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TECHNOLOGY BRIEFINGS
BUSINESS INTELLIGENCE

Staffing for Intelligence

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ANALYTICS KNOW-HOW

Staffing for Intelligence

Successful business analytics begins with a clear inventory of analytic resources, a solid structure and technology, and a cross-functional analytical team.

BY SANDRA GITTLEN

Increasingly, organizations of all sizes are moving from creating products and services targeting the mass market to becoming intensely customer-focused. They are heading toward a culture of making decisions based on facts and evidence versus intuition and "gut feel." Yet many of these efforts are stymied because there are not enough data professionals or a proper organizational structure in place to support business analytics.

"There is an enormous amount of data available to organizations to make decisions, but sadly not every organization has the ability to capture, interpret and act upon it. The entire IT staffing architecture is designed to process the easy-to-collect data," says Thornton May, author of the book, *The New Know: Innovation Powered by Analytics*, and executive director and dean at the IT Leadership Academy at Florida State College in Jacksonville, Fla.

While some successful companies already use business analytics to contribute to intelligent decision making, May expects that forecasting, modeling, optimization and other predictive techniques will soon enter the mainstream. As this shift occurs, he says it will become apparent that there is a dearth in appropriately trained data professionals.

"The analyst is essentially a new animal in the IT forest. It's no longer feasible to structure systems to answer questions; instead, you have to invest in people and tools that free the data to talk to you. It's a much more high-powered exercise," May says.

The state of business analytics at most companies is "a hot mess," according to May, and they often have the wrong staff or too little staff as well as incorrect structure to handle the demands of this discipline. For instance, a 180,000-person company might only have 1,000 analysts scattered throughout business units, and they usually do not collaborate with one another.

Instead, organizations need a cross-functional, analytical team with data professionals of varying skill sets to work across the organization, says Keith Collins, CTO and senior vice president at SAS. The ability to cull such talent, provide them with sophisticated and automated tools, and integrate them into the enterprise is what results in a real return on an analytics investment.

Harvesting Talent

When it comes to finding data professionals to handle the demands of business analytics, organizations have to break free from their tendency to only seek out candidates with master's of business administration degrees or hard-core statisticians. Experts fear the MBA has become too formulaic and doesn't always encourage out-of-the-box thinking required for business analytics. And statisticians can be too rigid and, therefore, deaf to the

changing needs of business.

Today, it's about more than just statistics. Data professionals need to understand how those numbers affect the business as a whole.

"We're not living in a one-right-answer world. Part of being a great leader today is listening to your colleagues and determining which data will help them make the best decisions," May says. "The analytical processes have to be consumable and usable by people who are not triple Ph.D.s in these disciplines."

This shift in focus has not been lost

MASTERS OF ANALYTICS

With analytics becoming a priority for organizations of all sizes, it's imperative that higher education institutions address analytics in their curriculum and tailor it to employer needs. That's exactly what North Carolina State University Professor Michael Rappa did in creating the Institute for Advanced Analytics and the nation's first master's of science degree in analytics in 2006. Rappa and Keith Collins, CTO and senior vice president at SAS, recently discussed the evolution of analytics education as well as its overall benefits for the field with writer Sandra Gittlen.

How has the field of data analytics changed in recent years?

Rappa: All organizations–hospitals, governments, universities and companies–are infused with data. Everything they do generates data as an artifact of business processes. Therefore, it's extremely beneficial to be able to analyze that data in real time or near real time. It can help organizations understand their business better, run them better, and understand the impact of decisions. And working with gigabytes or even terabytes of data is cumbersome and challenging.

Collins: Today, it's about more than just statistics. Data professionals need to understand how those numbers affect the business as a whole.

How had universities been meeting this demand previously?

Rappa: They really hadn't. That's why I stepped back and asked a very key question that is seldom asked: What are employers looking for in the graduates we produce? In essence, we positioned the employer as our customer and then proceeded to build the education from the ground up to target the need. They want the technical skill, but they also want people who work well in multifunctional teams. They want strong communications skills, people who can talk to management or customers. They want people who understand the business, who can drive the analysis and ask the good questions. They also want people who have experience with complex tools used today to do analytics.


Rappa

Collins: I agree, and it can get pretty frustrating because most computer science programs are still focused on transaction processing instead of analytics processing, which involves a completely different data pattern.

Dr. Rappa, is that why you developed the master's program in analytics at NCSU?


Collins

Rappa: Yes. I realized that the skill sets needed were scattered around the university in areas such as statistics, computer science and the business school. So we would need to build a new integrated education drawing upon faculty from all these fields–an interdisciplinary approach.

How involved are employers in the process?

Rappa: They are involved at all points in the program. We have an industry advisory board with 40 companies reviewing the curriculum every six months. Companies also provide data for our student practicum, which has teams of students tackling a challenging analytics business problem. Our students have worked with companies such as Blue Cross/Blue Shield of North Carolina, Hallmark and IBM. These same companies often end up seeking to hire them.

Collins: At SAS, we are very involved in all aspects of educating data professionals, not just at NCSU, but around the globe. We want to show students, who will soon be in the workplace, how our tools are instrumental in helping them succeed at analyzing and improving business processes. Therefore, we make sure they have hands-on access to our software and certifications in the university setting.

How else do you tailor your program to employers' needs?

Rappa: We work really hard on students' teamwork and communications skills. They do 40-plus hours of professional training–the kind senior-level managers would get–that includes taping and critiquing their presentation skills. They find this very empowering.

Collins: That part is critical because when they enter the workforce, they need to be able to communicate to and collaborate with the business and IT teams using a common language.

What do you see as the ideal analytics professional?

Rappa: The best universities can turn out hard-core data modelers, Ph.D.-level people. The analytics person we graduate has a wider range of talent that connects with the rest of the company, serves as a bridge between modelers or core analytic functions, and translates up the chain to other parts of the business. Our program is finely tuned to teaching them leadership and how to put all the pieces together and communicate that throughout the organization.

on universities and professional training facilities. In fact, North Carolina State University, St. Joseph's University and Boston University have all developed graduate programs to address this industry change. (For a look at NCSU's unique approach, see "Masters of Analytics," page 3.)

"We definitely see a change in the needs of our clients," says Philip Russom, senior manager at TDWI Research, a division of The Data Warehousing Institute in Renton, Wash. "TDWI members and others are moving deeper into advanced forms of data analysis, because of the constant changes forced by the economic recession. They rely on analytics to understand changes in their customer bases, supply chains, finances and operations, so they are better informed about where to cut costs, achieve compliance, adjust staffing, reach into new market segments, and so on."

This deeper commitment to advanced analytics is, in turn, forcing changes to long-standing practices in data warehousing. For example, many data warehouses are designed by their users to provide data for reports, dashboards and scorecards. Providing data for analytics is quite different, involving more source data from operational applications, without the obsessive cleansing, remodeling and aggregation that's typical of a report-oriented data warehouse. Users are adjusting by extending their data warehouses to accommodate analytic data or by setting up secondary analytic databases next to the data warehouse.

Russom says he has noticed businesses seeking out candidates who have data integration and data quality as part of their skill sets, and even within their job titles. Some, with more expansive data teams, look for governance and master data management experience to handle enterprisewide standards for data collection, analysis and use.

Preparing data for analytics requires data professionals to understand not just programming languages, but also how to build complex, scalable systems and how to spot differences in data patterns and data quality issues. And organizations want them to understand the advantages that can be gained by using enterprise-level business analytics software such as SAS, including extracting more value from data and reducing overall staffing burdens.

> Organizations need a cross-functional, analytical team with data professionals of varying skill sets to work across the organization.

Restructuring the Organization

Just as critical as finding the right talent is how companies organize that talent once they have the staff in-house. The biggest mistake organizations make is creating islands of analytic teams that operate within individual business units, because it results in redundant positions and inefficiencies throughout the organization. Yet, developing a completely centralized unit of analysts can be counterproductive because it distances data professionals from business units, says SAS' Collins.

The ideal structure is to develop a Business Analytics Center of Excellence to oversee and coordinate data professionals within departments across the enterprise. A chief analytics officer or similar sponsoring executive title could lead this effort and maintain a clear inventory of the analytics resources available throughout the company. That way, when mergers and acquisitions or other analytics-intensive projects emerge, the chief analytics officer could pool existing resources. "This structure gives you amazing flexibility in how to staff your project teams," Russom says.

The Business Analytics Center of Excellence could lead enterprisewide data governance, business process streamlining, and the setting of standards, such as which software platforms to use.

It could also serve as an educational resource, ensuring that data professionals are not the only ones who grasp the power of analytics. "With initiatives such as Six Sigma and ITIL, it's clear that beyond a core group of überanalysts, most users would benefit from a basic understanding of analytics," May says.

With the right staffing and structure, organizations will be prepared to take advantage of business analytics. According to May, "By getting the right data professionals out into your business using the right technology and involving them in decision making early on, you'll be able to get the complete value that business analytics has to offer."

Sandra Gittlen is a Massachusetts-based technology writer.

SKILL SETS

Why Business Analysts Are So Important for IT and CIOs

A new Forrester report sheds light on this little known, often misunderstood but critical liaison role that can unite the business and IT on enterprise projects, systems development and business strategy.

BY THOMAS WAILGUM

This article originally appeared on CIO.com.

For two decades, the CIO has been viewed as the ultimate broker between the business and technology functions. But while that may be an accurate perception in the executive boardroom, down in the trenches, business analysts have been the ones tasked with developing business cases for IT application development, in the process smoothing relations among competing parties and moving projects along.

According to a new Forrester report, however, the reality is less precise than this description. The business analyst position varies depending on the organization, and the line between pure business functions and IT functions has eroded.

What is clear: The most successful business analysts are the ones who blend the temperament and communications savvy of a diplomat with the analytical skills of an intelligence officer. And business analysts are a hot commodity.

The in-depth April 2008 Forrester Research report by analysts Carey Schwaber and Rob Karel provides a better understanding of this crucial yet largely undefined role. "Everyone agrees on the importance of the business analyst role," the analysts write, "but few know exactly what it is that business analysts do."

The 21st century business analyst is a liaison, bridge and diplomat who balances the oftentimes incongruous supply of IT resources and demands of the business. Forrester's research found that those business analysts who were most successful were the ones who could "communicate, facilitate and analyze."

Some business analyst positions tilt more toward business functions such as operations, marketing, finance or engineering; other analysts seem to fit better in more IT-oriented positions such as in applications and architecture groups, or in project management offices.

According to the Forrester analysts, however, not many people, including business analysts themselves, are able to figure out a standard definition (complete with typical skill sets, proper training methods and set career paths) for the business analyst position.

To better understand the business analyst function, Forrester surveyed 338 current and former business analysts and reviewed more than 29,000 business analyst job postings. What Schwaber and Karel found out is that, at present, there are "many different breeds of business analysts, each native to a particular silo within the enterprise, and each focused on addressing the most critical concerns within that silo," they write in the report, "The New Business Analyst."

The Forrester analysts also discovered that like many technology-intensive roles inside companies today, the line between a pure business analyst and a pure IT business analyst

has blurred. The waters are muddied even more because business's IT needs (such as ERP systems consolidation or enterprisewide data warehouse rollouts) span not only different departments but across entire companies. In addition, newer technology methodologies, such as services-oriented architecture (SOA), require a deep understanding of both business and IT as well as close attention to changing business conditions, write Schwaber and Karel.

So just where should a business analyst reside on an org chart—business or IT? "Although distinguishing among breeds of business analyst makes sense in theory," note Schwaber and Karel, "in practice, trends in both business and IT are forcing business analysts to assume responsibilities outside of their siloed comfort areas."

The ultimate blurring of the business-oriented business analyst and the IT-oriented business analysts, contend the Forrester analysts, is what they term the business technology analyst. And the person in this role can be a CIO's and the IT department's ace in the hole, as well as a better-equipped business liaison.

These new and converged business technology (BT) analysts, write Schwaber and Karel, are the "key to making dynamic business applications a reality by both accelerating the speed at which business applications can be changed and assuring the engagement of the business customer in these changes." BT analysts possess a blend of business and operational know-how and a high degree of tech know-how.

In addition, BT analysts have more "cross-functional and cross-domain" business experience, rather than just focusing on one area or function within the business. Schwaber and Karel predict that the different breeds of business analysts (such as solely business-focused or solely IT-focused) "will slowly dissolve as projects increasingly demand knowledge that spans business functions like marketing and sales and IT domains like process, information, and experience," they write. "As time passes, fewer and fewer business analysts will have the luxury of working only in a single business function or IT domain."

The challenge for CIOs, the analysts point out, is molding today's business analysts into tomorrow's highly evolved BT analysts. Historically, some CIOs have struggled with how to best use business analysts.

But CIOs have to do something right now to influence the crop of future business analysts because the stakes are too high. "Your future business technology analysts will be your most valuable business analysts because they can single-handedly turn business-requested, IT-delivered applications into tomorrow's dynamic business applications," write Schwaber and Karel.

To do this, CIOs and IT managers can do several things right now, the analysts say. Here are a few of the Forrester analysts' ideas:

Look in their own backyards

Those employees already working as business analysts are well-suited to the role of business technology analyst "because they're already familiar with both the business functions in question and with business analysis disciplines like process modeling," write Schwaber and Karel. "The best candidates are business-oriented business analysts who want more direct control over how business processes are automated, and IT-oriented business analysts who want to move from IT into the business."

Look for potential analysts in typically untapped areas of the business

IT executives also should try fishing in the pools of business subject-matter experts for business technology analyst talent. "Of course, business-oriented business analysts and business subject matter experts don't report to CIOs," the analysts write. "Convincing them of the value of the business technology analyst role might require some education and even evangelism."

Establish specialized centers of excellence for business technology analysts

Given the nature and demands of the role, business technology analysts will have to collaborate with a wide range of critical business and IT stakeholders. "As a result, they will likely spend their days scattered across the enterprise," note Schwaber and Karel. "To ensure that the business technology analyst role is coherent, supported and ultimately attractive, CIOs should establish a forum in which these folks can share best practices, such as a business technology analysis center of excellence."

In the end, the more business technology analysts that are working in the business, the better off the CIO and IT function will be—no matter if the BT analysts are reporting into IT or the business side. That's because those IT-savvy analysts, who will have a more in-depth understanding of and more expertise in technologies, will "ultimately help the business make better decisions when it comes to its interactions with IT," contend the Forrester analysts. And, "CIOs have new allies in the business."

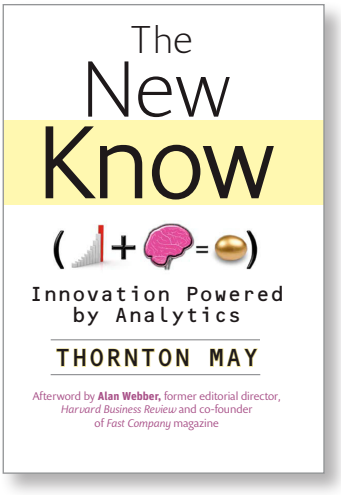
BOOK EXCERPT

New Animal in the Organizational Forest

Although analysts are the least understood and most under-the-radar animals in the modern enterprise today, these knowledge alchemists are transforming data into insight.

BY THORNTON MAY

In his book The New Know: Innovation Powered by Analytics, *author Thornton May examines analytics, and discusses why all organizations need analytics to create information-based competitive advantage. The following text includes excerpts from Chapter 3, titled "The Analyst: A New Animal in The Organizational Forest."*



We have come to that point in the evolution of civilization, society, norms of behavior, and technology adoption and use, where most of what we do creates data, leaving a trail of informational crumbs. Via some process, these crumbs somehow come to reside in data repositories, databases, and/or clouds. High-performance organizations consistently, reliably, economically, and innovatively actually do something with that data. Someone in the enterprise takes that data and does something interesting with it. The people doing some of the highest-value and most interesting things with data are sometimes called analysts. These knowledge alchemists transform data into insight.

Analysts are probably the least understood and most under-the-radar animals in the modern enterprise today. One of the main reasons for writing this book is to help mainstream decision makers better understand who these people are. This book follows a line of business bestsellers about analytics: Tom Davenport's *Competing on Analytics*, Ian Ayres's *Super Crunchers*, and Stephen Baker's *Numerati*. These are great books written by supremely gifted scholars. However, readers could come away thinking that analysts are not quite normal. For example, Baker in *Numerati* posits that the only *folks who can make sense of the data we create are crack mathematicians, computer scientists, and engineers.*[1] I don't think this is the case. Analytics and analysts should be part of the mainstream and should not be ghettoized in special Mensa zones for the mathematically gifted but socially challenged. Analysts are real people—just like you and me.

Are they all the same? Are there separate and distinct analytical "tribes"? Do different types of analysts play well with each other? Do they play well with the rest of the animals in the organizational forest? Over the past two years, I did a walkabout in the Global 2000 (the top 2000 public companies in the world) conducting what many might consider a low-intensity ethnographic study of analysts. I essentially studied the analyst habitat. Where do they come from? Where do they live in the organization? How are they treated?

In this chapter I ask the question: Who are the analysts? Western societies have used anthropology as a mirror of sorts that allows and encourages a better understanding of ourselves through the study of others. By borrowing and bastardizing anthropological techniques, I hope to help nonanalysts come to a better understanding of the analysts' world and how it works. I collected a lot of data about a lot of analysts through extensive interviews. When quotes

1. Stephen Baker, *The Numerati* (Boston: Houghton Mifflin, 2008), 5.

are presented in the chapter without attribution, they come from those interviews. This data revealed that the practice of analytics has evolved over time. Analytics and analysts of today are materially different from those of 10 years ago.

... My objective is to reveal, unmask, or unwrap the *real* analyst. I do this by accumulating comparative data from a series of field studies and interviews in different areas of the analytic community.

In anthropology, fieldwork is often used to expand the understanding of others, close or distant. Fieldwork usually means living with and living like those who are studied. I did not do this. In a vague way, of course, we are all field workers whenever we must make sense of strange surroundings and pass on our understandings to others. In its broadest, most conventional sense, fieldwork demands the full-time involvement of a researcher over a lengthy period of time and consists mostly of ongoing interaction with the human targets of study on their home ground. I did not go native with analysts, but I did spend a lot of time in the field with them, hoping to discover their cultural practices and attitudes. Who knows—after reading this book, anthropologists might come to recognize and appreciate analytics as an area worthy of more detailed anthropological inquiry. I went out into the field looking for general patterns. I sought to better understand:

- What do analysts do?
- Where/how do analysts spend their time?
- What does the rest of the organization think analysts do?
- Where did analysts go to school/what did they study?
- What was their first job?
- How are they evaluated?
- What does an *analytical* career path look like?
- What motivates analysts?
- How do analysts think (about themselves, about others, about problem solving in general)?

What Do Analysts Do?

We asked all analysts we encountered to explain, in their own words, what exactly they did. Their answers, in alphabetical order, include: Answer questions from the business; Build databases, data marts, data warehouses, models; cleanse data, collect data; conduct data mining, primary research via focus groups, predictive analytics ... risk management; generate major routine reports, assertions. ...

According to the Institute for Advanced Analytics at North Carolina State University, the term "advanced analytics" covers a broad spectrum of activities, including data collection and integration, statistical methods, and complex processes for enterprise-wide decision making.[8]

... A debilitating misconception by many outside the practice of analytics is to assume that all analysts do is "crunch numbers." ... Storytelling is a big part of analytics. After you crunch the numbers, after you generate insight, you have to do something with it. Analysts need to figure out what are we going to do with what we know. What recommendation can we put together to actually make a difference? Some of the information emerging from the analytic engines and processes is neat to know but has no operational impact. But certain insights do have ramifications to mandate change in a tactic or a strategy.

Understanding Customers

Without a doubt, some of the most intensive use of analytics is in marketing, specifically analysis of customer data.

Eric Williams, the chief information officer (CIO) at Catalina Marketing, shared a fabulous example of using analytics to better understand and reach customers. As many readers know, soymilk has become quite the thing these days. Manufacturers of soymilk would like to intelligently target all consumers that they believe would be interested in the product.

The marketing team for any product is responsible for finding out who the target audience is. Is it females between 25 and 35? Is it kids or families with kids? Initial marketing for soymilk focused on consumers identified as being interested in their health. Evidently soymilk is one of these products that you like or you don't like. There is really no middle ground. But if you like it, you will constantly continue to use it.

... The soymilk manufacturer wanted to identify customers who are buying milk or cream to lighten their coffee, not to drink. The Catalina system could easily identify the people who bought milk, the people who bought coffee, and the people who bought milk *and* coffee. But how in the world could it determine how people used the milk after they got it home?

The Catalina analytics team went to work trying to figure this out.

8. http://analytics.ncsu.edu/

Catalina has a program called behavior-activated research. In many retail outlets, the bottom of the receipt tape asks you to go to a Web site to participate in a survey. Catalina printed offers to customers to participate in a survey based on their buying a certain product that it wanted to know about. Williams explains:

> *We printed an offer to give customers a $10 gift certificate good at the retailer where people bought fluid milk. We printed tens of thousands of offers. We had set up an interactive voice response Web site, asking them some basic questions. Somewhere buried in the question script was one that says, Do you use milk to lighten your coffee? Those that did were asked to respond to a number that was printed on the Catalina voucher, which gave us the ability to link the responses of this survey back to the transaction. Now we had a set of customers that answered the question affirmatively, that they did use milk to lighten their coffee. We could now take that subset and throw it at the data mining algorithm and say—tell me things about these customers that are common. We then executed the marketing campaign for the soy product and had some of the highest redemption rates we've ever had. So, we predicted who actually used milk to put in their coffee and not just to drink.*

... All retailers have as one of their long term goals the desire to keep people loyal to their store. Is there—via the wonders of analytics—a way for a retailer to know when a customer is on the cusp of defecting and to do something to circumvent that decision? Analytically here you are asking two questions: How do I know if a customer is going to leave my store? What can I do about it?

... Consumer intelligence is a critical and foundational tool that needs to be demystified. Data mining in general and consumer behavior analysis need to be taken out of the black box. We need clearer and simpler ways for everyone in the enterprise to understand what customers think/do/want. We need to render the link among profit/mission success, consumer behavior, and internal process transparent.

"It is good to know stuff, and it is even better to know how to know. That is what analytics is all about."

THORNTON MAY, AUTHOR OF *THE NEW KNOW: INNOVATION POWERED BY ANALYTICS*

Evolution of Analytics

Even though analytics has been around for a while, the language about analytics has yet to mature.

... Michael Rappa is the founder and director of the Institute for Advanced Analytics at NC State, which runs the MSA degree program. Prior to joining NC State, he was a professor at the Massachusetts Institute of Technology for nine years. Rappa believes that the environment has changed so much that a new graduate degree was needed.

> *... Rappa helped me understand that in the old days, most data sets were handcrafted. Analytics was something you thought through in advance. You preconceived how you were going to analyze the data. On an* exante *basis, you knew what results you were seeking to gain and what you were trying to understand. Today's data is not so neatly structured. Just about everything you do and every process in the enterprise generates data, continuously and in massive quantities. Whether you want to analyze it or not, it generates data. The question for executives and students alike is: How are we going to analyze this data? ...*

Analyst Brand

Those who do analytics in the enterprise often are stereotyped inappropriately as geeks. Anthropological research indicates that a given group's awareness of who they are and what they are doing is conditioned by their understanding of other people's awareness of who they are and what they are doing. Maine fishermen alter their work habits to suit what they imagine to be the tastes and preferences of Japanese tuna connoisseurs.[12]

... One area where underfunding really gets in the way of being able to get full value out of analytical investments/activities is data quality. Several senior executives said they were uncomfortable trusting the

12. Robert J. Foster, *Coca-Globalization: Following Soft Drinks from New York to New Guinea* (New York: Palgrave/Macmillan, 2008), xvi.

outputs of various models, independent of how expertly created they might have been, because of inaccurate data.

Education of Analysts

Anthropologists examine the knowledge an individual has to have to function as a member of the culture. They ask, *What does a person have to know to be considered a part of the group?* Michael Rappa believes that the world has become so data intensive that new skills are needed—there truly is a New Know:

> *We have all this data, now we really have to get it in the structure where we can analyze it. And now I think we're at the point where we need the people who have the skills to really understand the kind of analytical problem that this is and to be able to apply those tools intelligently and address the problems that our organization faces. The reason that we created this particular degree [the master's of science in analytics] was that realization that there was going to be a critical shortage of the kinds of people who understand enough about the data, and enough about the tools and methods to be able to apply them intelligently.*

Career Path

The more time I spend in the analytic habitat, the more convinced I am that independent of where a person might start his or her career, successful careers always end up in analytics. It is good to know stuff, and it is even better to know how to know. That is what analytics is all about. Analysts who experience accelerated career success share three characteristics:

1. They work in an industry that understands the power of analytics.
2. They work in an enterprise that understands that analytics is a key source of competitive advantage and performance excellence.
3. They work for a boss who gets it.

This is the career trifecta.

Another key element of analytical career success is either having a good relationship with IT or being self-sufficient in IT. Sometimes it helps to be both. George Jackman, director of applied insights and shopper marketing at Welch's, took an IT sidetrack to lead the process development and automation of the process for sales, planning, trade fund management, and analytics.

... Analytics is a pretty safe place to be career wise. Analysts are rarely fired—they are attritted. *U.S. News & World Report*'s guide to the best careers published in December 2008 lists data miner as one of a dozen ahead-of-the-curve careers for 2009.

Motivation

Analysts and analytics are all about making the enterprise better. Time after time we heard people mention reducing the time required for businesses to access the data needed to run the business. Rosalee Hermens, who as CIO frequently champions important analytic projects at Timberland, is passionate: "I set out to do whatever it takes to help us get information that actually gets us into the place where we can do things better."

A big motivator for most analysts is the quest to ask the right question. Isidor Rabi, the Columbia University Nobel Prize–winning physicist, told interviewers of an early influence on his sense of inquiry. When he returned home from grade school each day, his mother did not ask "Did you learn anything today?" but "Did you ask a good question today?"

Managing Analysts

Analysts' roles span from entry level to executive management. Their functions involve planning, execution, and collaboration. A major subset of analysts' work (typically about 60% of analytics) is project based. There are short projects and long projects. At a clothing retailer, some of that project work might be with the catalog business: helping the company assess the effectiveness of the catalogs, creating insights so it can get more productive with mailings. Some is operational: people who actually are managing/overseeing the systems and processes whereby data is collected.

... Analytics, like many technical disciplines, frequently faces the problem of an inverted age/expertise hierarchy. In a slowly changing society—which is to say in almost all of human history—older people, while they may not run as fast or even think as fast as younger people, know more. So it makes sense to have institutional structures in which, on average, older people have authority over younger people.

As the rate of change increases, so does the rate at which knowledge depreciates. The head of the research department knows much more about

vacuum tubes than the young engineers whose work she supervises, but they are not researching vacuum tubes. But the faster the world is changing, the more ignorant the people in authority are likely to be, hence the more likely to make serious errors in their decisions.

... Analysts are frequently misrepresented as cubicle-dwelling, heads-down wonks. Successful analysts maintain their credibility with the business and make constant deposits into their credibility bank by maintaining an informed perspective on the business and on the industry. One analyst explained, "I try to read everything I can get my hands on. What is the industry news? I process press clippings every morning. I see what the competition is up to, what we are up to."

An important though not publicly discussed aspect of the analytics game (at least 5 percent of total time) is making senior, senior management look really, really smart. This frequently involves working with the chief marketing officer (CMO) who in the course of trying to analyze the major shifts in a particular market typically has a couple of burning analytical questions. These questions arrive at the analytics department, which scrambles to pull together the data, perform an analysis, and generate insights. A scenario frequently played out in the apparel industry has the CMO taking the insight, interpreting it, and socializing it at the executive level.

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THORNTON MAY, AUTHOR OF *THE NEW KNOW: INNOVATION POWERED BY ANALYTICS*

Analytics Everywhere

Analytics is not only a C-level undertaking. Ahead-of-the-curve practitioners embed analysts and analysis throughout the enterprise. In 1986, NetJets pioneered the concept of fractional jet ownership, giving individuals and businesses all the benefits of whole aircraft ownership and more at a fraction of the cost. Today NetJets is the world-wide leader with the most owners, the most experience, the largest fleet, and is laser-focused on safety. From an analytics perspective, they have "data stewards"—they live in the business. Across the company there are 30 data stewards. Essentially they are analytic type folks. They are looking at data and doing trending to generate a management dashboard.

To me there is analytics, dashboards, decision analysis—there is a place for that stuff. Line managers need data with which to manage. You can't manage what you can't measure. There are those kinds of things. Then there are the parts I get really excited about: the proactive part of this. Where you are taking the data and you are actually taking those people who are thought to be the most complex thinkers in the organization and we are taking the tasks that they did repetitively and modeling that from a logic perspective using mathematics and algorithms—and we are producing results that are actually better than the people who were doing it—the quote unquote experts. ◗

Editor's Note: Only the footnotes that pertain to the excerpts are included here. See the book for the full listing of footnotes 1–13.