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See the future, act now

Predictive analytics turns insight into competitive advantage for consumer brands

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50%

Half of data and analytics decision makers say they have adopted some form of predictive analytics.*

*Base: 2,165 data and analytics decision makers. Source: a commissioned study conducted by Forrester Consulting on behalf of KPMG, July 2016

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No time like the present

Hindsight is 20/20 and companies continue to make decisions by looking back at what may have gone wrong. Instead, leading organizations are using new analytic tools to predict the future—and get it right.

Tell me something I don't know

Loyal customers, lower costs, increased efficiency, and production at an all-time high: an alternative reality or a real possibility? Imagine how your business would benefit if you could:

— Anticipate future demand

— Identify unseen trends

— Make decisions by evaluating unknown consequences

— Address issues before they become serious problems

— Capitalize on opportunities that your competitors may not even have on their radar.

As we digitize processes and put more and more sensors into the ecosystem, there is more information available that can be analyzed to predict behavior and outcomes. If you could use predictive analytics to identify the likelihood of future results, what would you want to know?

After all, it is much easier to make decisions if you know what is going to happen.

Know thy customer

With so many channels and multiple devices, the opportunity for a brand to build a lasting, significant relationship with a consumer is increasingly difficult. With predictive analytics, companies can anticipate behavior in a given interaction with a high likelihood of probability, but they must be ready with the right offer at the right time. Opportunities for companies to increase profitability through predictive analytics are discussed on page 6.

Seizing the data

Too much information

To predict the future, you will need data. Not a problem since the volume of data continues to proliferate at an often overwhelming pace. The variety of data is also rapidly expanding, and the velocity, or when data becomes available, is very near to real time. It's no surprise that many companies struggle with managing the data to which they have access, and that valuable information may be sitting idle. Predictive analytics can put that data to work. By applying a set of mathematical algorithms to historical data, scores that indicate likely outcomes in the future can be determined. These predictive scores are used to monitor activities or events, providing insight into what is about to happen.

While data mining and warehousing is nothing new, predictive analytics may have been a little before its time. Unlike big data, it did not reach buzzword status until recently. Just four or five years ago, it was a major undertaking to leverage predictive analytics, and many organizations believed it was beyond their reach. PhDs and mathematicians were required, along with really expensive technology systems, to support it. While the number of individuals within an organization who have the mathematical/statistical/analytical prowess to be able to run predictive models is still limited, predictive analytics and data management systems are now more accessible and more affordable. There are many analytical services and applications in the market that, if desired, can be customized or integrated with those that have been developed in-house. Consulting firms like KPMG LLP (KPMG) are helping clients deploy and leverage those solutions.

The bottom line? Enabling technology and people skilled in interpreting data have resulted in a convergence where predictive analytics can and should be an integral part of business operations.

What's standing in my way?

Companies know that being data and analytics driven can help them identify opportunities as well as areas

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they need to address. However, when approached with a disruptive set of new information, many organizations are not structured or equipped to easily take that information and apply it effectively. Hindered by various existing data functions, processes, and roles built around often disparate and complex legacy systems, they lack the ability to be flexible and to react quickly.

Perhaps even more of a concern is that a 2016 survey conducted by Forrester Consulting on behalf of KPMG found that less than 40 percent of analytics teams work with business partners to set objectives up front. This means that many analytics teams may be working in their own silos without truly linking their activities back to business outcomes. While there are many people who can analyze data and provide answers about what happened, the number of individuals who can mine data and predict what is likely to happen is a much smaller universe of resources. Only 47 percent of survey respondents believed their data analysts have the right skills to continuously push forward with data and analytics applications. As new and more sophisticated analytics techniques are deployed, this skills gap is very likely to grow.

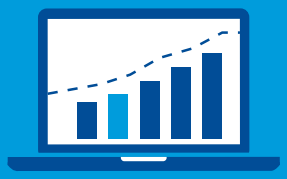
Other potential challenges include the lack of organizational capacity to take on new initiatives and/or the lack of funding. Additionally, some organizations may not possess the innovative spirit that you often find among technology and start-up companies, many of which view predictive analytics as something that has the potential to fundamentally change their business.

An investment priority for CEOs

Despite exponential advances in data and analytics, chief executive officers (CEOs) clearly feel they are not keeping up and identified data and analytics as one of their top three investment priorities for the next three years.

Only

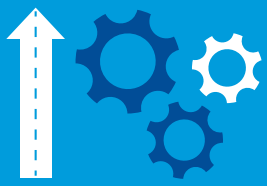
31%



of CEOs feel their organizations are leaders in data and analytics usage.*

Just

10%



of organizations believe that they excel in quality of data, tools, and methodologies.**

* KPMG's U.S. CEO Outlook 2016 Survey; Base: 400 chief executives in the United States

** Commissioned study conducted by Forrester Consulting on behalf of KPMG, July 2016; Base: 2,165 data and analytics decision makers

Insight into advantage

A data-driven organization embeds the ability to harness the power of data in every aspect of its business, including how decisions are made, how processes are operated, and how people are enabled.

No crystal ball required

Predictive analytics is not a function, and you cannot just insert it into existing business processes. An effective approach is to form a new department that is essentially a "shared service" around the collection, governance, and analysis of information. This department would provide predictive analytics capabilities and services to various functions/groups (e.g., engineering, customer service, and dealers.) Strong sponsorship from the top of the organization is required to ensure alignment with strategic objectives and to break down organizational barriers. Leadership needs to invest in and drive this transformation, as it is not an incremental step in the existing decision-making processes.

It is important to note that the real leaders are not the companies that are digitizing their information and rebuilding their current processes around that digitized information. They are the companies that are stepping back and asking, "What could the business process be now that we have this new information available to us? How can we do things differently?" It is much more than a marketing agency using new information to change the content of ads; it's about deciding whether to completely change the entire marketing process or target different consumers or use different channels, and it is based on sound mathematical analysis.

Not one and done

Once a company starts to use predictive analytics to make decisions, it can change the way it operates. However, to be successful in the long term, predictive analytics has to be an iterative, sustainable process. Ongoing maintenance is required as both internal and external factors are constantly changing, and models need to be reviewed and revised to accommodate these changes. Companies have to continually look at what is occurring in the marketplace and what new information is available. Access to new data sources means there will be new outcomes. You cannot build a predictive model once and say "I'm done"; what worked just last year may not work today.

What's in it for me?

Companies that are able to step back and think about how they are going to leverage data and predictive analytics to transform the way they run their business—how they can run it faster, leaner, and smarter and improve profit margins—will likely benefit the most. Ultimately, what they are doing is lowering costs, increasing effectiveness and efficiency, and becoming more nimble in how they react to opportunities in the marketplace. Organizations that do not take advantage of these capabilities face risks from competitors that have a deeper understanding of how best to run their companies.

As Dan Fisher, Advisory principal at KPMG, explains, "Today, the issue is no longer about owning the most data but, rather, about how to gain the most insight from it. In short, how to turn data into insights, and insights into real business advantage."

Transformation begins at the top. Leadership needs to map out how predictive analytics is going to impact all function and business processes and serve customers, as well as how it is going to be done seamlessly. Predictive analytics is most effective when it permeates throughout the company, when all decision makers and all departments are working together. Having an end-to-end strategy is critical to harvesting the full power of predictive analytics—and to predicting the future.

Having doubts?

Given the many potential advantages of making better and faster decisions, trusting your analytics should be a nonnegotiable business priority. Yet 60 percent of organizations say they are not very confident in the data and analytics insights they receive*. Read more on this topic in KPMG's recent report: **Building trust in analytics: Breaking the cycle of mistrust in D&A.**

* Commissioned study conducted by Forrester Consulting on behalf of KPMG, July 2016; Base: 2,165 data and analytics decision makers

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> **"It's not about owning the most data, but about gaining the most insight from the data and turning it into a real business advantage."**
>
> —Dan Fisher, Advisory Principal, KPMG

Keys for success

- **Elevation of the importance of data and its robust uses to a C-level priority that informs all actions**
- **Willingness to change process, people, and technology together**
- **Keen attention to the cultural elements:**
  - Moving from gut instinct to reliance on objective data
  - Incentivizing employees to test new concepts
  - Moving from ownership to stewardship of data

Applying predictive analytics

Retail

As more and more transactions occur over the Web or via mobile device, retailers have more information about the transactions and the events leading up to those transactions. They determine what a consumer is likely to buy based on history and segmentation. For example, if a customer exhibits these behaviors, we will present these offers/products to them at these prices, because we will very likely turn that into a sale.

Manufacturing

Large industrial companies will place sensors on engines or other manufacturing devices. They will look at that data over time and run a set of analytics to understand the predictors that a machine, or a specific part in the machine, is about to have a failure. As the machine starts to show signs that it is reaching a critical point, they will proactively replace a valve/filter, because predictive analytics told them what is about to occur. They will have the right set of materials on hand to fix problems, reducing a large inventory of spare parts. Downtime is eliminated for their machines, and the company can further benefit by right-sizing their maintenance workforce.

Telecommunications

Telephone company assets that are used to provide wireless services are all tagged; they are in a database and in a fixed asset ledger. Occasionally, those assets need to go for repair, and they have an average life span of X number of years. You can take this data and combine it with statistical algorithms and analysis to determine the average life span of an asset, when it will need to go out for maintenance, and when it will need to be replaced.

Public organizations

Local government or transportation agencies use cameras to obtain traffic data. As a result, they can better optimize street lighting, traffic lights, and traffic flow and predict when roads are going to need maintenance. They can even understand the potential impact on traffic and where it should be diverted should a maintenance issue occur.

Are you in a relationship?

Using predictive analytics to meet and keep profitable customers

Access granted

Technology has enabled consumer goods companies to have relationships with their customers. From personal care to toys, sporting goods to home appliances, and luxury brands to everyday apparel, companies that relied on retailers to sell their goods now have direct access not only to the consumers of their products, but also to the massive (and growing) amounts of potentially valuable data about their preferences and the buying process itself. Through mobile devices, social networks, shopping data, and the "digital footprints" they are leaving, consumers are making their preferences known, if companies know how to interpret the signals. However, having this type of consumer access doesn't necessarily mean they are accurately predicting behavior and winning consumers over.

Companies with established brands have been especially challenged as they try to determine just what a consumer-centric approach looks like in this new reality. How can they use all of this new data to get to know their customers and design experiences to delight them across multiple contexts, channels, platforms, and devices?

Fully customized

By gaining a better understanding about consumers' preferences, companies can design more relevant products and services—and the experiences that contain them. Anticipating what a customer is going to do in a given interaction with a high likelihood of probability is incredibly important—the opportunity to interact with them again before they make a decision isn't guaranteed. Being ready to present the right consumer with the right offer at the right time and in the right way can lead to increased profitability for the company, but this also isn't a given

No longer limited to the items on a shelf at a local store, consumers now have access to all brands and all products (at all times), including near-perfect information about products through reviews and ratings, product comparison sites, and online shopping. This access to more product information has given the consumer more choices, but it creates complexity for brands that are seeking to deliver great experiences. With so many options, channels, and multiple devices, the opportunity for a brand to build a lasting, significant relationship with a consumer is increasingly difficult.

Anticipating desire

Consumer brands have been using data and analytics for decades. However, traditionally, predictive analytics has primarily been used to manage inventory and optimize supply chain and distribution networks, rather than to understand consumer behavior. Today, predictive analytics is based on intelligence and insight about past behavior, and the expectations and desires of the consumer. All available data both inside and outside the brand's environment is used to look at consumers' historical patterns and predict the likelihood of particular outcomes. This usually takes the form of probability scores, calculated and assigned to individual consumers or segments, that express the prospect of a consumer taking a specific action, like buying a certain brand of toothpaste or choosing one offer versus another.

When performed well, predictive analytics enables carefully crafted engaging content to be delivered with a high level of precision. Among a selection of hundreds of different products, predictive analytics can help narrow down options to the critical few that a particular consumer is likely to positively respond to, interact with, buy, and promote among social network followers. For example, a dishwasher brand can have many different performance configurations, as well as pricing, capacity, and cycle time options. Predictive analytics can help determine the option packages best aligned with a specific customer's preferences, avoiding potential confusion and reducing complexity for the buyer.

Making the right match

Given the availability and impact of entirely new data sets, companies are exploring better ways to leverage the valuable insights derived from predictive analytics. They are investing in consumer digital and marketing technology, third-party data, and in-house analytics capabilities in an effort to more profitably reach, grow, and retain their customers. With this insight, brands can now predict with extreme precision almost exactly what every individual wants and craft personalized experiences for each one. Now they must ask the question: should they?

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To make the most of an interaction with a potential customer, an "experience" needs to be predesigned and presented to a specific type of consumer when needed These "moments of truth" can be fleeting, infrequent, and dynamic. Predictive analytics is necessary to narrow the scope of all the possible experiences (offers, content, follow-on interaction, suggestions, etc.) among hundreds of options. To truly capitalize on the opportunity, predictive analytics can use real-time data to score a visitor to a Web site based on likelihood to respond, interact, or click on certain content. An offer or some other preplanned response can then be presented. In this way, the brand is able to leverage and monetize the free data it is already collecting.

However, designing and delivering the perfect experience for every consumer can be an expensive proposition. Even though most brands could accurately predict and meet every consumer's expectation, it just isn't feasible. Some consumers deliver more value to the brand than others, and investing in those experiences can produce disproportionately higher returns for the brand.

Not ready for a commitment?

The democratization of data and analytics has made it possible for analysts and businesses to use the power of predictive analytics and modeling that was not possible just a few years ago. Costs are lower, the potential value realized is greater, and the return on investment can be impressive.

While no one disagrees with the concept of predictive analytics and its potential value, it's not yet being used as widely as might be expected by most consumer brands. Many companies have previously invested in various types of technology/analytics/data platforms and haven't yet turned the corner to value creation. They've jumped into digital media and personalized customer experience with both feet but haven't realized the payoff. The challenge is to determine how to begin leveraging predictive analytics to better understand consumer expectations and design the right brand experiences that deliver the greatest value to both the brand and the consumer. With a clear understanding of the current situation as a starting point, brands should use this guiding principle to build capabilities that capture value along the way as they progress toward the desired future state. New assessment tools and road maps are helping companies make this transformation, but economic value—not technical bells and whistles—should lead the way

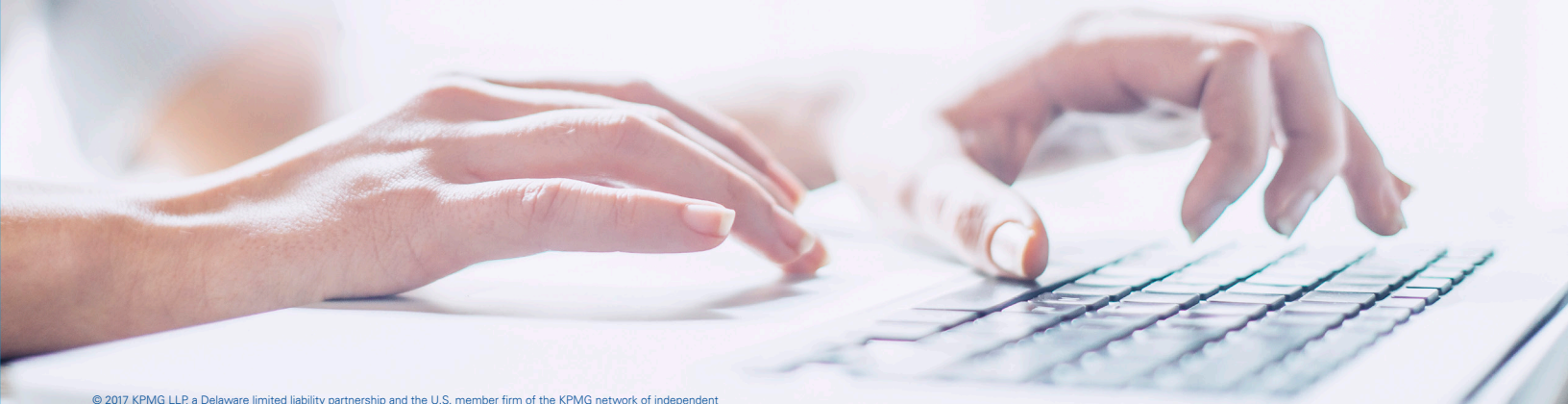
A direct approach

With these new technology advances, the pressure to go direct to consumer continues to increase. Brands that have never done this before are not always sure how to proceed. Rarely does a product company have the right infrastructure in place, such as CRM software, customer database, an e-commerce platform, or the ability to mine media and drive traffic to a conversion site that would enable it to conduct a relationship with consumers. These are all capabilities that retailers have had for decades, but most brands find themselves playing catch-up. Additionally, the operational and implementation risk can be enormous if they don't get it right. Brands spend millions of dollars on media to drive traffic to a site but often are not able to turn the traffic into conversions. Consumers can be fickle and if they have an experience that's not to their liking, they may never come back, wasting that investment and the opportunity to build an enduring relationship.

The time is right

Timing is everything when it comes to relationships. It's time for brands to bring the sophisticated algorithms and predictive analytics techniques they use to manage supply chains and optimize inventory to the front lines with consumers. While it may be hard to take these first steps, brands can pilot e-commerce tools, test new data sources, and design new experiences in the short term—at very little cost, at low risk, and at reasonable investment— to explore how predictive analytics can work for them. However, the clock is ticking and there may not be much time to get it right. When a consumer shows up, the brand needs to be ready to execute, with the right investment and the right experience in place. If one brand isn't able to deliver, there may be others who can.

Turning data into valuable insights that can make a powerful difference for the business, and for customers, provides a clear competitive advantage. Predictive analytics can help companies improve the only relationship that really matters: the one they have with the consumer.



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Dan is a principal in the Management Consulting Technology Enablement Data & Analytics practice and the national leader for the Management Consulting Data & Analytics practice. He specializes in the delivery of data for analytical insights through next-generation technologies. Dan has spent more than 20 years in the field serving a broad spectrum of clients and industries, with deep experience in helping organizations design and build their enterprise analytic data architectures, including data integration, master data, data warehouse, big data, and visual analytics. Dan has functional experience in back-, middle-, and front-office processes.

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Todd leads KPMG's Customer Insight and Analytics practice. For more than 15 years, he has designed strategies and developed solutions for many of the world's most iconic brands to better use data, analytics, and technology to cultivate enduring, valuable relationships with customers. At Ogilvy & Mather, Todd delivered data-driven customer engagement platforms, and his teams won multiple Cannes Lions for the inventive use of insights in engagement design and creative execution. Prior to his time at Ogilvy, Todd led Acxiom Corporation's Global Data Products & Services organization, where he developed Acxiom's digital data and analytics capabilities in more than 80 countries worldwide.

Data and analytics at KPMG

In an environment defined by constant disruption, business leaders need data and analytics they can trust to inform their most important decisions. KPMG's Data & Analytics (D&A) team has earned that trust with an evidence-based, business-first approach. We are experiencing unprecedented growth in helping clients gain insights and derive value from data. The result is trusted analytics solutions and services that business leaders can believe in to help increase revenue, reduce costs, and manage risk throughout the enterprise. For more than 100 years, we have worked across industries to help member firms' clients address their long-term, strategic objectives. And as an internationally regulated accounting and professional services network, our member firms have an unwavering commitment to precision and quality in everything we do.

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Trusted analytics

With so much riding on the output of data and analytics, significant questions are now emerging about the trust placed in the data, the analytics, and the controls that underwrite a new way of making decisions.

KPMG's Trusted Analytics article series seeks to explore and evolve key trust concepts critical to organizations and consumers as they integrate D&A into their daily decision making. Please read the articles, join the conversation on LinkedIn or on Twitter (@KPMG, #trustedanalytics), and help unlock the benefits of trusted analytics.

To learn more, visit www.kpmg.com/trust.

kpmg.com/socialmedia

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