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*Project managers
often make
unhealthy choices
in predictive analytics
deployments.
Consultant Eric
King details five
good ones for
organizations
hungry for success.*

DON'T TAKE THE WRONG BI AND DATA MANAGEMENT PATHS

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AN EFFECTIVE corporate strategy is the cornerstone of any successful organization, but many IT initiatives that could provide significant benefits are not given the senior-level attention needed. And in this ultra-competitive and still-sluggish global economy, no one can afford the luxury of thinking that issues of importance will be obvious to corporate executives. It is time to take an introspective look not only at your data, but also at inefficient or nonexistent business intelligence (BI) and data management processes that are the cracks in the foundation supporting your organizational goals.

The lead article in this issue of *BI Trends + Strategies*, written by BeyeNETWORK expert Eric King, identifies [five key practices for successful predictive analytics projects](#)—practices that many organizations are neglecting, thereby hurting efforts to gain insight and competitive advantages from the use of predictive analytics tools.

BI strategies also go astray as managers and users alike are dazzled by technology and forget about the basics, such as deciding what exactly they want to get from the tools. SearchBusinessAnalytics.com contributor Roger du Mars reports on the [common mistakes and misconceptions that hinder BI projects](#).

Not having a strategy and processes on data ownership, control and usage can affect the quality of corporate data—and have fiscal and regulatory compliance implications. BeyeNETWORK expert Kelle O'Neal closes the issue with a look at the importance of [creating a formal data governance structure](#) in organizations.



JEAN SCHAUER
Editor in Chief
BeyeNETWORK

WHAT PREDICTIVE ANALYTICS PROS DON'T DO (BUT NEED TO)

When projects fail to deliver the expected results, the culprit is often inadequate preparation. Program managers and data analysts need to first understand what it is they are getting into. By Eric King

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THE WIDESPREAD adoption of predictive analytics has been at the mercy of two opposing forces over the past two

decades. Frequent, compelling use cases from the few organizations that have properly implemented predictive analytics projects propelled the discipline into the mainstream. Yet its perceived complexity has slowed adoption.

Let's take a look at five critical things business intelligence (BI) and analytics professionals often overlook, hence depriving their organizations of the substantial [benefits of predictive analytics](#).

1 GETTING STARTED THE RIGHT WAY.

Predictive analytics is not another flash-in-the-pan technology. Most Fortune 500 companies have estab-

lished departments and practices that refine crude data into high-octane intelligence. But few beyond the largest corporations have formalized or even organized their approaches.

Why haven't more jumped into the game? There many barriers and excuses, most notably:

- Corporate executives don't believe predictive analytics can deliver net gains;
- Department heads who would have a stake in a project assume it will require a substantial investment in expensive consultants or a bench of professionals with doctorates;
- BI managers don't want to take on another initiative; and
- The business can't get ahead of the deluge of data.

Organizations are simply not getting started with predictive analytics the right way. Those that approach it like any other IT or BI project will not unearth meaningful or measurable results, and predictive analytics will be prematurely dismissed.

Yet as the flow of incoming data gains speed, organizations can't just keep pumping dollars into storing, structuring, cleansing, transforming and transporting data. They need to ultimately uncover the core value: actionable information hidden in growing data stores.

some statistical grounding and a basic appreciation of the capabilities and limitations of various modeling methods, expertise in actual model development has little impact on the success or failure of a project.

MOST ARE SURPRISED TO LEARN THAT THE BULK OF THE TRAINING NECESSARY FOR PREDICTIVE ANALYTICS SUCCESS IS NOT TECHNICAL.

2 TRAINING BEFORE DOING. Why not approach predictive analytics like most IT and BI projects—with an emphasis on technical training? Most IT projects focus on fulfilling objectives at the operational level; their functions are more direct and tactical. Predictive and advanced analytics, however, rely heavily on strategic assessment, design and implementation. For practitioners and functional managers entrenched in typical IT projects, this requires a significant shift in mind-set.

Most are surprised to learn that the bulk of the training necessary for predictive analytics success is not technical. The mathematics involved can be very sophisticated, but modern software tools automate the complexity, allowing most business practitioners to build adequate [predictive models](#) with little training. Although it's helpful to have

But it is imperative that at least one project manager or functional leader be well-versed in a formal, methodical, process-driven approach to predictive analytics—for example, the Cross-Industry Standard Process for Data Mining, or CRISP-DM—at the project level. Unfortunately, there are very few courses out there that provide this emphasis—particularly from a vendor-neutral perspective. But a search on data-mining and predictive-analytics strategic training will produce a few good options with a project-level orientation.

3 DESIGNING BEFORE BUILDING. If you were building a new house, wouldn't you first meet with designers and engineers to draw up blueprints? What would your home look like if the builder started construction

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before fully understanding your needs, preferences and site dynamics? The answer is obvious.

Most organizations start [predictive analytics projects](#) by jumping directly in with software and data and then hammer away on models without understanding what they're building. When predictive analytics is not approached as a well-planned process, practitioners may still end up building very good models, but the models answer the wrong questions and can't be properly interpreted or implemented.

A number of standardized processes spell out precisely how to plan and implement a successful predictive analytics project. Two of the major ones are vendor-neutral CRISP-DM and SAS-specific SEMMA. But vendors are primarily interested in trumpeting and selling technology. Their marketing efforts have influenced misguided organizations to listen to the loudest voices and start with the easiest-to-obtain resource: software.

Even the few companies that are aware of standardized processes are resistant to start with training and follow a formal process like CRISP-DM. When it comes to predictive analytics, nobody wants to have to sell the notion of a comprehensive assessment and resulting project definition. The exercise itself is not sexy. It requires an up-front investment of time, money and effort. And it will not produce a return on invest-

ment. But then again, neither will blueprints. They will help ensure that your house doesn't collapse, though.

4 PUTTING THE PROBLEM AHEAD OF THE ANALYTICS. Many argue that organizations should start with predictive analytics to uncover unknown insights, relationships or anomalies that may direct subsequent analysis. This approach may uncover a few artifacts of interest, but it rarely moves beyond an unsupervised exploratory exercise.

A 2009 survey of self-proclaimed data-mining practitioners by Rexer Analytics revealed a focus on the wrong part of the problem. The majority of participants cited the performance or accuracy of predictive models as the most important factor in determining success. In the real world, however, practitioners are not rewarded for how well a model conforms to artificial metrics—but rather for how effectively it helps optimize the allocation and use of organizational resources.

While discovery is a function of predictive analytics, the derived information should support the organization's priorities—and not the other way around. The first step should be establishing and validating strategic priorities across functional teams. Justifying the time to properly design an analytics project in these days of Agile BI and immediate results is not easy, but it's mandatory. A comprehensive assessment,

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formal project definition and measurement framework must be established for results that are substantive and sustainable.

5 AVOIDING DISTRACTIONS AND BUZZ.

Just as the masses moved far enough down the BI chain to embrace predictive analytics as a formal practice and start deriving value, they were diverted to the next shiny, new thing upon hearing exciting terms like *big data* and *data science*.

Seasoned BI professionals will recall how chasing hype can lead to costly exploration of uncharted, underdeveloped and oversold technology.

Vendors riding the coattails of the big data analytics buzz may argue that traditional analytics just won't get the job done in the new world of ever-swelling data sets. When real-time analysis of high-velocity, multidimensional data is required, there may be a need for computational scalability. But applications that call for in-database analytics or distrib-

uted processing are certainly not the norm.

When sampled properly, only a small fraction of the data available is required to adequately represent the *solution space*—a mathematical term describing the entire area represented by multiple dimensions—and effectively train a predictive model to produce the desired information. Once such models are deployed, running them and scoring large volumes of new data can be done highly efficiently, suiting the vast majority of business applications.

Be wary of the hype. Those who maintain the course toward predictive analytics while gradually building other aspects of their BI chains toward big data scalability are due for early payback.

So don't cheat the process. Don't rush to grab software and dive headlong into your data. It's simply not worth it, and that's been proven time and time again. If you don't succeed with predictive analytics on a small-scale pilot program driven by a sound assessment and project definition, then forging ahead into big data analytics will produce nothing more than a big noise. ■

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Check the [BeyeNETWORK Expert Channel](#) on data mining and predictive analytics for more articles from *Eric King*.

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MYTHS CURBING BI SUCCESS, MANAGERS BEAR NEW BURDEN

Talk about “miraculous” data tools and misunderstanding of “big data” are just a few of the poisons tainting business intelligence efforts in companies. The onus is on BI managers to recognize and puncture misconceptions. By Roger du Mars

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CAUGHT IN THE current of technological advances, business intelligence (BI) managers are maneuvering to deploy the newest tools while working to effectively integrate and manage disparate data. This is their pressing challenge, and it's a systemic result of our reliance on slick, sophisticated software to navigate oceans of data.

But a reliance on the newest tools and emphasis on speedily processing data can steer an enterprise down the wrong path, analysts warn, where understanding of data takes a backseat to mechanisms for collecting it. The advice for BI managers now is to regroup intellectually, worry less about the quick tech fix and focus on the integrity of data.

Analysts point to several popular

but misguided notions BI managers should treat with extreme prejudice.

■ **THE TOOL IS A PANACEA.** With high-tech processes overstepping the appreciation of data, it's often the new tool—sold as a cure-all—that overshadows the data itself. “The biggest issue with [BI implementation](#) is that people keep buying into the vendor hype that the tool is the solution, and although each generation of tools is extremely easy to use people forget that you still need the data to make use of the tool,” said Rick Sherman, founder of Athena IT Solutions in Maynard, Mass. “If your problem has been inconsistent data or data that isn't clean or data that isn't accessible, then it doesn't matter if you have a really cool tool.”

Driving the hype swirling around

new tools are the users of BI data, said Bill Brydges, a managing director and consultant at MorganFranklin in McLean, Va. "There is an expectation issue for the BI team because the vendor pitch and the technology buzz in the marketplace is that these systems will map day to day for you," he said. "The BI manager is probably painfully aware that the information that he or she can report is as good as the consistency of the underlying data, and the tools can fix some of it but can only go so far."

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■ EXTERNAL DATA REIGNS SUPREME.

The era of faster and easier coincides with "big data," an ever-growing mass of [structured and unstructured data](#) generating its own share of IT hype. BI managers, analysts say, feel pressured to provide business users with access to external sources of big data, such as social media data. But often the value of collecting such information not only fails to justify the expended efforts but also comes at the expense of mining critical internal data. Douglas Laney, an analyst at Gartner Inc. in Stamford, Conn., characterizes such underused information as "dark data."

"Most dark data assets are sitting beneath the seat of most organizations," he said. "Dark data such as documents and email are dramatically underutilized."

Overlooking in-house data spurs troublesome ramifications, ana-

lysts say, such as inconsistent data, hastily assembled documents and redundant reports. For Brydges, this contributes to wasted time.

"The main fault here, which is not necessarily unique to new-age BI, is that people are quick to grab the first data source that comes to mind or build a new report versus looking hard within the enterprise for existing information," Brydges said. "The problem this creates is multiple versions of the truth over time, and this becomes self-perpetuating because as the versions increase so does the need to create additional reports."

Moving from scattered perspectives to a unified, focused view begins with a corporate data standard—and that requires assistance from the corporate level, Brydges said.

"One of the challenges of the ready-made nature of the BI tools now and distributed BI capabilities is that people are empowered to crunch and spin the data in any number of ways at various ends of the organization," he said. "But this sometimes is done at the expense of a centralized corporate governance function that at least gets basic agreement on the major components."

■ **IT'S ALL ABOUT THE DATA.** Analysts resoundingly suggest that a cart-before-the-horse syndrome is searing through BI management

circles, with [software tools](#) driving reports to the extent that BI managers, together with business users, are assembling information without knowing what they want or what questions to ask—or even understanding the purpose of the data collecting. “Businesses typically don’t know what they want until they see it because data is complex, multidimensional and multivariable,” said Wayne Eckerson, a BI researcher at TechTarget Inc., the media company that publishes *BI Trends + Strategies*. The solution, Eckerson said, is better collaboration. “BI managers need to collaborate much more closely with business users, and that is a key critical success factor because the best teams put their developers side by side with the business people when they are developing and don’t have anybody in between,” he said.

■ **WHEN THE DATA’S DELIVERED, THE DAY IS DONE.** Often, the BI team creates reports that users don’t even look at. Laney recalls a company that complained its BI reporting environment wasn’t benefiting the business. To test a suspicion that reports were not being read, he suggested that erroneous numbers be inserted in a report. Sure enough, nobody challenged the garbage data.

Even when reports aren’t ignored, processes for using what’s in them often aren’t in place. “Many organizations aren’t prepared to take action based on what they find in the data,” Laney said. BI managers shoulder significant responsibility that the reports, which are expensive to create and support, don’t lay fallow, he said.

“In the planning stage, the BI manager should have the end users work with them to define precisely how the analytic output will be used and then ensure that the processes and training are all aligned to leverage the information.”

Laney looked to the cinema for an example. In the 1992 film *A Few Good Men*, Navy attorney Lt. Daniel Kaffee, played by Tom Cruise, confronts embattled Col. Nathan Jessup, played by Jack Nicholson, demanding the truth behind a heinous crime. Jessup bellows, “You can’t handle the truth!” It’s the same, Laney said, for companies poring over their BI data: Without the right planning and resulting collaboration, the truth can, in the end, hurt. ■

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In this information-driven age, analyzing data is more important than ever, but ensuring that it can be trusted should come first.

By Kelle O'Neal

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HIGH-QUALITY DATA is essential to timely and effective decision making, and it's critical to ensuring regulatory, legal and financial compliance. Yet maintaining such data and knowing it can be trusted is a challenge—one exacerbated by the proliferation of “big data” streaming in from mobile devices, social media, sensors and other data sources.

An even bigger challenge is analyzing and acting on all that data in real time. To address it, companies are making considerable investments to manage and integrate this information so they can gain much-needed insight into their business performance and ensure that proper fiscal and legal controls are in place. According to a report published in June 2011 by management consul-

tancy McKinsey & Co., “Simply making big data more easily accessible to relevant stakeholders in a timely manner can create tremendous value.”

As this demand for data increases, the costs to access it are also increasing. There must be some way to harness this data in a manageable, efficient way.

GET IT RIGHT THE FIRST TIME

There are many technologies to help ensure that data across systems is integrated and accessible—whether traditional databases and data management tools or emerging big data systems, such as [Cassandra](#) and [Hadoop](#). But when it comes to policy and processes, there often is a lack of clarity on data ownership, access, usage and management. As a result,

the data housed in these systems may not fit the accuracy requirements of the business. To tackle and overcome these issues, a company needs a formal data governance structure.

WHAT IS DATA GOVERNANCE?

Data governance establishes the strategy, objectives and policies for managing corporate data. It consists of people, processes and the technologies required to ensure that data is accurate, consistent throughout an organization and available to users at the right times. It employs a central structure and requires representatives from business and IT to set policies on the format and use of core business data and changes to business processes and applications. Data governance strives to make certain that companies have reliable data sets so they can assess business performance and make good management decisions.

WHY GOVERNING CORPORATE DATA MATTERS

Corporate executives have the most to gain by supporting a [data governance program](#). This is the only way to ensure ongoing compliance with corporate standards and regulations and gain greater control and lower the risk of basing decisions on poor-quality data. It brings order to the data chaos and allows corporations

to make decisions based on knowledge rather than gut instinct.

In real-world scenarios across various industries in which organizations have implemented data governance programs, companies have seen the following improvements:

- Better operational efficiency—10% in one year, building to 40% by year three;
- A 50% reduction in new project initiation costs;
- Fewer duplicate records—down 30% in one year;
- Reduction in the time it takes to bring customers on board by 50%;
- Increased ability to respond to regulatory concerns, potentially saving up to \$5 million in fees per incident; and
- The ability to extend strategic programs, such as master data management and data quality initiatives.

JOB NO. 1: TAKE A LOOK AROUND

When beginning a data governance program, examine the methods the organization is using to manage data and determine how processes can be improved. Start by asking questions: Do you have the information you need to make sound, timely business decisions? Do you have confidence in your revenue reports? Can you track your organizational key performance indicators? Are you in compliance with all laws regarding your

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governance of data? The answers will provide insight into your organization's data governance needs.

Getting started does not have to be a burden. By assessing your current [data management processes](#), you may find that data is already being governed successfully in parts of the organization and that those processes can be replicated elsewhere. Then assemble a team of people capable of making decisions about data, identify business challenges that can be faced using that data and start governing.

The operational risk and cost of regulatory compliance is too high to do nothing. Why wait for a fine before addressing your data accuracy? Why wait until your customers leave before recognizing them as a single buying entity? Be proactive. Data governance doesn't have to be bureaucratic. Start small and focus on improving data accuracy within a well-defined scope and expand the governance program as benefits are recognized and efficiencies gained. ■

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Check the [BeyeNETWORK Expert Channel](#) on agile data management for more articles from Kelle O'Neal.



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