the account holder's name. So, who, if anyone, is watching? By scanning social media such as tweet streams and Facebook posts and matching them to known IP addresses, it can see when people comment about a show they are watching and attribute it to a specific household. It enriches the analysis with a variety of other dimensions such as demographics, financial and credit data, and purchase histories to identify which viewers are most likely to buy which products. With this insight, the broadcaster can sell targeted ads for specific set-top boxes at a premium. Currently, this ability is available only weekly because the process between broadcasters and advertisers is not automated. But the future is all about real time.

The Challenges

The company's services need to be extremely fast. In founding the company, the CEO identified three key issues for the firm to solve:

- **Infrastructure:** Designed specifically for analytical speed at scale
- **Socialytics:** Aggregate real-time feeds from as many structured and unstructured sources as possible
- **Team:** Skills to build the infrastructure, design the analytic models, optimize the data flow process, and be able to talk to customers

Infrastructure

As a small company serving large enterprises, it needed a flexible solution that would scale from a very small user base but support large customer relationships. It built its own infrastructure to handle the data – the only major piece of commercial software is SAP InfiniteInsight, the engine behind the analytics. It selected SAP InfiniteInsight for the following reasons:

- Economical in terms of licensing
- Interface does not require expensive data scientists – business users are equally capable of learning the basics
- Fast, social semantic data, and node analysis was a key capability needed to weed out fake accounts
- The ability to build additional apps/functionality later on

Socialytics

The company found that by applying sound analytical techniques, it can identify individuals and build structured views of audience composition. But it requires a massive amount of data from personal demographics and digital content (tweets, blogs, photos, etc.) to be combined with structured sources. The whole data set is measured in terabytes. To speed the analytics process, the team selects the most powerful attributes and delivers data sets measured in gigabytes for analysis. Some of the most effective pre-filtering is based on questions that disqualify records from the analytical pool:

- How do we think about social marketing and media in terms of tracking people?
- Even if people like your brand and promote it, how do you differentiate between prospects to buy and fans who just like your logo design?
- How do you know if the offer is relevant?
- How do you know the best person to target and the best time to advertise?

Team

According to the CEO, "Everyone in the company needs to know their clients. We need to explain to clients where the insights come from. Data scientists need to attend client meetings." This ensures that the sales reps and the project managers are hearing the same story and stay on the same page throughout the sales and delivery process. Everyone in the organization needs to know how to communicate with the clients, and client interaction is the best way to build customer-centric culture. As one data scientist discovered after a client meeting: "I was looking for the answer in the data set, but it came to me from what the client said."

Lessons Learned

- **Culture:** Make sure everyone is learning from everyone else and everyone knows what's going on. The company has a "trading meeting," which is a daily morning coffee session where staffers trade information on what they're doing and seeing in their work. What are they processing? What insights have they found? A key topic is how to improve pre-processing to get better data sets for analytics.

- **Education:** Clients still require a lot of education on what can be done with big data. Very big brands have thrown themselves intently at social, but they are on a developmental journey to discover the important buying and influencer behavior from all the noise.
- **Value:** It's very hard to know beforehand how much benefit will come out of an analytics project because it typically involves testing new insights. It's important to go after established metrics where data sources are readily available.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

Global Headquarters

5 Speen Street
Framingham, MA 01701
USA
508.872.8200
Twitter: @IDC
idc-insights-community.com
www.idc.com

Copyright Notice

External Publication of IDC Information and Data – Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Copyright 2014 IDC. Reproduction without written permission is completely forbidden.