See the future, act now

Predictive analytics turns insight into competitive advantage when managing fixed assets
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
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.

Managing fixed assets
Predictive analytics is changing the way companies are approaching their business operations. Capital-intensive companies can identify maintenance issues before they happen, eliminate costly shutdowns, increase efficiencies, and improve financial results. These and other potential advantages are discussed on page 6.
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 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
**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
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.

“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
Effective asset management is core to the success of any manufacturing company and is fundamental to maximizing value across the value chain. It is not enough to do an average job managing assets in today’s challenging business environment. Organizations need to get their arms around what fixed assets they have and how best to track them. But to avoid significant downtime, which can impact productivity and revenue, they need to know not only where their equipment is but also whether it is in good operating order. With predictive analytics, companies can better monitor equipment inventory to ensure it is sufficient, identify equipment maintenance issues before they occur, and know when replacement parts are going to be needed. They can determine if the sourcing side matches the inventory side of the house and whether it agrees with financial records.

Applying a scientific approach to asset management, one that maximizes return on investment and drives revenue by predicting outcomes based on experience and likelihood, may mean taking the human function out of the calculation. When you leverage predictive analytics, it is a much smoother process than having a number of people reporting in that it is time for assets to be replaced or that you are going to need more inventory next week. Human input can be very subjective and prone to error. Leveraging predictive analytics can increase efficiencies and give people more time to focus on activities where they can provide greater value.

According to Joe Incorvati, managing director in KPMG’s Advisory Services practice, “Using data to understand where your fixed assets are and to be able to predict maintenance or replacement needs is critical to the economic success of an organization.”

In recent years, companies have developed “bubble-up” analytic programs that are not strung together, and many tend to have siloed capabilities. Not only do they not realize all potential benefits, sometimes these types of point solutions may be in conflict with each other. For example, the marketing department may be doing a great job driving demand for the product, but if it is not aligned with the supply chain and purchasing functions, the result may be inadequate inventory, frustrated consumers, and a waste of marketing dollars.

The full realization of reliability and profitability breakthroughs will happen when organizations break down processes and organizational barriers and use new information to make decisions. With respect to managing fixed assets, at the minimum, procurement, operations and finance functions need to be involved in order to maximize productivity, reduce downtime, drive revenue, and increase return on investment. The information technology department should also be included as they typically manage the data and own where the data resides.

The procurement department needs to know which assets to purchase and when to purchase them, and the operations department needs to know when to send them for repair or when to replace them. The finance function needs to know what assets are available at a given time, if they are earning revenue, and if their useful life is drawing near. All of this information not only impacts financial records but also provides opportunities for up-front tax planning that can make a real difference on bottom-line results. For example, the location where an asset is procured can impact sales and use taxes, tracking where the asset is located can impact property taxes, and accelerated tax depreciation deductions may be available to reduce income taxes.

Organizations that are able to manage their assets effectively in conjunction with their sales plans, procurement needs, and tax planning are exponentially more optimized. The companies that take a holistic approach to asset management benefit the most.
“Using data to understand where your fixed assets are and to predict maintenance or replacement needs is critical to the economic success of an organization.”

— Joe Incorvati, Managing Director, KPMG
About the authors

Daniel Fisher
Advisory Principal
T: 214-840-2180
E: danielfisher@kpmg.com

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.

Joseph E. Incorvati
Managing Director
T: 973-912-6386
E: jeincorvati@kpmg.com

Joe is a managing director in KPMG’s Advisory Services practice with more than 20 years of management consulting and business experience leading and coordinating large-scale advisory engagements. He has led the planning, budgeting, execution, and delivery of enterprise fixed-asset life cycle management solutions; quality assurance, ERP and billing system implementations, customer care and portfolio, program, and project management solutions.

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.
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 control 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.
Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates.