

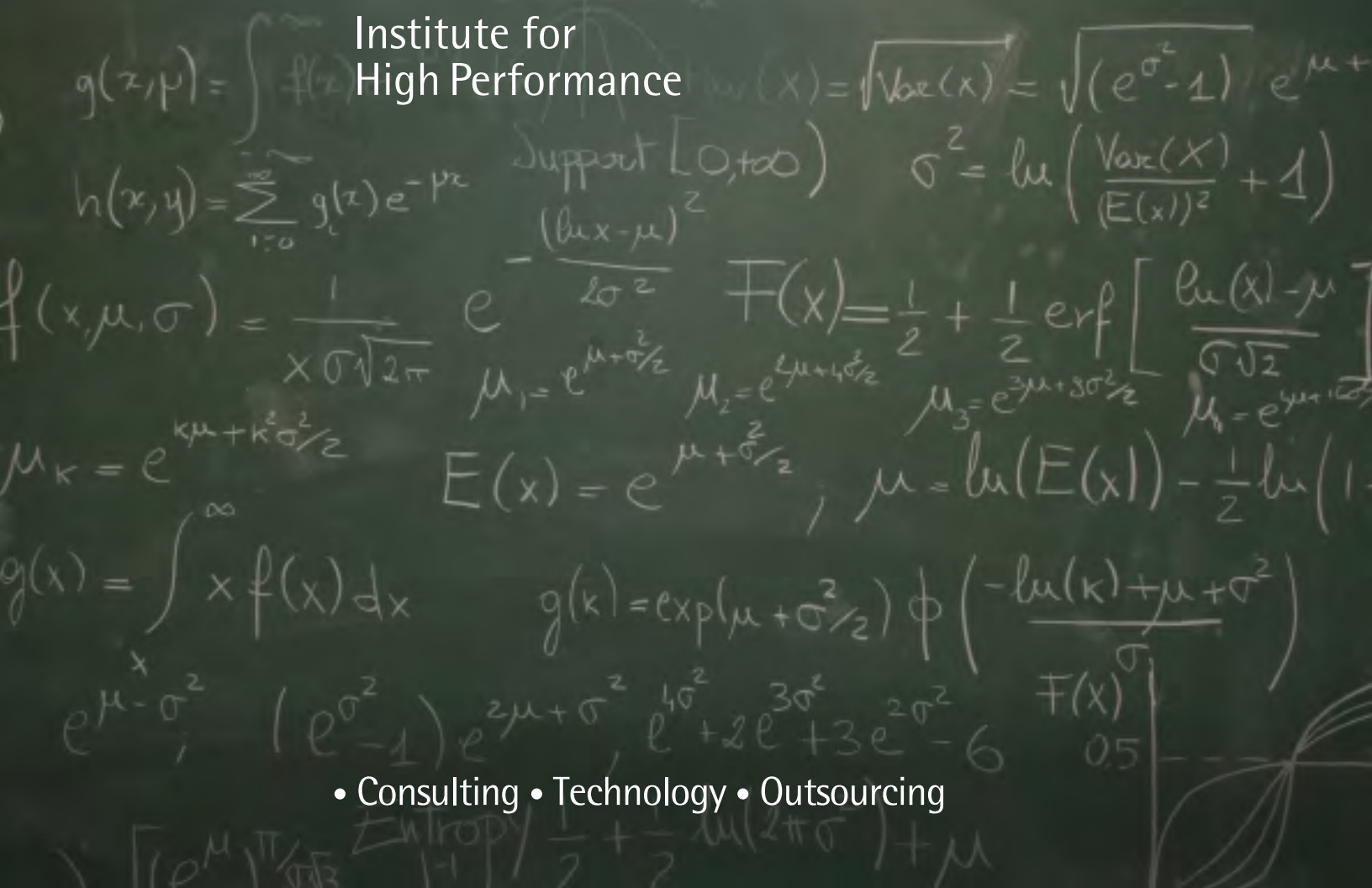
# Counting on Analytical Talent

By Jeanne G. Harris, Elizabeth Craig and Henry Egan

March 2010



Institute for  
High Performance



• Consulting • Technology • Outsourcing

# Contents

Executive Summary .....	3
How to Create a Talent-Powered Analytical Organization .....	7
How to Organize Your Analytical Talent .....	17
How to Engage and Retain Your Analytical Talent .....	27
About the Research .....	40
About the Authors .....	46
Notes .....	47

# Executive Summary

Companies are increasingly turning to analytics to gain a competitive edge. As they do, they must resolve unique demands on their information technology, their structure, their processes, and their culture. Most critical, however, is the challenge posed by analytical talent, the people at all levels who help turn data into better decisions and better business results.

In this report, we explain how companies are harnessing the “talent power” of their analysts, organizing them most effectively, and keeping them engaged for the long term. For companies that want to succeed with analytics, it’s essential that they recognize analytical talent as a distinct workforce, and manage them in accordance with their growing importance.

Are your analysts working on your most important problems? Are they turning operational data into insights you can act on to outperform your competitors? Can you count on them to help you make better decisions?

The answers may lie in how well you are managing your “analytical talent.” These are the people who use statistics, rigorous quantitative or qualitative analysis and information-modeling techniques to shape and make business decisions—the “quant jocks,” “math brainiacs,” “Excel ninjas” and other analysts who bring you the data, the quantitative analysis and the statistical models you need to improve decisions about everything from new product offerings to marketing investments.

And more and more, such people matter to performance because analytics itself, as a way of making smarter business decisions and getting better results, matters more and more. In a recent Accenture survey of executives at large companies in the US and UK, nearly three-quarters of participants said they are working to increase their company’s use of analytics.<sup>1</sup>

For these reasons, more than two years ago, we began studying analytical talent as a distinct group. One of us, Jeanne, was already a worldwide expert on analytics, having just published a groundbreaking book, **Competing on Analytics**, on how organizations use data-driven insights to generate impressive business results.<sup>2</sup> And she was already

hard at work on the follow-up, **Analytics at Work**, which reveals how organizations can effectively deploy analytics in their day-to-day operations—one business decision at a time.<sup>3</sup> Elizabeth, meanwhile, had studied talent for years, as a professor and then as an Institute researcher and co-author of **The Talent Powered Organization**, which explains how companies can transform talent management from a supporting function to an essential competitive capability.<sup>4</sup> Henry, our third author, was in fact our own analytical talent, adept at making sense of large quantities of data and deriving insights from the results.

Having assembled this team, we started with some basic questions about these increasingly important employees: Who are they? What motivates them? What makes them effective? How well do companies manage them? We interviewed dozens of executives in analytical organizations and surveyed more than 1,300 employees to investigate these questions.

What we found was surprising.

First, we learned that companies neglect this group. They don’t see analytical talent as a distinct and valuable workforce—and they certainly don’t manage it as such. Analysts are often scattered throughout departments; many companies don’t have a clear picture of who their analysts are or where they reside organizationally. In fact, most companies have many different job descriptions for similar analyst roles—if they have them at all. As a result, performance expectations and measurements are vague or

inconsistently applied. And analysts’ daily work activities are not always aligned with the strategic goals of the organization. This is a recipe for disaster when it comes to attracting, engaging and retaining analytical talent and building an organization’s analytical capability.

How can companies overcome this neglect of analytical talent and get the most out of this critical workforce? As we discuss in part one of this report, the key is to take an enterprise-wide approach to managing analysts. We discovered that the most successful companies create a talent-powered analytical organization by building four talent management capabilities: defining analytical talent needs; discovering new sources of analytical talent; developing analytical talent; and deploying analytical talent effectively. In doing so, they not only address the strategic and operational needs of the business but also unleash their analysts’ talents to continually expand the company’s analytical capabilities.

Second, we learned that companies often struggle with how to organize analysts. Should they be centralized or decentralized? “Charged out” to the rest of the business as consultants or made available as a free resource? Where and to whom they should report? Most companies use one of five models to organize their analysts, often depending on the organization’s

relative degree of analytical sophistication. But their choices are often problematic. When companies don't get it right, their best analytical minds are relegated to conducting simple analyses or working on low-value projects rather than building robust models to solve the most challenging business problems. Worse still, that type of work is a sure recipe for analyst disengagement and defection.

As we explain in part two of this report, our research revealed that companies that want to build a strong analytical workforce are best served by greater centralization and coordination of their analytical talent. Doing so ensures that analysts are working "close to the business" on the most important initiatives and also "close to one another" to coordinate their efforts and to promote mutual learning and support. It also ensures that analysts have the kind of meaningful work and career opportunities that are critical to their engagement and retention.

The third surprising discovery of our research was that while analysts are motivated by many of the same things as other employees, some things are uniquely important to analytical talent. Three things are essential for engaging and retaining all employees: Companies need to provide meaningful work and career opportunities, support people's efforts as well as their need for recovery and renewal, and cultivate a culture of trust and respect. But analysts have a different view of what makes opportunities meaningful, what kinds of support are essential, and what

cultural factors matter most. Analysts are most engaged when they understand the business side of things as well as the analytics, when they know what is expected of them, and when they can keep their technical skills and expertise current. They are most likely to stay when they have a high degree of management support. We examine what engages analysts, and what makes them likely to stay with an organization, in part three of this report.

As companies continue to seek competitive advantage and ways of differentiating themselves, they will be counting on analytical talent more than ever. Your company's success with analytics hinges on its ability to effectively manage analysts, so you need to understand what makes them tick. This report won't tell you everything you need to know, but it will get you started. Regardless of whether your company routinely uses analytics as a distinctive business capability or is just beginning to develop analytical aspirations, the care and feeding of analytical talent is critical to your success.



# How to Create a Talent-Powered Analytical Organization

Successful companies have learned how to harness the power of this increasingly important kind of talent. To get started, you have to recognize the “quant jocks,” “math brainiacs,” “Excel ninjas” and others who regularly work with data as a distinct workforce—one that is pivotal to an organization’s success. Our research reveals that generating talent power with this workforce comes from building four key talent management capabilities.

Few companies manage analytical talent as a strategic resource. Because analysts are often scattered throughout the organization, many companies don't even have a clear picture of who their analysts are, where they reside organizationally or exactly how many they have. They certainly don't recognize or manage them as a distinct and critical workforce segment that requires its own recruiting strategies, training and development plans, career paths or performance management processes. In fact, more often than not, companies have many different (or poorly written) job descriptions for similar analyst roles—if they have descriptions at all. Performance expectations and measurements are vague or inconsistently applied. And analysts' daily work activities are not always properly aligned with the strategic goals of the organization.

This is not just poor HR practice; it's a recipe for disaster when it comes to attracting, engaging and retaining analytical talent and building an organizations' analytical capability—a goal that many large companies aspire to meet in the near future.<sup>5</sup>

Our research sheds light on how to overcome this neglect of analytical talent and to get the most out of this increasingly critical workforce (See the Appendix, "About the Research"). Through dozens of interviews with senior executives in successful companies and an extensive survey of analysts from a wide range of industries, we discovered that the most successful

companies create a talent-powered analytical organization by building four key talent management capabilities:

1. Defining analytical talent needs: What types of analysts do you need?
2. Discovering new sources of analytical talent: Where do you find top analysts?
3. Developing analytical talent: What skills do analysts need and how do you build them?
4. Deploying analytical talent: How do you create the best possible match between analysts' skills and business demands?

What distinguishes talent-powered analytical organizations isn't just the quality of their analytical talent: it's

their ability to unleash their analysts' talents to maximize and continually expand the company's analytical capabilities. Here's what you need to know to create your own talent-powered analytical organization.

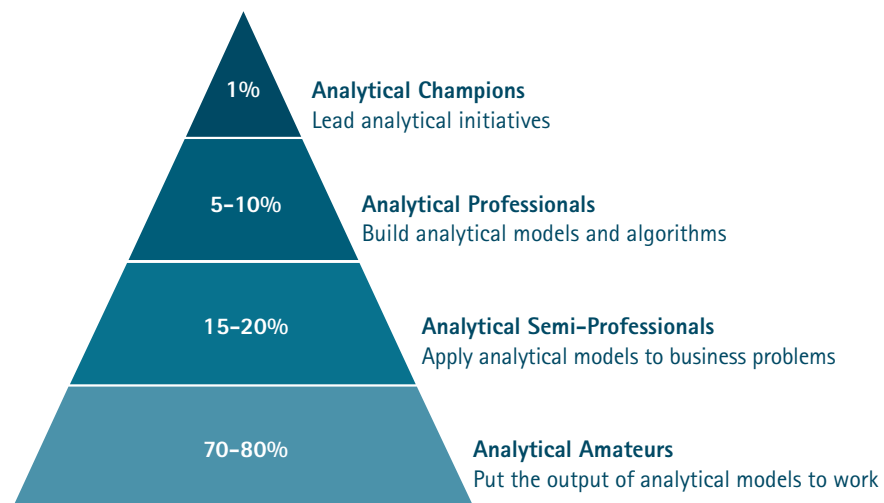
### Define your analytical talent needs

This step requires a deeper understanding of the variety of analytical roles and the types of analytical talent. In a large corporation, hundreds of employees have the word "analyst" in their functional titles.

We define "analysts" as workers who use statistics, rigorous quantitative or qualitative analysis and information-modeling techniques to shape and

### Types of analysts

Percentages represent the proportions of different types of analytical talent in a typical organization.



make business decisions—still a broad range of activity. In our research and experience with dozens of analytically oriented companies in many industries, we've determined that successful analytical organizations need four types of analytical people: champions, professionals, semi-professionals and amateurs.<sup>6</sup>

### Champions

Champions are senior executives who rely on rigorous data and analysis to run their business units. They are responsible for aligning analytics with business strategy. In some organizations, like insurance companies and risk management firms, executive titles such as "senior vice president of customer insight and analytics" or even "chief analytics officer" are not uncommon. Champions are the leading advocates and advisers on how analytical techniques and technologies—such as trend-mapping and forecasting, predictive modeling and enterprise-resource planning systems—can be used to guide decision making.

An appreciation of analytics, rather than a wealth of technical know-how, is the central requirement for this role. As a result, while some champions have deep technical knowledge and the academic credentials to match, the majority come from a business background. (See "Help Wanted: Analytical Champion.")

### Professionals

Professionals possess the deepest quantitative skills. They are the chief architects of analytical applications, developing the statistical models and algorithms used by others in the organization. Professionals typically employ complex techniques—such as trend analysis, classification algorithms, optimization and simulation—and have advanced technical skills, including coding C++, SQL and SAS.

These jobs require an advanced degree (often a Ph.D.) in a quantitative field, such as statistics, mathematics, economics or operations research, or a specialty degree in a field such as biostatistics, informatics, genetics or applied physics. (See "Help Wanted: Analytical Professional.")

### Semi-professionals

Semi-pros are responsible for applying the models and algorithms developed by professionals. The majority of financial and marketing analysts are semi-pros. They may be sophisticated analysts in their own right, and may develop applications on occasion, but their primary role is to apply analytics to business problems. They are experts in data collection, interpretation and use. Semi-pros are adept at working with analytical applications, visual tools for information analysis and "what-if" tools, including marketing workbenches and models for financial planning, pricing or forecasting sales. They are the primary users of statistical software packages, such as SAS or SPSS, or enterprise systems like SAP.

At the interface between analytics and the rest of the business, semi-pros need to be able to translate the results of analyses and the benefits of analytics into layperson's language. Some semi-pros are primarily business analysts, such as MBAs with quantitative orientations. (See "Help Wanted: Analytical Semi-professional.")

### Amateurs

Amateurs' primary focus isn't necessarily analytical. Nevertheless, they need to understand analytics to do their jobs. Amateurs might include a call-center employee who relies on a "next best offer" recommendation in order to serve a customer effectively, or a regional manager for a hotel chain who monitors and occasionally overrides the company's revenue management system.

They are typically businesspeople who can enter and manipulate data using Microsoft Excel spreadsheets and other basic information management tools and then put the output of analytical models to work. The title "amateur" is not meant to suggest that these are junior employees. In fact, they include many of the most influential employees and executives in your business. (See "Help Wanted: Analytical Amateur.")

## Help Wanted: Analytical Champion

### Director or senior vice president of client analytics

#### Job Description:

- Lead the development of a robust analytical environment
- Manage all client analytics projects to ensure timely delivery of deep client insight
- Develop knowledge infrastructure to support client development
- Provide analytical and statistical consulting as required
- Perform trend analysis to support decision rationale
- Direct the design and implementation of Client Satisfaction Measurement programs

#### Requirements:

- Minimum of 10 years work experience, the majority of which should be in an analytical role within a large financial services organization; experience in managing an analytical team is preferred
- Proven experience in independently developing robust statistical models
- Superior hands-on knowledge of data-mining and business intelligence tools, particularly SAS and SQL

## Help Wanted: Analytical Professional

### Lead artificial intelligence—data mining engineer

#### Job Description:

- Responsible for research, design, prototyping and support of intelligent information processing applications
- Responsible for both application and research across a broad range of AI technologies: data mining, natural language process, human centered design, learning and intelligent systems, and information semantics
- Must be able to design, prototype and support intelligent information processing applications with primary focus on data-mining components and integration and evaluation of statistical analysis technologies

#### Requirements:

- PhD strongly preferred, with 5 years of work experience
- Strong skills in data mining and the intersection with other technologies such as signal and image processing—statistical classification models, clustering, time series data, handling huge data sets, etc
- Ability and desire to lead technical project teams
- Ability and desire to meet with customers, understand their needs, and generate appropriate, innovative technical solutions
- Programming ability is desirable: C, Matlab, Java, Perl, Unix/Linux

## Help Wanted: Analytical Semi-professional

### Manager, market research

#### Job Description:

- Manage all marketing tests and analysis including market-based analysis, field, direct mail and e-commerce tests.
- Define test objectives, key metrics, and test parameters; assure that tests are planned and executed effectively to maximize confidence in results.
- Interpret results and recommend strategies, segmentations and programs to enhance customer insights and identify untapped market demands.

#### Requirements:

- Bachelors Degree, preferably in a quantitative field.
- 5+ years experience in a testing and measurement or data analysis role within an in-house consultative research organization or agency.
- Proficiency in SAS or SPSS
- Masters degree strongly preferred.

## Help Wanted: Analytical Amateur

### Supervisor, distribution plant

#### Job Description:

- Monitors throughput, volume fluctuations and labor utilization to ensure smooth distribution operations. Ensures appropriate staffing to meet new business requirements and volume fluctuations.
- Operates within established budgets, forecasts, cost objectives and service levels to control expenses. Supports implementation of cost, quality and service improvement initiatives.
- Supports all established plant and distribution goals and objectives. Apprises manager of team progress and any obstacles.
- Ensures effective and timely communication of company, plant and department information to managers, peers and work team.

#### Requirements:

- Strong leadership, team-building, and problem-solving skills
- Ability to coach and mentor employees
- Ability to provide technical leadership

How many analysts of each type you need will depend on your industry, business strategy and the analytical orientation of your company. The challenge is to manage the types in a way that reflects the unique contributions they make to the organization's performance. (See Figure 1).

When managing an analytical workforce, remember that the pros and semi-pros are the ones who create the most strategic value for your company. Champions are important: They provide the leadership, direction and impetus required to execute analytical strategies. But they are few and far between. And while amateurs may use data and analytics to perform their everyday jobs, they do not possess the rare and valuable specialized skills that are the lifeblood of the analytical organization.

As you start to think through how to manage analytical talent more strategically, you should focus your efforts on your ranks of pros and semi-pros. These scarce and highly-specialized workers are critical to maintain your organization's analytical capabilities, and they are also among the most challenging to attract, develop, engage and retain. Because of their value to the firm, you can't simply manage them the same way you manage the rest of your employees. You need a differentiated, strategic, enterprise-wide approach to these specialists.

Let's take a closer look at how companies can manage these groups most effectively.

### Discover new sources of analytical talent

As you start to ramp up your analytical capabilities, it's inevitable that demand for analytical pros will outstrip supply. In order to manage this imbalance, you can give certain analytical initiatives priority over others and train front-line staff to carry out basic analyses. Yet at some point, to boost the supply and increase the quality of your analysts, you'll need new strategies for locating and attracting the necessary skills.

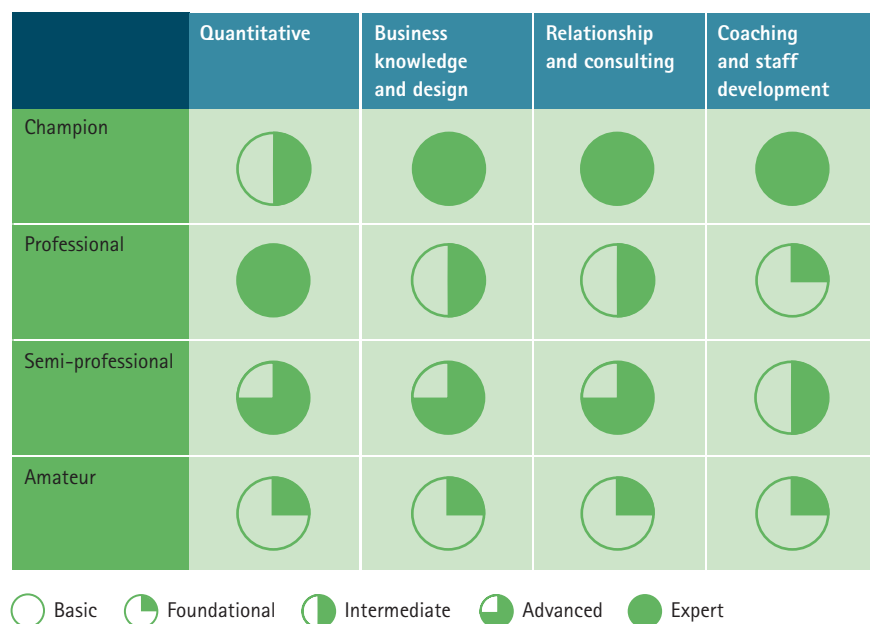
#### Look inside your organization

If your company has just started using analytics to create business value, you should first look inside your organization to identify the analysts you've already got. Scan the functions and business units where you'd expect to find quantitative talent—those that traditionally use analytics most, such as finance, IT, sales and customer service. However, don't stop searching there. While the majority of analytical pros and semi-pros will be found here, analysts are likely to be widely dispersed across the business.

Consider Bank of America, which began its efforts to better manage analytical talent by characterizing a subset of its job descriptions as "analytical." The bank ultimately identified more than 2,000 analytical professionals, semi-pros and amateurs. The outcome of such an assessment can help an organization reorganize its analysts or focus on recruiting and training to fill analytical skill gaps.

**Figure 1:** Typical skill proficiency levels by type of analyst

Few analysts possess the full range of skills needed to plan and execute major analytical initiatives. Therefore, companies need the right mix of analytical talent.



### Look beyond your organization

You can readily find analytical pros and semi-pros where they naturally gather: at analytics conferences like INFORMS (the operations research society), vendor-sponsored meetings and alumni organizations. Many analysts tend to live near universities with strong quantitative programs or in major financial centers, where their skills are in high demand. Advanced skills can also be found on social networking sites like LinkedIn, specialty search firms and websites such as [quantfinancejobs.com](http://quantfinancejobs.com) or [quantster.com](http://quantster.com). Poaching top analysts from high-performing competitors has also become commonplace.

To secure an ongoing supply of pros and semi-pros, you might forge links with top graduate schools. Sponsorships and internships can help build close relationships with academic institutions. Dow Chemical, for example, enjoys a long-standing partnership with Central Michigan University and hires many of its graduates. Similarly, SAS endowed a "Masters in Advanced Analytics" program at North Carolina State.

If you can't recruit the analytic talent you need directly, consider outsourcing some of your analytic work. An operations executive from a U.S. retailer explains why that approach suits his company: "The forecasting group involves very technical kinds of skills and experience, and so I prefer having a resource that can provide me with the very best people on an ongoing basis and has a bigger pool of talent to draw from."<sup>7</sup>

In the past, companies usually outsourced analytical work to specialist firms in North America or Western Europe. But given the talent shortage in these markets, businesses are increasingly looking for help in emerging markets, such as China and India. Often dismissed as vast pools of cheap number-crunchers, these markets are becoming excellent sources of talent as they gain the capabilities and experience to carry out some of the most complex analytical tasks. Wachovia Bank enlisted Genpact, India's largest business process outsourcing firm, to provide investment banking analysis and other analytics for the bank. By 2011, we estimate that the majority of the offshore market for analytics delivery will be based in India.

Some of your most talented analytical professionals don't even have to be on your payroll. Companies like P&G, Amazon, Eli Lilly and Solvay are finding creative ways to harness analytical expertise through virtual collaboration and crowd-sourcing techniques. For example, they are using Web-based "idea marketplaces," such as [www.Innocentive.com](http://www.Innocentive.com) and [www.NineSigma.com](http://www.NineSigma.com) to post requests (and rewards) for solutions to their trickiest analytical problems. And Netflix held a competition that offered a top prize of US\$1 million to anyone that could improve—by at least 10 percent—the accuracy of Cinematch, its movie recommendation algorithm.<sup>8</sup>

### Develop your analytical talent potential

Analytical work requires specialized skills, and the skill requirements change rapidly as new analytical tools and techniques emerge. You must keep your analysts' technical skills up to date. But the ability to tune a regression equation or manipulate a spreadsheet is only the beginning. Effective analysts are proficient not only with data but also with people. Therefore you must invest in developing the softer skills analysts need to succeed, as well.

#### Quantitative and technical skills

These are the foundation. Naturally, analytical professionals have more quantitative expertise than semi-pros, champions, and amateurs, but all analytical people must be proficient in the numerical disciplines specific to their industry or business function: stochastic volatility analysis in finance, biometrics in pharmaceuticals and informatics in healthcare firms, for example. Analysts must also know how to use the software tools associated with their type of analytical work, whether it be to build models, define decision-making rules, conduct "what if" analyses or interpret a business dashboard.

One obvious approach to developing quantitative and technical skills is to provide specialized training. At Procter & Gamble, for example, the central Product Supply Analytics group offers a course, "Analytics with Spreadsheets." The trucking firm Schneider National's central analytics group offers courses such as "Introduction to Data Analysis" and "Statistical Process Control in Services."

### Business insight

Analytics doesn't happen in a vacuum. In order for people to know where and how best to apply their analytical skills, they need to understand the strategy for their business, function and even department. They also need to understand the organization's core capabilities and how analytics can create value for the business.

One way to increase your analysts' business acumen is through developmental assignments. Be sure to expose your analysts to the various business units and functional areas across the company so they learn about the company's main business challenges and work processes. E&J Gallo Winery rotates its analytical pros between different business units and functional departments during 18- to 24-month tours of duty. As they analyze grape supply, develop new customer segmentation models or perform supplier analyses, these quant jocks become savvy at identifying opportunities for analytics to help the business.

Semi-pros (and even amateurs) need to continually hone their business knowledge and skills to avoid the sometimes costly errors that are surprisingly common. (Experts estimate that between 20 percent and 40 percent of all spreadsheets have errors—some catastrophic.<sup>9</sup>) Many analytical errors are the result of employees not understanding the data or the technology

that they're using. However, just as many are the direct result of an analyst's failure to appreciate the business side of the analyses; for example, using the right definition of "customer" in their model.

### Relationship and consulting skills

Analytical people are often stereotyped as nerds who have no relationship skills and probably don't know—or care—much about the actual business. Not only are such assertions unfair, they are highly counterproductive. For companies that really want to become more analytical, their pros and semi-pros simply must be able to talk in layperson's terms with clients, with customers and with executives across the organization.

For this reason, consulting and relationship skills are important. Analysts must be able to conceive, specify, pilot and implement analytical applications; they must know how to advise, negotiate and manage expectations. Analysts also need to be able to communicate the results of analytical work, either within the business to share best practices and to emphasize the value of analytical projects, or outside the business, to shape working relationships with customers, suppliers and regulators.

### Coaching and staff development skills

The ability to nurture and develop analysts is vitally important. If your analysts aren't centralized, coaching can ensure that best practices are shared across the company. Good coaching not only builds all the essential skills described here, but it also helps people understand how data-driven insights can create business value.

Developing your analysts has many benefits. Analysts build their skills and remain professionally relevant, and your company enhances its analytical capabilities. Further, our research shows that developing analysts actually makes them much more likely to stay with your company, despite their increased attractiveness to other employers.

## Deploy your analytical talent

To meet analytical objectives, you need the right people with the right skills in the right places at the right times. When analytical skills are well matched to the work, the business is more productive and analysts are more engaged. There are three important components to deploying analytical talent effectively.

### Organizing analytical talent

The way your analysts are organized affects their ability to perform their jobs, develop their skills and work with other parts of the business. It can also influence their level of engagement, their degree of investment in your company's success and their likelihood of remaining loyal.

Most companies with a successful analytical approach have centralized their top pros and semi-pros to some degree. Procter & Gamble, for example, took analytical groups that had been dispersed and combined them to form a new Global Analytics group as part of an IT organization. Pooling analytical talent—or at least networking it more cohesively—can stretch these scarce resources by making it easier to supply skills, advice and solutions to common problems.

There's no single organizational model that's best for every company. The right model will depend on the maturity of your company's analytics function and whether you need analysts to be closer to one another or closer to the business. Nevertheless, our research reveals that firms with a strong commitment to building an analytical workforce are best served by greater centralization and coordination of analysts.

If you're new to analytics, a first step might be to create a community of interest to provide support and share examples of best practices. Once you've built a critical mass of experts and demand for analytics grows, you can look at other organizational models, such as a centralized analytics function or a center of excellence. (We discuss this topic in more detail in the next section, "How to Organize Your Analytical Talent.")

### Clarifying analysts' career paths

In most organizations, pros and semi-pros are measured and developed not according to their analytical skills but according to the standards of the business units or functions in which they are housed. As a result, rewards, performance management, objectives and role descriptions often vary wildly for analytical talent in the same enterprise. Creating distinct roles can boost performance and engagement by ensuring that analysts have clearly defined objectives, reward structures and growth opportunities.

Creating unique career paths can also increase your ability to attract and retain top analysts. Jim Heffernan, CFO of the Massachusetts General Physicians Organization, says that it's a big challenge to avoid setting analysts up for failure by promoting them according to the organization's standard career models. Many of the most technically adept analysts don't want to manage others. To ensure that it can retain these valuable analysts, the organization is creating a compensation and promotion system that will allow great analysts to be individual contributors without direct reports and still be eligible for pay increases and promotions.

### Staffing analytical talent

Matching the right pros and semi-pros to the right project is critical. Be prepared to move people around in order to help them focus on the company's biggest problems.

The prerequisite to appropriate redeployment: An enterprise-level perspective on analytical roles and a detailed inventory of the organization's analytical skills. When Best Buy found itself with many open analytical positions, leaders evaluated the skills available across the business. A review of skills and open positions found many analysts who were either under- or over-qualified for their work, so the company redeployed people to new positions, putting hundreds of employees' skills to better use while greatly improving employee job satisfaction and engagement.

## Managing analytical talent strategically

Analytical talent is vital to the success of nearly every organization. Whether your company aspires to compete on analytics or simply to become more analytical, you need to manage your analytical talent as a strategic workforce.

This cannot be accomplished with piecemeal, ad hoc approaches that touch only on parts of the overall talent management equation. It requires an approach that looks across the entire enterprise. By building and aligning the four key talent management capabilities, companies can maximize the strategic impact of their analytical talent and continually expand the organization's collective analytical capabilities. Or, in simpler terms, they can build their own talent-powered analytical organization.



# How to Organize Your Analytical Talent

To get the most value from your analytical talent while also keeping them engaged and on board, you have to organize them with the right approach. We discovered that companies typically employ one of five models to organize their analytical talent. Our research shows which models are more effective both for the business and for the individuals. The key? Keep your analysts both "close to the business" and "close to each other."

Business leaders know they rely on analytical talent to maintain their company's competitive edge. But they often struggle with one crucial question: What's the best way to organize our analysts? Executives have to decide whether they should be centralized or decentralized; "charged out" to the rest of the business as consultants or made available as a free resource; and where and to whom they should report.

The stakes of using the right model are high. When companies fall short, their best analytical minds are relegated to conducting simple analyses or working on low-value projects rather than building robust models to solve the most challenging business problems. Worse still, that type of work is a sure recipe for analyst disengagement and defection.

But companies seeking to maximize analytics' impact on the business while building a highly engaged analytical workforce face a dilemma. They need to organize analysts in a way that has them working "close to the business" on the most important analytical initiatives while keeping them working "close to one another" to coordinate their efforts and for purposes of mutual learning and support. Making both happen at once is the challenge.

Are companies up to the task? To find out, we interviewed dozens of executives and surveyed more than 700 analysts. We discovered that companies use one of five models to organize their analysts. While the right choice can vary, we found that companies with a strong commitment to building an analytical workforce are best served by greater

centralization and coordination of analysts. The right organization model is also critical to engaging and retaining this ever more important segment of the workforce.

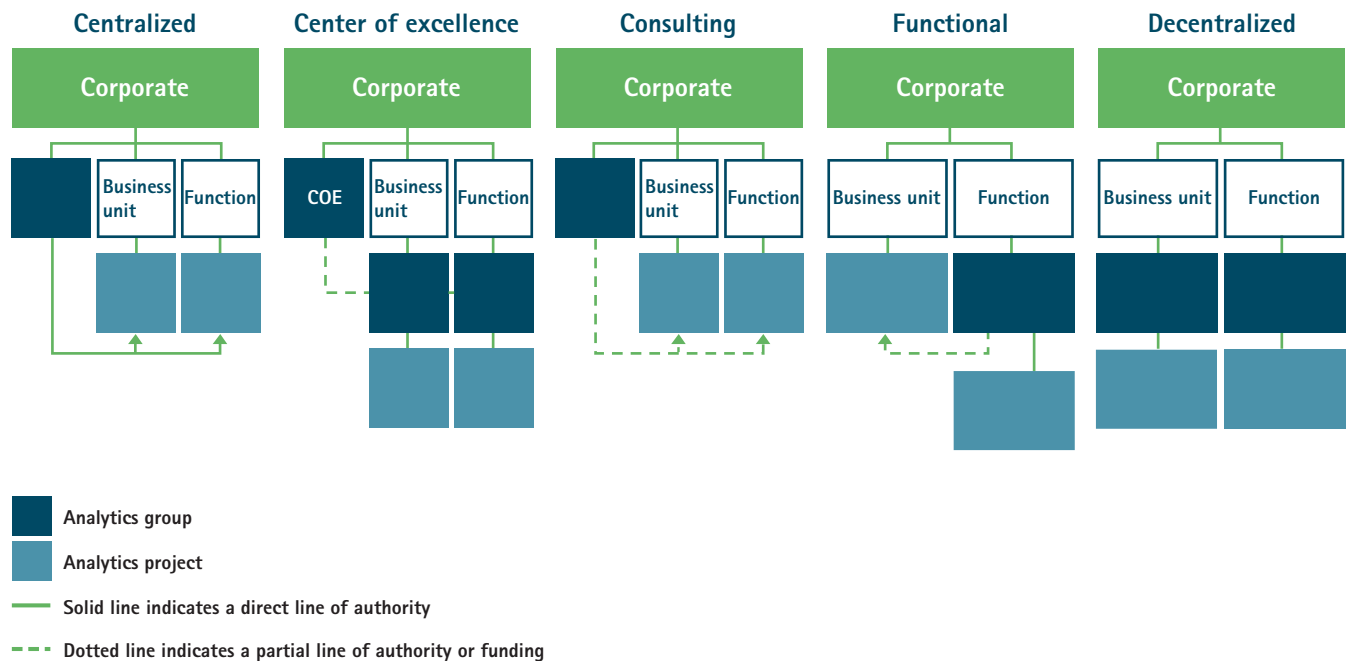
To decide which model is right for your situation, you need to start by asking questions about your level of analytical maturity and the speed and level of change your organization is prepared to undertake.

### How companies organize analytical talent

Based on our research and work with analytical organizations, we identified five basic options for organizing analysts in large, multi-divisional corporations. (See Figure 2.)

Figure 2: Options for organizing analytical talent

Large, multi-divisional corporations use one of five models to organize analytical talent.



**Centralized.** Analysts reside in one central group where they serve a variety of functions and business units and work on diverse projects.

Besides providing analytical expertise and support, this unit sets the analytical direction of the entire organization. This structure makes it easier to deploy analysts to projects with strategic priority. Candy giant Mars uses this approach; its Catalyst group has long-term funding and works on strategic initiatives across the business. One caveat: This model can create distance between analysts and the business, particularly if all analysts are housed in one location.

**Center of excellence.** Analysts are allocated to units throughout the organization, but their activities are coordinated by a central entity.

The center serves to build a community of analysts, primarily to share knowledge and best practices with one another. It can also double as a project management office, looking across analytical initiatives and determining project priorities and staffing. Capital One and Wal-Mart both employ versions of this model. At Capital One, Ph.D.-trained statisticians reside in a center of excellence. At Wal-Mart, the Information Systems Division has organized an analytics center of excellence, even though other divisions employ most of the analysts.

**Consulting.** Analysts work together in a central group but act as internal consultants who charge “clients” (business units) for their services.

The consolidation of analysts enables enterprise-wide coordination of analytical activities. However, a lack of direction from senior leadership can cause problems because top analysts can end up working on small, peripheral problems rather than key strategic challenges. United Airlines, eBay, and trucking firm Schneider National all employ the consulting approach.

**Functional.** Analysts are located in the functions where the most analytical activity takes place, such as marketing and the supply chain.

In some cases, all analysts are housed within the function with the strongest analytical orientation, even though some may do work for other parts of the business. Fidelity uses this approach: The great majority of analysts work in the Customer Knowledge group, which reports to marketing. Analysts are found in large numbers in marketing at Carnival Cruise Lines and at GE Money (although they also work for the risk management function and other groups).

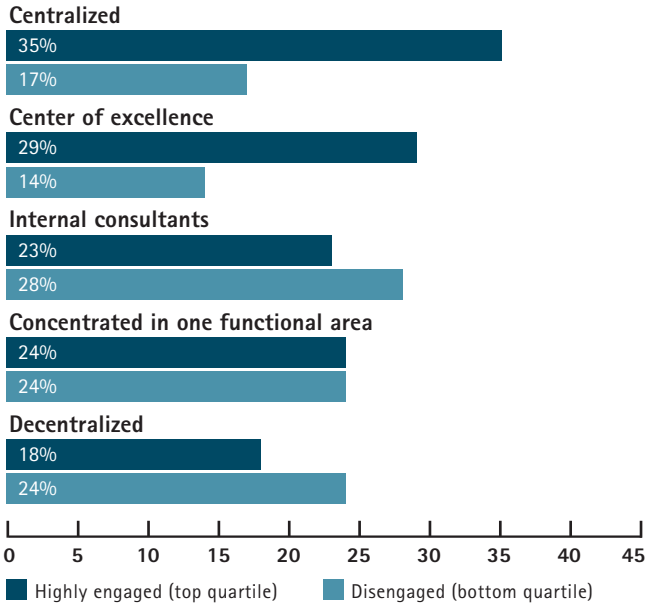
**Decentralized.** Analysts are scattered across the organization in different functions and business units with little to no coordination.

This model makes it difficult to set enterprise-wide analytical priorities and to develop and deploy staff effectively. Companies with few analysts and little management support are most likely to be decentralized.

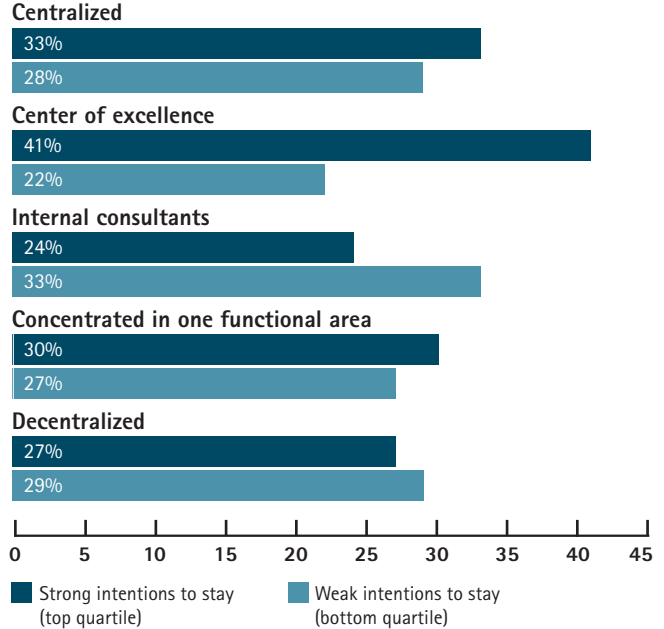
Our survey data reflect the variety of organizational models across industries. The decentralized model is most prevalent (reported by 42 percent of analysts surveyed), indicating the immaturity of most corporations' analytical capabilities today. Consumer-oriented industries that we'd expect to have advanced analytical capabilities—including retail, consumer goods and services, financial services and health and life sciences—tend to use more centralized models. Company size wasn't a key factor in choice of model, except in the most extreme cases: Companies with fewer than 1,000 employees are more likely to organize their analysts into one functional area, whereas companies with more than 25,000 employees are more likely to use a center of excellence model.

Analysts who work together in centralized groups or are connected through a center of excellence reported the highest levels of engagement and are the most likely to stay with their companies. In fact, analysts in centralized groups were nearly twice as likely to be highly engaged as analysts who were decentralized. (See Figure 3.) Analysts in centers of excellence reported the strongest intentions to stay with their employer, whereas those in the functional, consulting and decentralized models reported significantly lower levels of engagement and weaker intentions to stay. (See Figure 4.)

**Figure 3: Analyst engagement in the five organization models**  
Analysts in centralized units and centers of excellence are most likely to be highly engaged and least likely to be disengaged.



**Figure 4: Analyst intentions to stay in the five organization models**  
Analysts in centers of excellence are most likely to intend to stay with their company and least likely to intend to leave.



**Figure 5: Key features and priorities of the main approaches to organizing analytical talent**

Centralized units and centers of excellence outperform other organization models on coordinating analytics initiatives, sharing and developing analysts' knowledge, and deploying analysts strategically.

Type	Features	Priorities				Company examples
		Coordinate enterprise-wide analytics initiatives	Deploy analysts strategically	Build relationships with the business	Share best practice & training	
Centralized	<ul style="list-style-type: none"> <li>Organized in a single, centralized unit</li> <li>Sets analytical direction of entire organization</li> </ul>					<ul style="list-style-type: none"> <li>Expedia</li> <li>Mars "Catalyst" Group</li> </ul>
Center of excellence	<ul style="list-style-type: none"> <li>Analysts decentralized, residing in business units or functions</li> <li>All analysts members of corporate center of excellence</li> </ul>					<ul style="list-style-type: none"> <li>Capital One</li> <li>Wal-Mart</li> </ul>
Consulting	<ul style="list-style-type: none"> <li>All analysts are part of one organization</li> <li>Business units "hire" analysts</li> </ul>					<ul style="list-style-type: none"> <li>eBay</li> <li>Schneider National</li> <li>United Airlines</li> </ul>
Concentrated in one functional area	<ul style="list-style-type: none"> <li>Analysts organized in a single business unit or functional area—usually finance or marketing</li> </ul>					<ul style="list-style-type: none"> <li>Fidelity</li> <li>Carnival Cruise Lines</li> </ul>
Decentralized	<ul style="list-style-type: none"> <li>Analysts sit in business units or functions</li> <li>There is no corporate consolidating structure</li> </ul>					<ul style="list-style-type: none"> <li>Majority of non-analytical companies</li> </ul>

Low High

If engaging analysts were the sole goal, our recommendation would be simple: Centralize them. But in practice we've found that the ideal model depends on a company's priorities, the maturity of its analytical capabilities and the need to balance analyst supply and demand. (See Figure 5.) When just starting to use analytics, most companies don't need to use them in every area of operations. Nor do they have enough analysts to justify centralizing resources—making a functional model a natural fit. As demand grows, companies tend to hire more analysts. Once an organization gets a critical mass of experts and demand reaches the point that allocation of these scarce resources becomes a priority, one of the more centralized models is appropriate.

### How organization affects analysts

Meaningful work and career opportunities are critical for engaging and retaining all types of employees, and analysts are no exception. How companies organize analytical talent affects whether they have access to the most meaningful opportunities—work that allows them to use their highly specialized skills, gain valuable experience and contribute to the organization's goals. Analysts in centralized units and centers of excellence are most engaged and most likely to stay because they enjoy the most meaningful career opportunities. (See Figure 6.)

Three key factors influence the quality of analysts' work and career opportunities (and, in turn, drive engagement and retention): that their work is aligned with the organization's strategy and goals and affects its success (significant work), that they understand the business (business insight) and that their skills and aspirations are a good match with the company culture and goals (organizational fit).

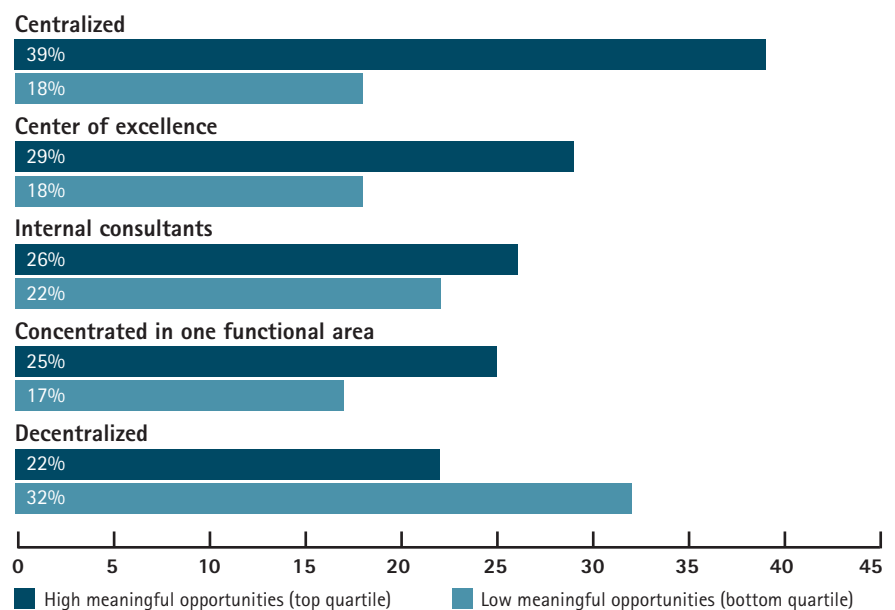
#### Significant work

Without the chance to make a real impact on the organization's success, analysts won't find enough meaning in their work, and so they will be less engaged and less likely to stay. Perhaps the biggest de-motivator for analytical pros is spending too much time on simple analyses and report generation instead of building and

refining analytical models. We know of several organizations that have lost analysts who felt they were treated largely as "spreadsheet developers." It's essential to give your best analysts opportunities to apply their expertise to the company's biggest problems.

One analyst, Sharon Frazee, gave us an example of how significant work was connected to engagement. At one point in her career, she led a successful and highly engaging initiative to standardize information and to streamline its distribution—changes that gave line managers more time to analyze potential growth opportunities. Frazee, now vice president of corporate healthcare analysis and research at Walgreen's,

**Figure 6: Meaningful work and career opportunities in the five organization models** Analysts in centralized units are most likely to report that they have meaningful work and career opportunities. They use their highly specialized skills and gain valuable experience while contributing to the company's goals.



described her passion to contribute: "I want to make a difference. Being able to do the kind of informatics work that actually gets applied, and to see things changed because of it, is important to me."

How analysts are organized greatly affects their opportunities to make meaningful contributions. Companies create centralized units and centers of excellence to ensure that analysts are working on the models and applications that matter most to the business. Indeed, we found that analysts in centers of excellence and centralized units were most likely to report that the work they do is important. (See Figure 7.) Analysts who are organized as internal consultants, housed in functional units or dispersed throughout the business were more likely to be stuck working on peripheral projects.

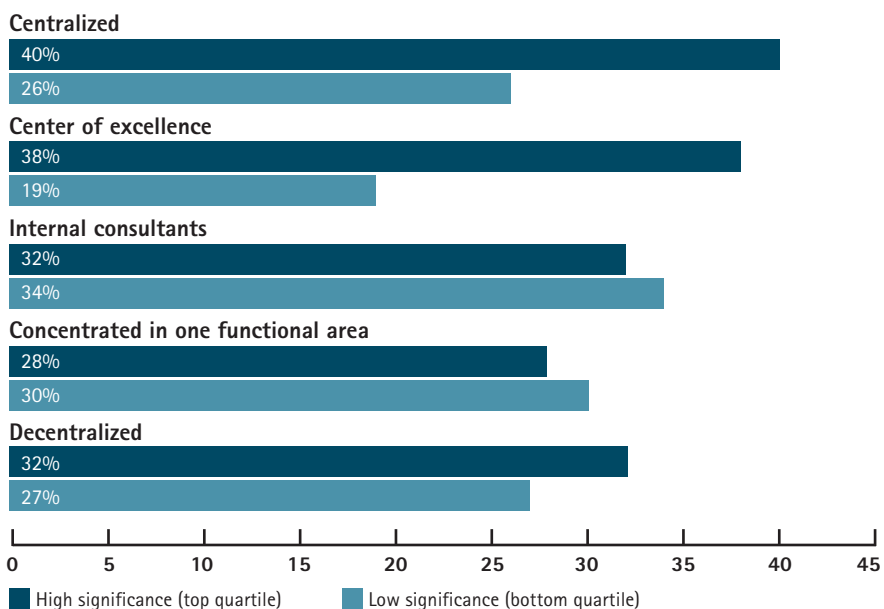
**Business insight**

Organizations don't just want "quant geeks." They need highly quantitative people who understand the business and can develop strong relationships with business leaders. How analysts are organized can have a major impact on this dimension.

According to our survey, analysts in centralized units, functional groups and centers of excellence had more insight into their company's business than analysts in internal consulting groups or analysts who were decentralized. (See Figure 8.) These more

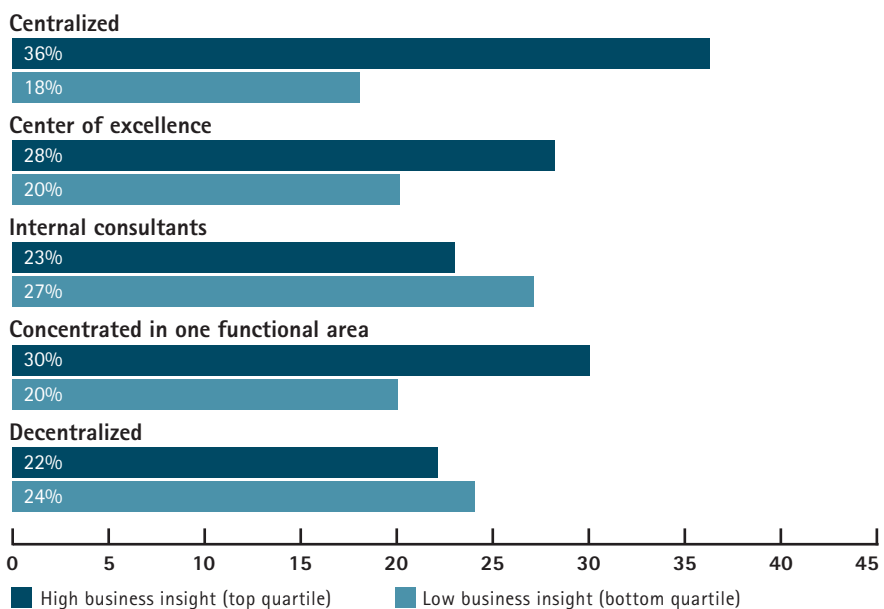
**Figure 7: Significance of the work in the five organization models**

Analysts in centralized units and centers of excellence were most likely to say that they do important work that has a significant impact on their company's success.



**Figure 8: Analysts' business insight in the five organization models**

Analysts in centralized units reported the greatest understanding of their company's strategy and capabilities, lines of business and competitive environment. Because of their close ties to the business, analysts in functional groups also possess considerable business insight.



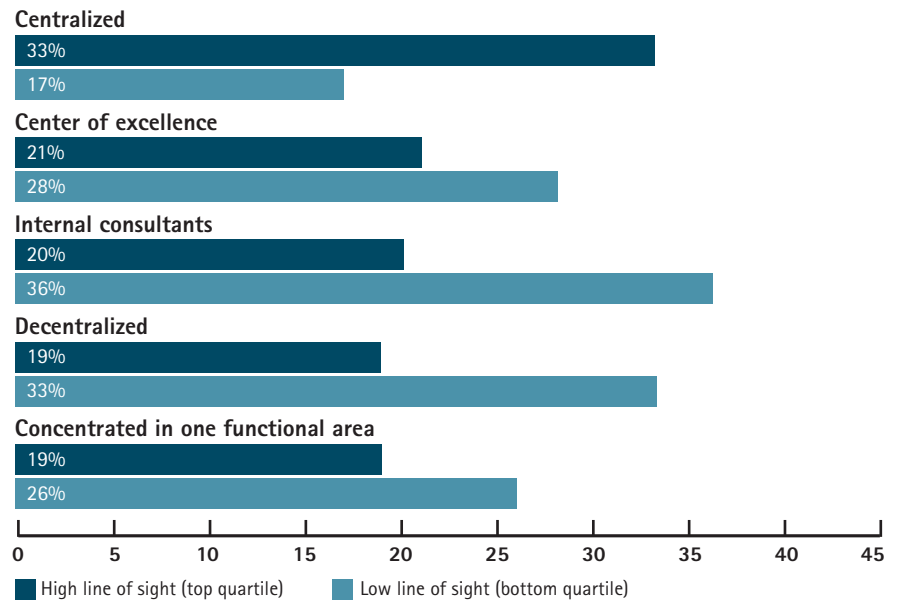
centralized groups offer analysts an enterprise perspective: One in three analysts in centralized units understands how his or her group contributes to the organization's success, whereas just one in five analysts in the other models has this degree of insight. (See Figure 9.)

GE is famous for its ability to build business acumen far and wide throughout the organization. It's no different with the company's analytical talent. For example, its financial services unit, GE Money, operates analytical centers in Shanghai and Bangalore. Staff members from the centers routinely rotate through other parts of the business. These assignments help analysts learn about the local operation and better prepare them to meet its needs through the center in the future. Equally important, the assignments are a valuable retention tool because they offer analysts a sense that they are making meaningful contributions to the business.

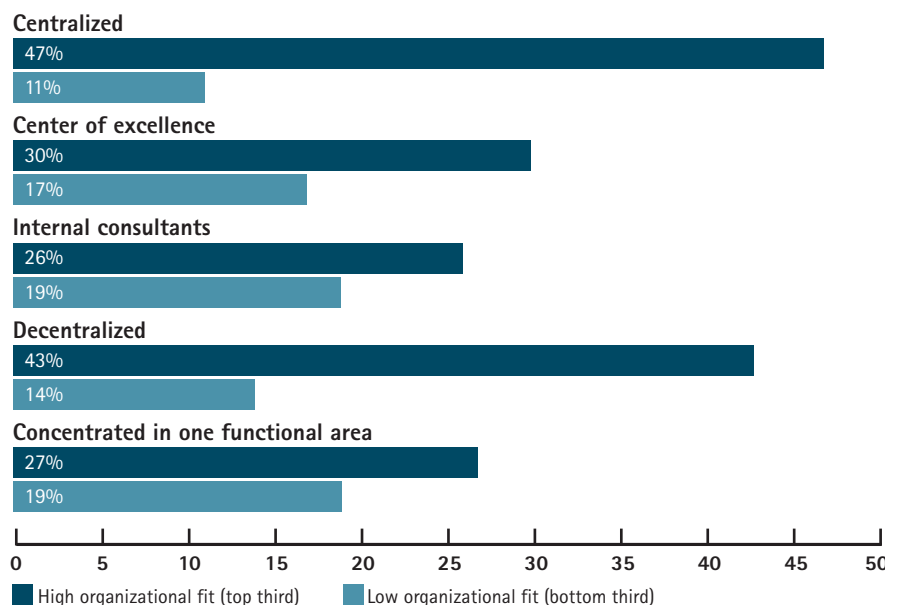
### Organizational fit

In many companies, analysts are viewed differently from the rest of the workforce; one executive we interviewed called them a "weird species." Analysts themselves take pride in their uniqueness. Still, they want to work for companies that value analytics and with colleagues that appreciate and respect their talents. They are most engaged when they believe their rare and valuable skills are a good match with the company's culture and goals.

**Figure 9: Line of sight to the business in the five organization models**  
Analysts in centralized units were most likely to understand how their group contributes to their company's success.



**Figure 10: Organizational fit in the five organization models**  
Analysts in centralized units were most likely to report a high degree of fit with their company.



We found that organizations with a centralized analytics function are better at communicating the value they place on analytics and at making analysts feel at home. Nearly half of all analysts working in centralized groups report a high degree of fit with their organization; only one in 10 feels their company is not a great fit for them. (See Figure 10.) The fact that they've chosen to bring together the company's best analytical minds is likely a testament to the importance they place on analytics. By contrast, analytical talent deployed as consultants or concentrated in one functional area often feel like misfits, isolated from the business as well as from other analysts.

Grouping analysts together, whether in centralized units or centers of excellence, helps to maximize the fit between analysts and the organization and thus keep analysts engaged. For example, Dr. Steven Udvarhelyi, senior vice president and chief medical officer at Independence Blue Cross, reports that the company's internal "informatics organization" is critical for developing analytical talent: "It's a defined center of excellence. It creates a fertile ground for people to work with other people. It creates a critical mass where you get career opportunities, growth opportunities and good professional interaction."

### Getting organized

How do you determine which model is best for you? That answer depends upon the maturity of your company's analytical capabilities as well as the level of demand for analytical skills. If your organization has little demand for analytics, has only a handful of analysts and no executive sponsorship, then it's best to house analysts wherever they have a willing sponsor. In more analytically sophisticated companies, demand for analytics quickly outstrips the supply. In this case a hybrid approach, with a centralized team of the most advanced analysts complemented by a center of excellence for analysts deployed to functions or business units, may be the best solution. An enterprise-level organizational model makes it much easier to deploy analysts on strategic business priorities.

The next challenges: How fast can you get there, and what's the ideal pace of change? Organizational change should be segmented into stages and spread over multiple time horizons—quick wins versus longer-term goals. For example, linking decentralized analysts through a community of interest is relatively easy to do. Setting up a formal center of excellence, with specialized training and development for its members, takes longer. The potential for change will be determined by the maturity of your organization's analytics function as well as the strength of leadership and the level of senior executive commitment to analytics.

What if you can't easily change your organization's model? Leave analysts wherever they have enough sponsorship to protect them and advocate for adopting a more enterprise-wide perspective (which would require, for example, consistency in skills, job descriptions, training, salary and career development opportunities). If you use the consulting model, find ways to demonstrate to analysts how their work contributes to organizational goals. It's also important to build a sense of community in order to share best practices and improve analysts' sense of fit with the organization. If your analysts are concentrated in one functional area or are decentralized, you'll need to find ways to provide them with an enterprise perspective and to build links between them and with other parts of the business. Building an informal community of interest may be the best place to start.

And if your analysts are already centrally organized or in a center of excellence, that doesn't mean all your problems have been solved. While centralized organizational structures are superior, they're not perfect. Explore ways to link centralized analysts more closely to people in the business so that they better understand their needs and can more effectively translate the findings of their analyses. If you have a center of excellence, it's important to reinforce the links between analysts and to make sure that senior management fully supports the analytics function.

### Beyond organization

Companies and managers need to recognize analytical talent as a special segment of high-value employees, whose preferences and motivations vary significantly from those of other employees. Organizing analytical talent in a way that not only addresses the strategic and operational needs of the business but also provides analysts with meaningful work and career opportunities is essential. (See Figure 11.) Regardless of which model a company adopts, it should develop a community of analysts and take an enterprise approach to organizing them. That's the best way to ensure analysts feel that they fit with the organization, understand the business and have opportunities to make meaningful contributions to its success.

The significance of analysts' work, their insight into the business and their fit with the organization will all be higher in "analytics friendly" organizations. Managers that value fact-based analysis create precisely the kind of challenging and important analytical assignments that make analysts thrive. When managers don't value analysts' work, then no matter how they are organized, they will be underused and unappreciated—two guaranteed ways to sap the motivation of the best analysts and to send them to your competitors.

**Figure 11:** Key performance indicators for the five organization models

The centralized and center of excellence models outperformed the others across a range of dimensions.

	Influences			Conditions	Outcomes	
	Significant work	Business insight	Organizational fit	Meaningful work & career opportunities	Engagement	Intentions to stay
Centralized	High	High	High	High	High	Low
Center of excellence	High	Low	Medium	Low	Low	High
Internal consultants	Low	Medium	Low	Medium	Medium	Low
Decentralized	Low	Low	Low	Low	Low	Low
Concentrated in one functional area	Medium	Low	Low	Medium	Medium	Medium

Low High



# How to Engage and Retain Your Analytical Talent

What makes analysts tick? Knowing the answer is critical if you want your analytical talent to fully invest themselves in their work and the company's success. Our research reveals four things companies must do well in order to engage and retain this scarce and valuable breed.

Although the business literature is rife with studies of how to engage and retain employees, analytical talent is unique. The analysts, “math brainiacs” and “Excel ninjas” have distinct backgrounds, skills, attitudes and motivations. To complicate matters further, they themselves are a diverse bunch—from the executive champions who lead major analytical initiatives to the professionals who build and apply statistical models and algorithms to the many employees who regularly use data and analytics in their work. Managers must understand what motivates these workers in order to successfully engage and retain them.

To discover the most important factors for engaging and retaining analysts, we interviewed dozens of executives and surveyed 1,367 U.S.-based employees, including 799 analysts. (For additional details, see the appendix, “About the Research.”) We examined more than 30 factors known to predict employees’ levels of engagement and intentions to stay with their employer, such as company culture, organizational systems, management practices, job and career opportunities, leadership and management and co-worker relationships.<sup>10</sup>

We determined that the essentials of engaging and retaining employees hold true: Companies need to provide meaningful work and career opportunities, support people’s efforts to engage as well as their need for

recovery and renewal and cultivate a culture of trust and respect.<sup>11</sup> But our research revealed something important: Analysts have a different view on what makes opportunities meaningful, what kinds of support are essential and what cultural factors matter most.

## What Is Engagement?

Engaged employees invest their physical, mental and emotional energies into their organization and its success. We gauged respondents’ engagement levels by measuring the reported frequency with which they displayed behavioral, intellectual or emotional investment in their work. Possible responses ranged from “Never” (1) to “Always, every day” (7). The data reveal that, on average, analytical talent is more likely to be engaged than other employees.

Engagement survey item	Analytical talent	Non-analytical talent
I am enthusiastic about providing a high-quality product or service.	52%	39%
I am determined to be complete and thorough in all my job duties.	50%	41%
I am always willing to “go the extra mile” in order to do my job well.	43%	33%
I am prepared to fully devote myself to performing my job duties.	35%	27%
My job is a source of personal pride.	33%	24%
I am willing to really push myself to reach challenging work goals.	32%	26%
Trying to constantly improve my job performance is very important to me.	29%	23%
I am ready to put my heart and soul into my work.	28%	24%
I get excited thinking about new ways to do my job more effectively.	20%	13%

Percentage responding “Always, every day”

### The importance of engaging and retaining analytical talent

When employees are engaged, they invest their full physical, mental and emotional energies in their work. Engaged employees go beyond what is expected or required—they show initiative, innovate and continually find new ways to contribute to their organization's success. Employee engagement is one of the keys to high performance. Various studies have shown that highly engaged workforces produce better business results, as measured in terms such as higher profitability, productivity and customer satisfaction.<sup>12</sup>

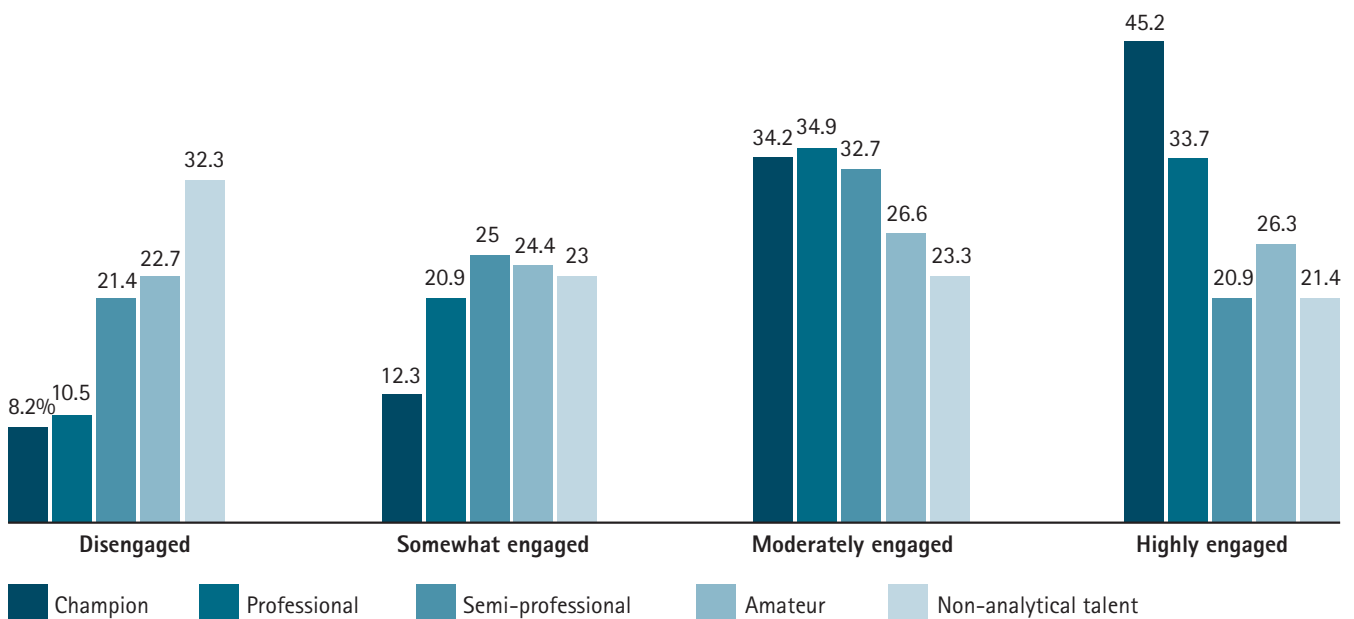
The good news is that, according to our research, analysts as a group were significantly more engaged at work than other types of employees. (See the sidebar, "What Is Engagement?") Overall, 57 percent of analysts reported being moderately or highly engaged, compared with 45 percent of other employees. (See Figure 12.) Analytical work may seem deadly dull to the non-quants among us, but it possesses many of the characteristics of motivating and engaging work.<sup>13</sup> When analytical work is well-organized and aligned with business needs, analysts have the opportunity to use a diverse mix of skills (quantitative, technical and interpersonal), see a project through from start to finish and make a significant impact on business outcomes. They also enjoy a degree of autonomy in performing the work, and they

receive instant feedback on their performance (either a model works or it doesn't). Indeed, the analysts we surveyed registered significantly higher levels on these factors than other employees did.

The bad news, however, is that a sizeable minority of analysts is much less engaged. One in four was simply going through the motions—these people show up for work each day, but they don't give their all. And a full 20 percent of analysts were completely disengaged—rarely, if ever, investing focus or passion in their work or in their company's success.

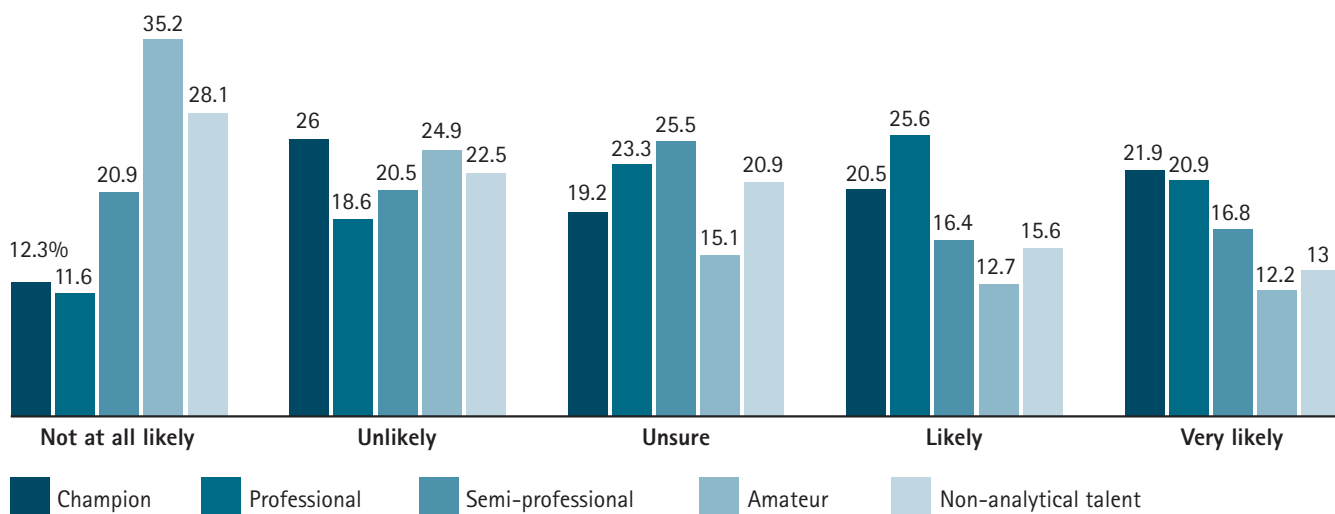
Figure 12: Level of engagement by type of employee

On average, analysts are more engaged than non-analysts. Analytical champions and pros are much more likely to be highly engaged than other employees. Among analysts, semi-pros and amateurs are most likely to be disengaged.



**Figure 13:** Likelihood that respondents will actively look for a new job in the next year

On average, analysts were less likely to intend to stay with their current employer than non-analysts. The more specialized and valuable their skills, the more likely analysts are to consider other options—champions, pros and semi-pros were most likely to say they will soon look for a new job.



More troubling are our findings on retention. Even highly engaged analysts won't necessarily stay at their current organizations. Too many executives mistakenly equate employee engagement with retention, but employers' best efforts to engage analysts may not keep them from walking out the door.<sup>14</sup> Our research reveals that engagement level accounts for less than 10 percent of a person's intention to stay. Therefore, as well as engaging analytical talent, managers need to figure out how to retain them.

The best analytical talent has no shortage of opportunities: Companies fighting to retain analysts face an uphill battle. The fact that 31 percent of analysts responded that it is "likely" or "very likely" that they will actively

search for a new job in the next year is unsettling enough. But another 19 percent said that they are "unsure" if they will stay with their employer in the coming year. That means half of the analysts we surveyed are either unlikely to stay or ambivalent about staying with their companies very long.

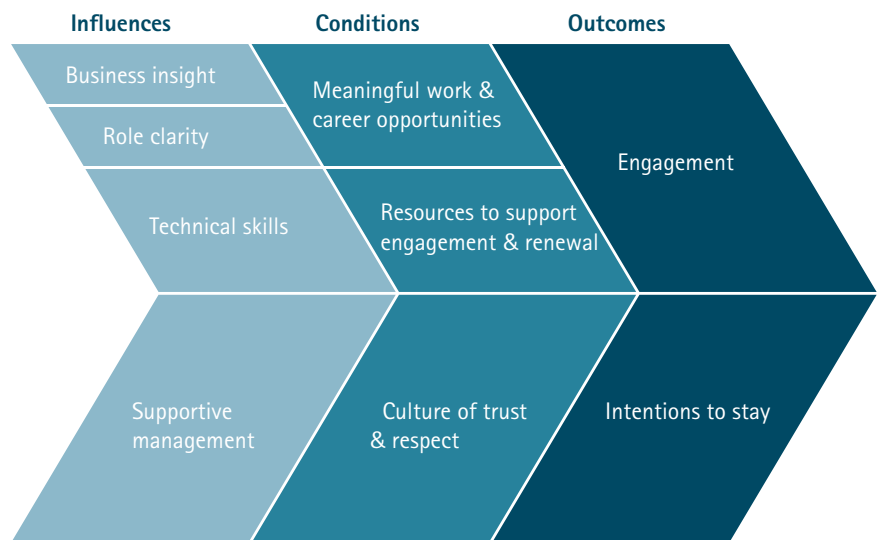
The data for analytical professionals is most troubling. (See Figure 13.) A company's Ph.D. statisticians, mathematicians and other quantitative specialists may appear to be immersed in their statistical models, but many are also updating their resumes and taking calls from headhunters. Nearly half (47 percent) of the analytical professionals we surveyed said they are likely to actively look for a new job in the next year. Many semi-professionals don't plan on sticking around, either: 33 percent expect to start a job search.<sup>15</sup>

A high attrition rate among analysts is a major problem that companies can't afford to ignore. When analysts jump ship, they take vast amounts of knowledge and expertise with them. If highly specialized analytical professionals leave, there is often no one with the same depth of technical skill to replace them. What's more, finding analytical skills in the market is becoming more challenging as the supply of new graduates shrinks and demand for quantitative skills increases.<sup>16</sup> Therefore, companies need a clear understanding of what engages analysts and what motivates them to stay or leave.

In our research, we compared the factors that influence engagement and intentions to stay among analysts with those that matter to non-analytical talent. We discovered that several

**Figure 14:** What matters most for engaging and retaining analytical talent

There are three essential conditions for engaging and retaining analysts and non-analysts alike: Companies need to provide meaningful work and career opportunities, support people's efforts to engage as well as their need for recovery and renewal and cultivate a culture of trust and respect. But some things are uniquely important to analysts. Companies must do four things well to engage and retain analytical talent: develop their business insight, provide role clarity, help them expand their technical skills, and ensure management support.



factors that have very little effect on other employees' engagement or intentions to stay are crucial for engaging and retaining analytical talent. Companies must do four things well to engage and retain analytical talent:

1. Arm your analysts with critical information about the business.
2. Set roles and expectations: for analysts, clarity is critical.
3. Feed your analysts' love of new techniques, tools and technologies.
4. Give analysts the management support they need.

These are especially crucial for engaging and retaining your most quantitatively savvy analytical talent—the professionals who create and use the complex models and algorithms that companies rely on to inform business decisions.

### How to engage analytical talent

Meaningful work and career opportunities are critical for engaging all types of employees, and analysts are no exception. Analysts are most engaged by work that allows them to use their highly specialized skills, gain valuable experience and contribute to the organization's goals. Two key factors influence the quality of analysts' work and career opportunities (and, in turn, drive engagement): Business insight, or how well they understand the business, and role clarity, or how fully they understand their role.

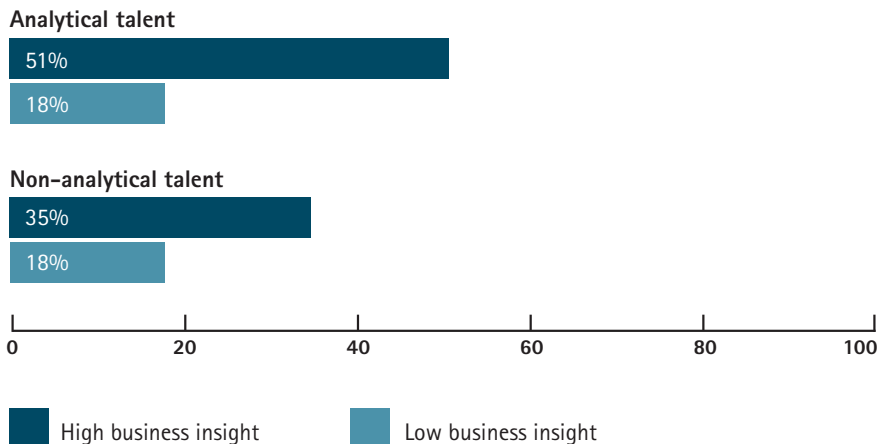
In addition, employees are most engaged when they have the resources they need to be effective—the skills, information, people, technology and tools that make it possible to do their jobs well. The opportunity to continually update technical skills is uniquely important to analytical talent. (See Figure 14.)

### Arm your analysts with critical information about the business

As analytics becomes more integral to a company's strategy, analysts need to develop stronger business insight. They can't spend their days with their heads buried in models and spreadsheets. They need the business knowledge and skills to allow them to understand the strategic issues facing the company and how analytics can be used to drive business value. Insight into the business not only makes analysts more effective—it also boosts their engagement.

**Figure 15:** Percentage of respondents that are highly engaged, given high and low levels of business insight

Insight into the business matters more for engaging analysts than non-analysts. Analysts who possess business insight are nearly three times more likely to be highly engaged than those who don't.



Our research revealed that business insight is one of the strongest predictors of analyst engagement. More than half of the analysts who understand their company's strategy, goals, capabilities and operations were highly engaged, compared with just 18 percent who don't have a firm grasp of the business.<sup>17</sup> (See Figure 15.) Moreover, analysts who understand how their work relates to their organization's goals and contributes to its success were nearly six times more likely to be highly engaged than those who don't.

Business insight is particularly important when it comes to engaging analytical professionals. Despite their technical background, these pros are most engaged when they thoroughly understand how their models and

analyses can be used to good effect. In our survey, analytical professionals with considerable appreciation for the business were twice as likely to be highly engaged.

To develop analysts' business insight, companies should expose them to a range of business units and functions so they learn about the company's main business challenges and work processes. Leaders at a global financial services company stress the need for analysts to understand the business side of things and to engage with executives on their terms: "Let them be executives. Discuss business issues and the potential for analytics to have an impact on the organization's results," says the head of one of the company's analytics groups. The firm gives analysts the tools and templates they need to capture business strategy,

delineate problems and devise solutions. Analysts there can effectively communicate and negotiate with business leaders because they can explain how their work creates value for the firm.

Opportunities to interact with key stakeholders within and outside the company help analysts learn how the business uses analytics and how to communicate the results of their analyses in non-technical language. Analysts who have the knowledge and skills necessary to communicate effectively with suppliers, customers and other stakeholders are six times more likely to be highly engaged, we found.

Colin Sheppard, Virgin Media's Director of Knowledge and Insight, says Virgin trains its analysts to think like clients. It encourages them to focus on the business's most pressing problems, not simply to have fun with the data. He finds that's what makes the difference between good and great analysts—the best are not only technically outstanding, they also understand the key motivations of the consumer and are focused on commercial objectives. Analysts who can confidently communicate their findings in terms that are important to senior executives are not only more engaged but also more likely to convince management to act upon their recommendations.

At Duke Energy, analysts must be prepared to represent the business and explain its analytics to a wide range of stakeholders—from internal customers to regulators and the public. A proposal to build a new power plant, for example, entails extensive analysis of an enormous amount of data. Analysts are called upon to publicly explain and defend the company's models. According to Dick Stevie, Managing Director of Customer Marketing Analytics, this requires "precision, completeness and clarity—no jargon and no metaphor. You've got to convince a panel that what you've done is logical and reasonable." To prepare for these situations, Stevie routinely puts analysts

in front of top management and group leaders for mock trials, where the analysts get practice testifying and being cross-examined. Analysts who understand the external business landscape and can speak the language of business are both effective and engaged.

**Set roles and expectations: for analysts, clarity is critical**

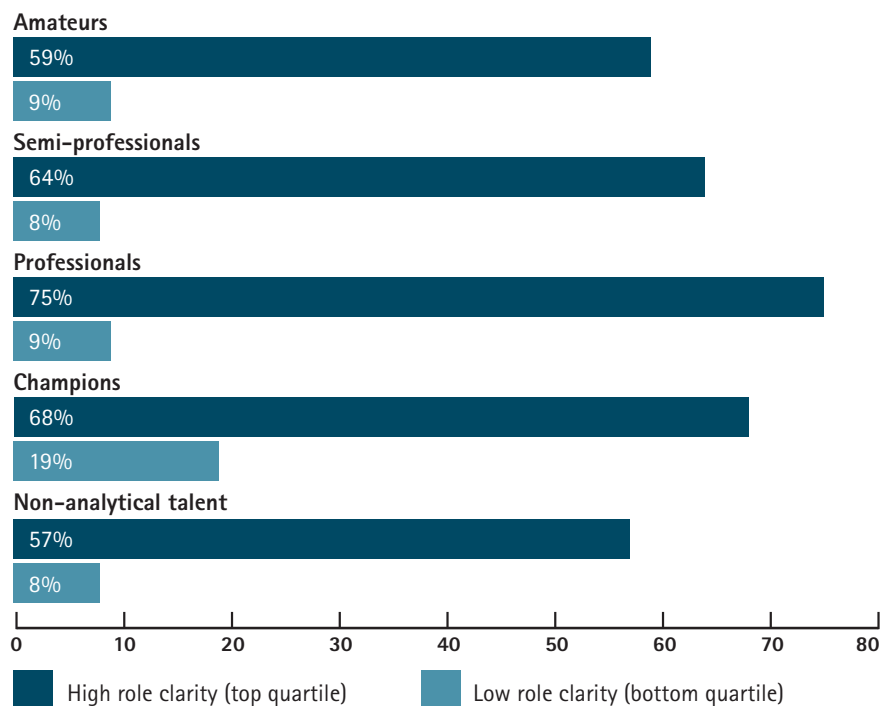
Analysts like structure. As a group, people with a strong quantitative orientation tend to be less tolerant of uncertainty and think in a linear fashion.<sup>18</sup> That's why they are so good at what they do—they turn raw data into clear insights by creating models and applications that make sense of it. That tendency toward order leads analysts to prefer structured and predictable work environments.

It's awfully frustrating when you don't know what you're supposed to do. Engagement suffers in the absence of clear goals and expectations—and this is especially true for analytical talent. In fact, analysts who said they understand their roles were six times more likely to be highly engaged. The flip side? Analysts with ambiguous roles were nine times more likely to be disengaged. A compelling argument for attention to this point if ever there was one.

At Google, employees know precisely what is expected of them. Roles are highly structured according to a 70/20/10 model in which employees spend 70 percent of their time fulfilling basic job requirements, 20 percent on projects that help them develop technical skills and benefit the company, and 10 percent on product and business innovations. Although aspects of the role are open-ended, overall expectations and job requirements are clearly defined. The company makes sure job descriptions are clear because, according to Liane Hornsey, an HR director there: "Good people only fail if they do not know their role."<sup>19</sup> In addition, a set of 25 performance metrics keep "Googlers" on track to achieve their goals.<sup>20</sup>

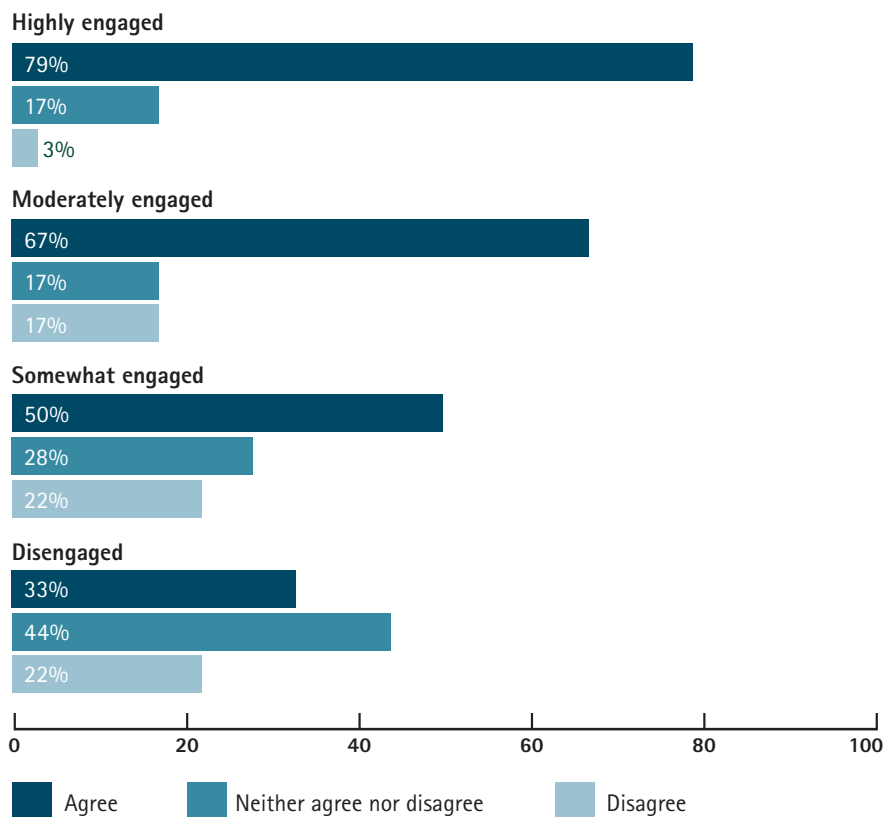
**Figure 16:** Percentage of respondents that are highly engaged, given high and low levels of role clarity

Role clarity is essential for engaging analytical talent—especially analytical professionals. Pros who have clear goals, objectives and expectations for their jobs are more than eight times more likely to be highly engaged than those who don't.



**Figure 17:** Engagement levels of analytical professionals, given time and resources to keep up with field

Nearly four out of five highly engaged pros report that they are able to stay abreast of evolving tools and technologies.



We found that role clarity is particularly important for engaging the most quantitative-minded analysts. Analytical professionals are much more likely to be engaged when they have a clear understanding of their responsibilities, objectives and authority: Three out of four analytical professionals who know what is expected of them were highly engaged, while just one in ten pros who lack such clarity was. (See Figure 16.)

Clear does not mean rote, however. Companies must be mindful that analysts place a premium on interesting and challenging work. In particular, pros and semi-pros want to work with a variety of datasets and types of analyses. One grocery retailer discovered this the hard way. The company could attract highly skilled MBAs to a job that entailed an essential but repetitive analytical task, but it could not keep them for long. The analysts quickly became restless and sought new challenges. Variety in their work and a sense of personal progress keep analysts challenged and engaged.

In addition, the chance to work with the latest analytic models, tools and technologies is crucial.

**Feed your analysts' love of new techniques, tools and technologies**

Analytical work requires specialized skills, and the skill requirements change rapidly as new analytical tools and techniques emerge. To sustain and expand your organization's analytical capability, you must keep your analysts' technical skills up to date. Investing time and resources in maintaining your analysts' technical skills will also yield engagement benefits. In our research, we found that analysts who have opportunities to keep up with advances and developments in their field were three times more likely to be highly engaged than those who don't.

Professionals, in particular, are much more likely to be engaged when they can maintain their technical skills: Those who said they were able to keep up with the latest tools and technologies in their field were four times more likely to be engaged and 26 times more likely to be highly engaged. (See Figure 17.)

Consider the statisticians at AT&T Labs. The mandate of this analytical talent "is to develop new methodologies to deal with large-scale data problems—the type of problems generated by the massive stores of data AT&T collects to run its business," says Chris Volinsky, director of the Statistics Research Department. To do this, it's essential that they keep up with latest advances in statistical theory and methodology.

## The Beleaguered Semi-Pro

All types of analytical talent demand special efforts to engage and retain, but companies should pay particular attention to the analytical semi-professionals that apply analytics to business problems. Semi-pros lead difficult lives. They provide the interface between analytics and the rest of the business. They sift through piles of data and provide business solutions to demanding executives. They are central to the execution of your company's analytics strategy. Because they have a foot in both worlds, their needs sometimes slip between the cracks. Out of all the types of analytical talent, semi-pros are the least engaged.

Even though their main job is to apply analytics to business problems, semi-pros often lack adequate insight into the business, according to our research. In order to apply analytics effectively, semi-pros must understand their organization's goals, objectives and core capabilities. They need to be aware of the external business landscape. They must recognize the key concerns of various business departments. Despite working more closely to the business, many semi-pros reported that they don't have a deep enough understanding of it. Without that insight, and therefore without the sense that they are

making meaningful contributions to their organization's success, they are likely to disengage.

Many semi-pros struggle to divide their time or to understand what their job responsibilities include and what is expected of them. Clear requirements and objectives sometimes don't exist for their jobs. Semi-pros had significantly less clarity about their roles than champions, professionals or amateurs did. They work at the intersection of analytics and the business, often not knowing which way to turn first. No wonder they are so stressed out.

To make matters worse, compared with the other types of analytical talent, semi-pros receive the least amount of support from their managers: Semi-pros need their managers to understand their problems and help them find solutions. They also want their supervisors to recognize their potential and encourage them to advance their careers. But too many semi-pros told us they don't receive the support from their managers that they crave. This is a surefire way to lose them.

When you walk the floors of your organization, give your semi-pros some extra attention. Their roles are fuzzy; they often lack adequate insight into the business; and they don't get enough support from their supervisors. But these beleaguered analysts are essential to your company's success.

The company expects them to be active in their disciplinary fields by publishing papers, going to conferences, organizing workshops and collaborating with colleagues in other organizations.

These analytical professionals also expand their technical skills by pursuing problems across the business and beyond: "We have a lot of freedom to work on things that we find are interesting to us," says Volinsky. His group has done work in the areas of targeted marketing, fraud detection and manufacturing, for example.

A few years ago, the group took on a challenge posed by Netflix, the online DVD-rental company—and won. In 2006, Netflix launched a competition that offered a top prize of US\$1 million to anyone that could improve—by at least 10 percent—the accuracy of Cinematch, its movie recommendation algorithm. "When they announced the competition, I thought that it was a great match for the research that we do at AT&T," says Volinsky. The starting point was the enormous Netflix dataset of real customers' movie ratings.

Volinsky and an AT&T Labs colleague eventually teamed up with five statisticians, machine-learning experts and computer engineers from outside AT&T to win the competition—three years after it began. "When we started working on it, it wasn't obvious what the tie-in was to AT&T. Once we were

spending serious time on it, it became more imperative to justify why we were working on this to our management, make a case for it and clear the path to continue working on it. I was able to justify working on it."

"The algorithms that we developed for the Netflix prize have benefited our research here, and there's definitely been a lot of interest in applying the technology internally to many different projects," says Volinsky. "But that freedom to start working on it in the first place was a function of the culture that we have here." That culture allows AT&T to make sure its top quant talent is constantly expanding their technical skills—and to engage and retain world-class analytical talent.

Google also builds development opportunities right into the work role. Employees spend one day a week on projects that will develop their technical skills and benefit the company. This arrangement is very important for engaging and retaining employees. Says HR Director Stacy Sullivan, "It makes people feel the company values the employees." The numbers bear this out. Fortune magazine named Google the number one place to work in the United States in 2007 and 2008,<sup>21</sup> and turnover at the company is below 3 percent in an industry that averages double digit turnover.<sup>22</sup>

When companies build their analysts' skills, knowledge and competencies in ways that also expand the organization's collective capabilities, everyone wins. Analysts remain professionally relevant and marketable, and the company builds its analytical capabilities and bolsters long-term competitiveness.

## How to retain analytical talent

To keep hold of your best analysts, you need to do more than make sure they are engaged. Although it's certainly easier to retain engaged employees (highly engaged analysts are twice as likely to intend to stay), as we've stated, engagement itself is not enough. Fully 45 percent of the highly engaged professionals we surveyed are at risk of leaving within a year. The statistics for semi-professionals aren't much better. Four out of 10 highly engaged semi-professionals are thinking about jumping ship.

To counter this threat, companies need to create a culture of trust and respect—one in which people are trustworthy, behave predictably, and support one another. In our survey, employees of every stripe were four times more likely to intend to stay when they reported high levels of trust and respect at their company. The numbers are even higher for analytical talent. Analysts who reported working in a strong culture of trust and respect were seven times more likely to intend to stay.

Several things influence employees' perceptions of a trusting and respectful workplace culture (and, in turn, drive retention): a sense that the organization values their contribution and cares about their well being; the presence of formal and informal practices and procedures that support open interactions; and the belief that they can rely on their co-workers. In short, people expect their employers to

respect them, to create safe and supportive work environments and to ensure that employees act 'with integrity, professionalism, clear motives and fairness. (See Figure 18.)

One additional factor is uniquely important for retaining analytical talent—a really good manager. It's common knowledge that supervisors play an essential role in engaging and retaining employees. We found that's especially true for analytical talent.

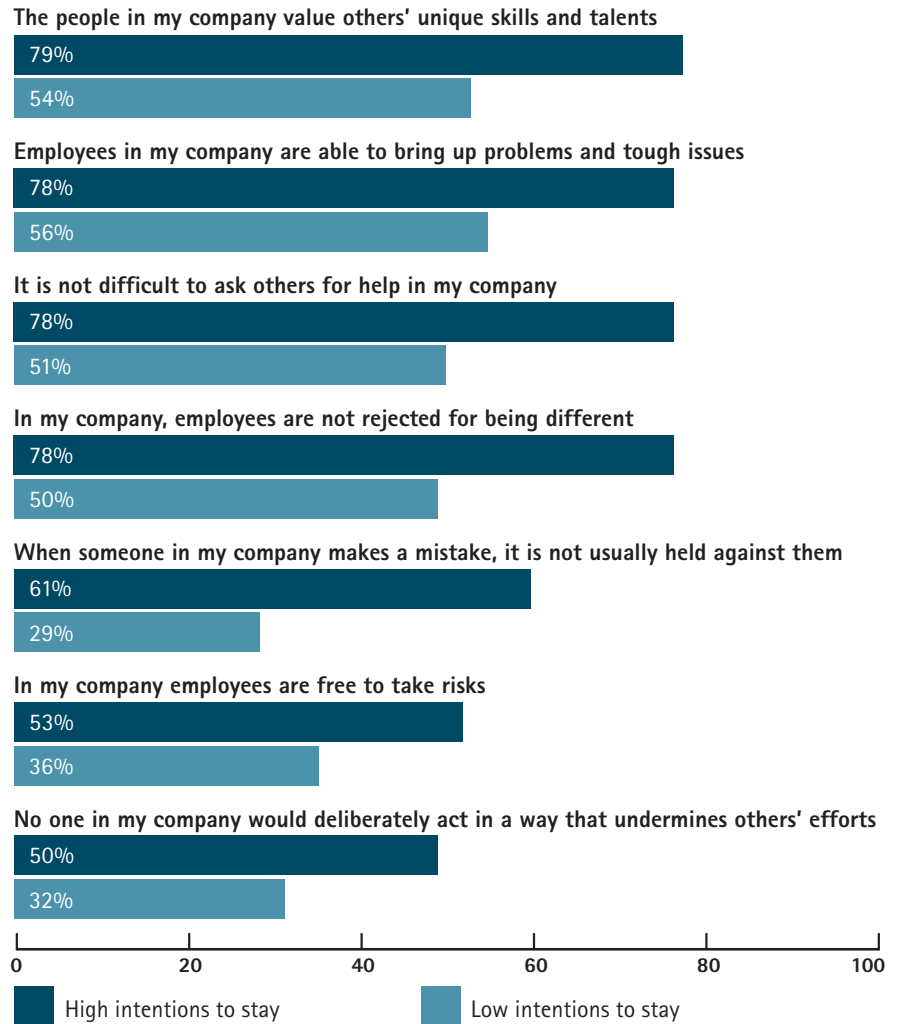
**Analysts are people too: give them the management support they need**

Analysts have a tough lot. Viewed as technical specialists, they are often isolated from their business colleagues (or worse, from other analysts), and they can feel that their contributions are overlooked or misunderstood. But top analysts are rare talent, not human calculators. They need to feel valued and supported by their employer, and they are likely to depart for greener pastures if they don't.

Their immediate supervisor is the most important factor in an analyst's decision to stay or to go. In our study, analysts were three times more likely to stay when they believe their supervisor acts with integrity, treats people fairly and helps employees to succeed. Trust in one's supervisor was especially important to analytical professionals: Pros with high trust in their supervisor were eight times more likely to intend to stay than pros with low trust.

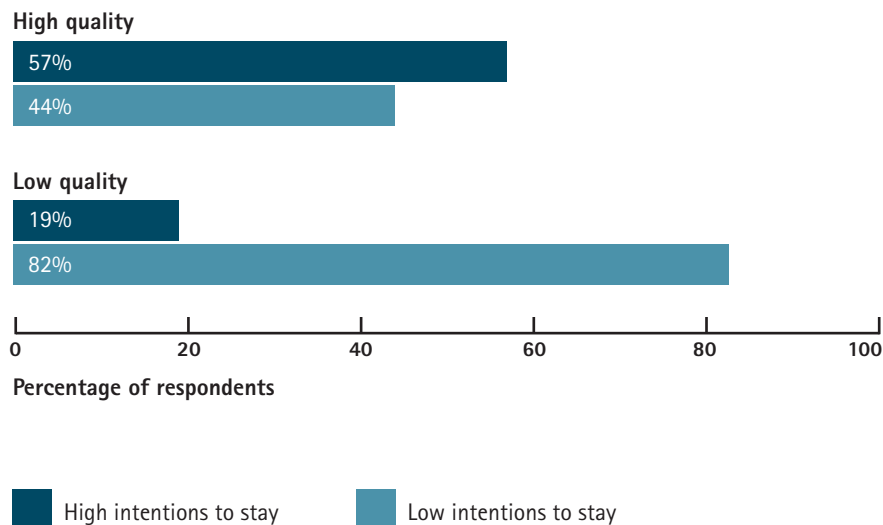
**Figure 18:** Analysts' intentions to stay relative to their perceptions of a culture of trust and respect.

Analysts who say that their employer creates a trusting, respectful and supportive workplace culture are more likely to stay.



**Figure 19:** Analysts' intentions to stay relative to the quality of their relationships with their supervisor.

Analysts who have a high quality relationship with their supervisor are three times more likely to intend to stay with their company.



An effective working relationship with a supervisor is also essential. Analysts whose managers help them solve problems, offer support when they struggle and recognize their potential are far more likely to stay. (See Figure 19.) For instance, the analysts we surveyed were eight times more likely to intend to stay when their supervisors take the time to understand their problems and needs at work. In addition, analysts who believe their supervisor is committed to their professional growth and development were seven times more likely to intend to stay.

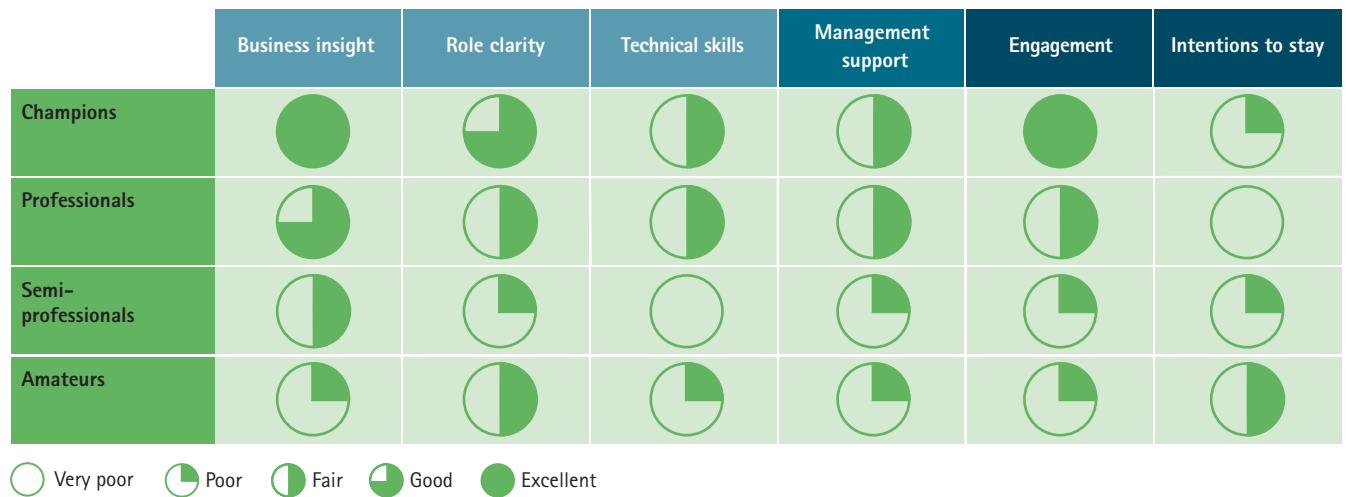
A senior executive with a global financial services company told us that finding and developing managers who can do those things well is his biggest challenge in his 650-person analytics group. The managers not only need to understand analytical techniques and be skilled at building good relationships with their business customers, but they must also be adept at coaching and developing staff. He actively nurtures those managers—keeping up with them regularly by phone and meeting with them personally four to five days a year.

In order to sustain a highly engaged analytical workforce, you need to make sure the people managing analysts understand their role in retention.

Moreover, you need to invest in developing your supervisors' management skills. Supervisors with strong coaching skills and an ability to groom analysts for their next career step are particularly important if your company has a large or fast-growing pool of analytical talent.

**Figure 20:** How are companies doing? Key performance indicators by type of analyst

Companies must improve their ability to engage and retain all types of analytical talent—especially the analytical professionals and semi-professionals who create and use complex models and algorithms and the amateurs who rely on the output of analytical models to do their jobs—by giving them more insight into the business, clearly defining their roles, developing their technical skills and providing the management support they need.



### Counting on analytical talent

Analytical talent is vital to every organization that relies on data-driven insights, and your ability to engage and retain analysts is essential to your company's success. If you are committed to engaging and retaining your analysts, recognize them as a special segment of high-value employees, whose needs vary significantly from those of the average employee. While analysts are motivated by many of the same things that drive other types of talent, they also have distinct preferences and aspirations. Indeed, our research revealed that several factors that have a relatively small

effect on other employees' engagement or intentions to stay are crucial for engaging and retaining analytical talent.

Analysts are most engaged when they understand the business side of things as well as the analytics, when they know what is expected of them, and when they can keep their technical skills and expertise current. They are most likely to stay when they have a high degree of management support. But when we examine how well companies are, in fact, arming analysts with critical information about the business, setting clear roles and expectations, feeding analysts' desire to keep up with the latest tools and techniques, and giving analysts the management support they need, we find significant room for improvement across the board. (See Figure 20.)

A few leading companies have already put these insights into action and are successfully engaging and retaining their valuable analytical talent. But most companies have a lot of work to do. By focusing on these four factors, you can improve analyst engagement and retention, enabling you to maximize the strategic impact of your analytical talent and expand your organization's analytical capabilities.

# About the Research

This report is based on three major studies carried out by researchers at the Accenture Institute for High Performance. Jeanne G. Harris led a groundbreaking study of how organizations use analytics and published the results in a best-selling book (co-authored with Thomas H. Davenport) entitled **Competing on Analytics: The New Science of Winning** (Harvard Business School Press, 2007). The book explains how high-performance businesses are building competitive strategies around data-driven insights that in turn generate impressive business results. Elizabeth Craig co-authored, with Peter Cheese and Robert J. Thomas, **The Talent Powered Organization: Strategies for Globalization, Talent Management and High Performance**

(Kogan Page, 2007), one of the first systematic efforts to chart a strategy for talent management in the global enterprise.

In 2008, as a follow up to these books, Jeanne G. Harris and Elizabeth Craig, together with Henry Egan, launched a new research project focused on the unique challenges of managing analytical talent. We interviewed dozens of executives and surveyed more than 1,367 full-time employees. A comprehensive, web-based survey measured the personal engagement, work attitudes and career motivations of 799 analysts and 568 non-analysts. The respondents were U.S. based employees of companies with at least \$50 million in annual revenues. They represented a wide variety of industries and worked in such functional areas as finance, IT, operations and production, R&D, marketing and sales.

Our survey sought to determine first, what engages analytical talent, and second, what influences analysts' intentions to stay with their companies.<sup>23</sup> We assessed engagement by averaging their responses to nine questions that asked participants to describe the frequency with which they display engagement behaviors at work. We assessed executives' intentions to stay by averaging their responses to three questions that asked about their desire to and expectations and likelihood of staying with their firms now and in the future. We conducted a series of statistical analyses on the survey data to determine what it takes to engage and retain analytical talent. We also interviewed dozens of executives to find out how companies are managing these challenges.

To investigate the relationships between management practices and analysts' engagement and intentions to stay, we conducted two types of statistical analyses. Multiple regression analysis was used to determine the influence of dozens of aspects of employees' experience at work (e.g., job and career opportunities, organization culture, management practices, etc.) on analyst engagement and intentions to stay. We compared the significant predictors for analytical talent to those for non-analytical talent to determine the factors that are uniquely important to analysts.

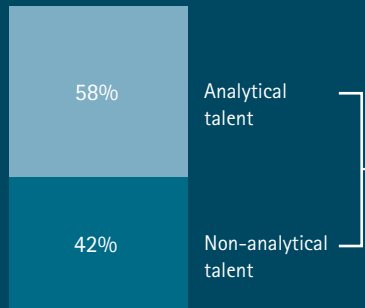
In this report of our findings, we describe the four variables that emerged from the analyses as statistically significant predictors of analyst engagement or intentions to stay. To provide simple illustrations of the effects of the four significant predictors, we report our findings from post-hoc cross-tabulation analyses of business insight, role clarity, technical skills, supportive management, engagement and intentions to stay.

Acknowledgement: Interview findings contributed by nGenera Insight.

## Appendix: About the Sample

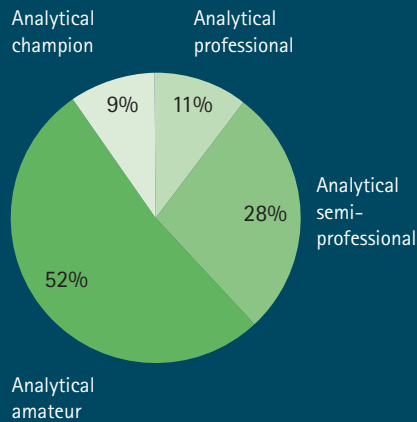
Our sample compared analytical talent (n=799) with non-analytical talent (n=568).

### Type of talent



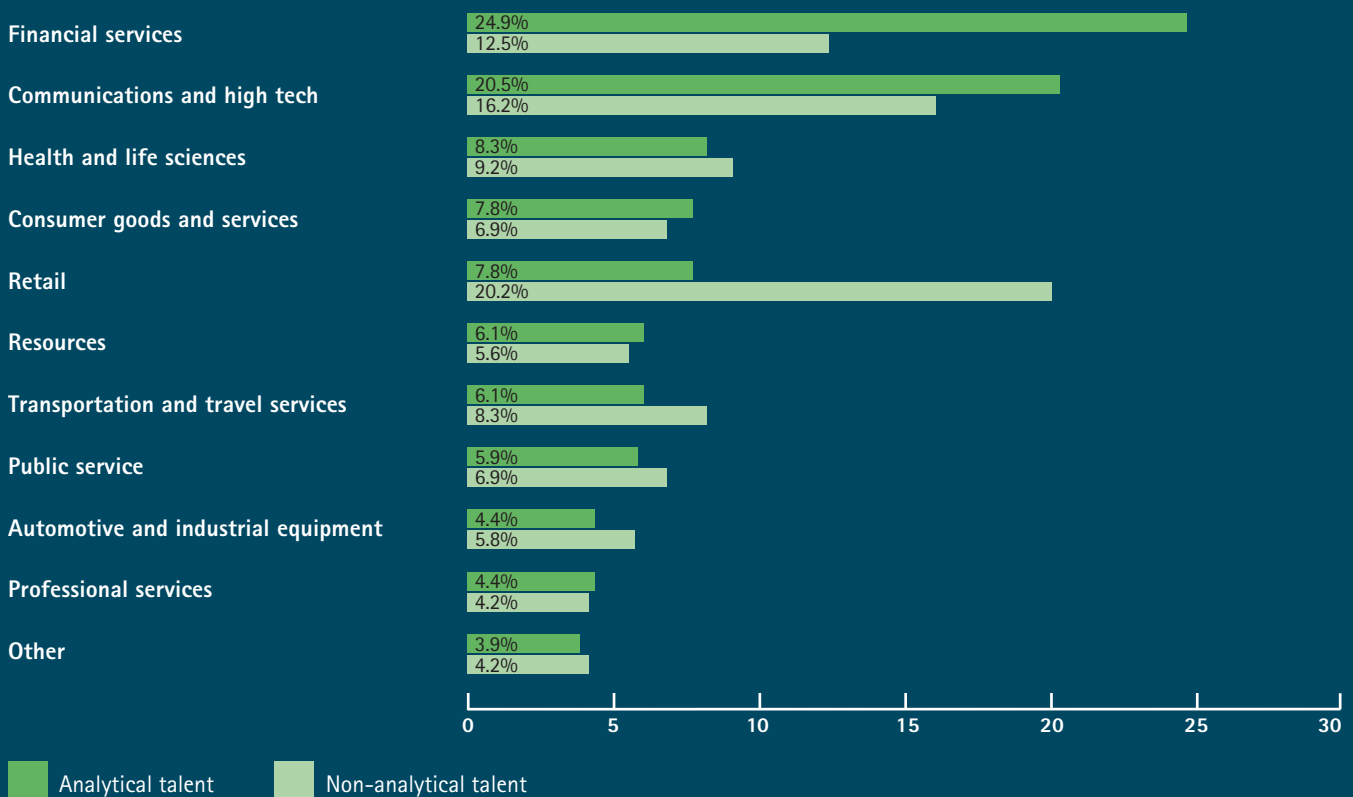
n=1367

### Type of analytical talent



n=799

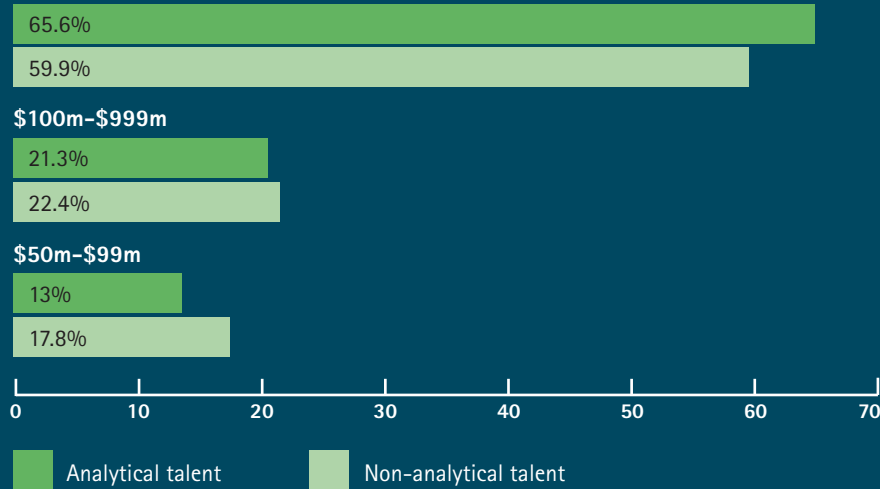
Respondents came from many industries.



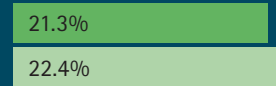
Two-thirds of individuals in the sample worked for large organizations with more than US\$1 billion in revenues, and over half of the companies employed more than 25,000 people.

### Revenues

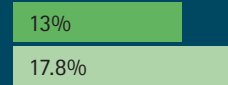
#### \$1bn or more



#### \$100m-\$999m

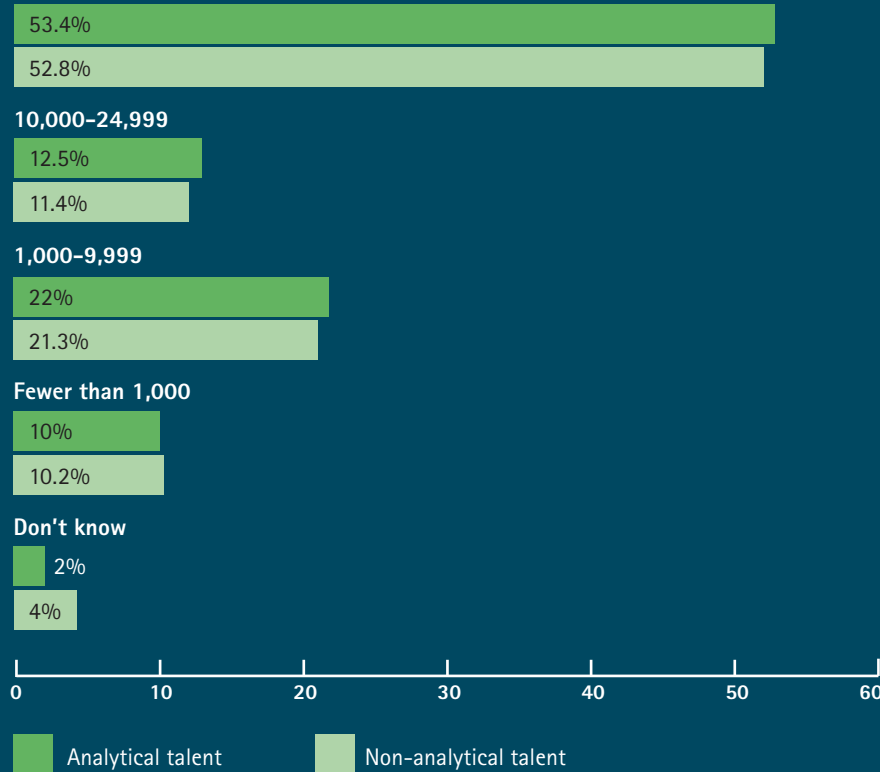


#### \$50m-\$99m

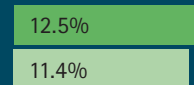


### Number of employees

#### 25,000 or more



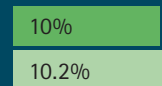
#### 10,000-24,999



#### 1,000-9,999



#### Fewer than 1,000

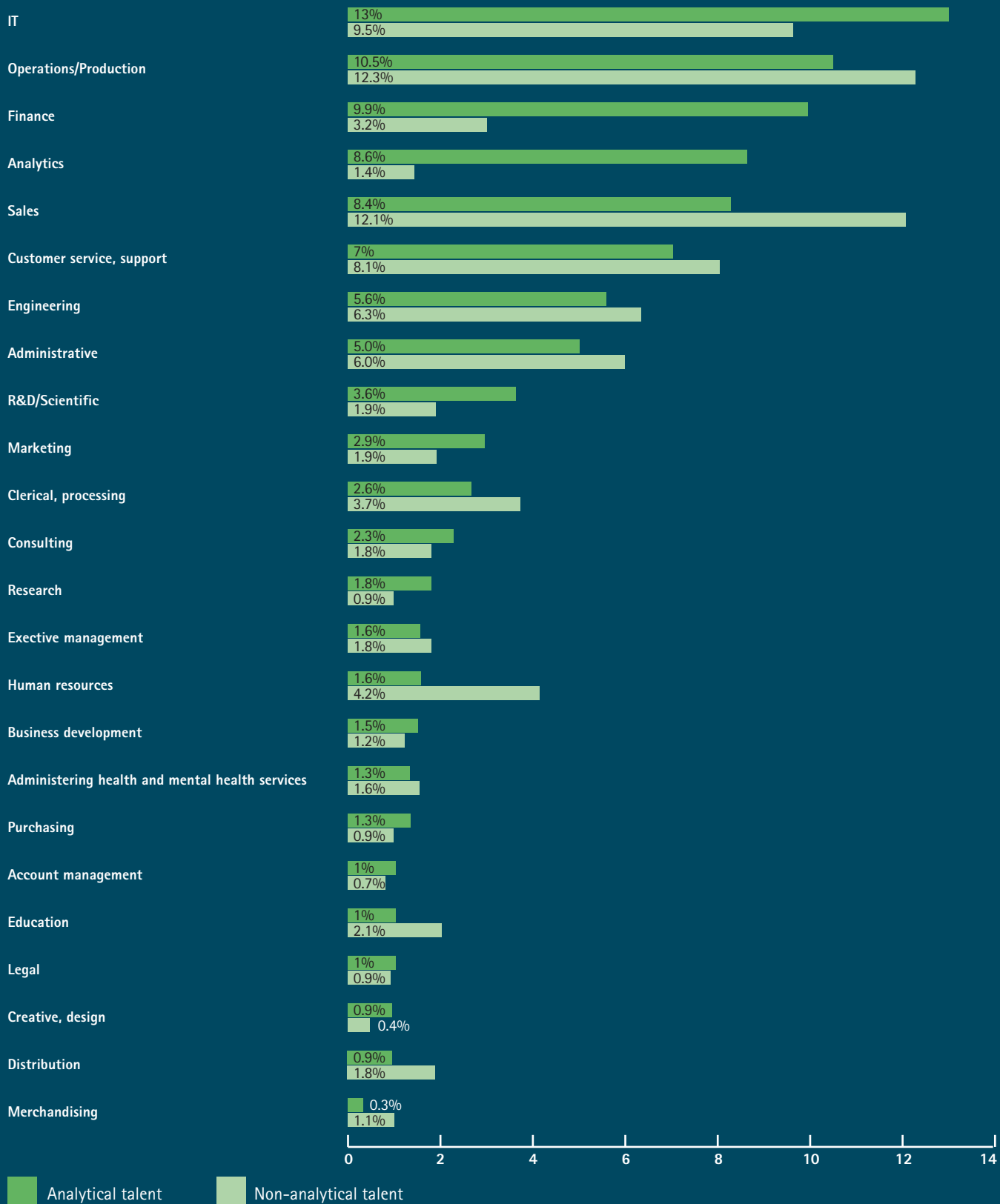


#### Don't know



Survey participants worked in various corporate functions.

Primary functional work area



The sample covered all levels within the organization, from junior staff to chief executives.

Role in the organization



# About the Authors

**Jeanne G. Harris** (jeanne.g.harris@accenture.com) is an executive research fellow and director of research at the Accenture Institute for High Performance. With Thomas H. Davenport, she is the author of **Competing on Analytics: The New Science of Winning** (Boston: Harvard Business School Press, 2007) and, with Davenport and Robert Morison, of **Analytics at Work: Smarter Decisions, Better Results** (Harvard Business Press, February 2010). She is based in Chicago.

**Elizabeth Craig** (elizabeth.craig@accenture.com) is a research fellow at the Accenture Institute for High Performance in Boston. She is the author, with Peter Cheese and Robert J. Thomas, of **The Talent Powered Organization: Strategies for Globalization, Talent Management and High Performance** (New York: Kogan Page, 2007).

**Henry Egan** (henry.egan@accenture.com) is a senior specialist with the Accenture Institute for High Performance in London.

### Notes

- 1 "Competing Through Business Analytics to Achieve High Performance," Accenture Information Management Services, December 2008.
- 2 Thomas H. Davenport and Jeanne G. Harris, *Competing on Analytics: The New Science of Winning*, (Boston: Harvard Business School Press, 2007).
- 3 Thomas H. Davenport, Jeanne G. Harris and Robert Morison, *Analytics at Work: Smarter Decisions, Better Results* (Harvard Business Press, 2010).
- 4 Peter Cheese, Robert J. Thomas and Elizabeth Craig, *The Talent Powered Organization: Strategies for Globalization, Talent Management and High Performance* (Kogan-Page, 2007).
- 5 When Accenture surveyed 254 executives in 2008, nearly three-quarters said that their companies were increasing their business analytics usage. See "Competing Through Business Analytics to Achieve High Performance," Accenture Information Management Services, December 2008.
- 6 Thomas H. Davenport and Jeanne G. Harris, *Competing on Analytics: The New Science of Winning*, (Boston: Harvard Business School Press, 2007).
- 7 Chris Donnelly, "Shopping for Scarce Retail Talent: Driving High Performance in the Retail Industry Through Strategic Talent Management" (Accenture research report, 2009).
- 8 On September 21, 2009, Netflix declared "Bell Kor's Pragmatic Chaos," a global group of researchers, scientists, and engineers, as winners of its \$1 million (US) contest to improve Cinematch. The winning entry improved the model's performance by 10.6%.
- 9 Raymond R. Panko, "What We Know About Spreadsheet Errors", *Journal of End User Computing* 10 (1998): 15-21. Revised May 2008: <http://panko.shidler.hawaii.edu/SSR/My Papers/whatknow.htm>.
- 10 We took into account other factors that are known to affect employees' engagement and intentions to stay by controlling for age, tenure, education, gender, level of responsibility (dividing jobs into manager, manager of managers, manager of senior managers, and CEO) and company size.
- 11 Elizabeth Craig and Lauren Ready, *How to Create and Sustain a Highly Engaged Workforce*, Accenture Institute for High Performance research report, forthcoming 2010.
- 12 According to one study, companies with highly engaged workforces enjoy better performance—up to a 103 percent higher success rate (measured in terms of profits, productivity, customer satisfaction and employee retention)—than their counterparts with less-engaged employees. See James K. Harter, Frank L. Schmidt and Theodore L. Hayes, "Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis," *Journal of Applied Psychology*, 2002.
- 13 J.R. Hackman and G.R. Oldham, "Motivation Through the Design of Work: Test of a Theory," *Organizational Behavior and Human Performance*, 1976.
- 14 In other research, we've found that engagement levels contribute only a small amount toward explaining why people stay or go. See Elizabeth Craig and Lauren Ready, *How to Create and Sustain a Highly Engaged Workforce*, Accenture Institute for High Performance research report, forthcoming 2010.
- 15 Percentages include responses of "likely" or "very likely."
- 16 Jeanne G. Harris, "How to Fill the Analytics Talent Gap?" *Strategy & Leadership*, 2008.
- 17 The results of the cross tabulations presented in this report represent comparisons between the top and bottom quartiles for the relevant variables. For example, in this case, more than half of the analysts in the top quartile of "business insight" were in the top quartile of "engagement", while just 18 percent of the analysts in the bottom quartile of "business insight" were in the top quartile of "engagement."
- 18 According to research by the late Michael Driver, as cited in: Brian O'Reilly and Antony J. Michels, "Reengineering the MBA," *Fortune*, January 24, 1994.
- 19 <http://strategic-hcm.blogspot.com/2008/05/hr-for-innovation-google.html>.
- 20 Bala Iyer and Thomas Davenport, "Reverse Engineering Google's Innovation Machine," *Harvard Business Review*, April 2008.
- 21 <http://money.cnn.com/magazines/fortune/bestcompanies/2008/>; [http://money.cnn.com/magazines/fortune/bestcompanies/2007/full\\_list/](http://money.cnn.com/magazines/fortune/bestcompanies/2007/full_list/)
- 22 Sarah Fletcher, "Google: Recruiting and Developing Top Talent." Accessed Aug 26, 2009: <http://www.hrzone.co.uk/item/164452>; The average for high tech companies is 14 percent—see "Winning the war for talent in the high-tech industry," SAP Executive Insight 2008.
- 23 Employees' intentions to stay are routinely used as an indicator of likely turnover behavior. Extensive research has shown intentions to stay to be powerful predictors of actual retention, especially among professionals and white-collar workers. See Aaron Cohen and Nadine Hudecek, "Organizational Commitment-Turnover Relationship across Occupational Groups," *Group & Organization Management*, 1993; and R. Steele and N. Ovalle, "A Review and Meta-analysis of Research on the Relationship between Behavioral Intentions and Employee Turnover," *Journal of Applied Psychology*, 1984.

## About Accenture

Accenture is a global management consulting, technology services and outsourcing company. Committed to delivering innovation, Accenture collaborates with its clients to help them become high-performance businesses and governments. With deep industry and business process expertise, broad global resources and a proven track record, Accenture can mobilize the right people, skills and technologies to help clients improve their performance. With more than 177,000 people in more than 120 countries, the company generated net revenues of US\$21.58 billion for the fiscal year ended Aug. 31, 2009. Its home page is [www.accenture.com](http://www.accenture.com).

## About the Accenture Institute for High Performance

The Accenture Institute for High Performance creates strategic insights into key management issues through original research and analysis. Its management researchers combine world-class reputations with Accenture's extensive consulting, technology and outsourcing experience to conduct innovative research and analysis into how organizations become and remain high-performance businesses.



*High performance. Delivered.*

Copyright © 2010 Accenture  
All rights reserved.

Accenture, its logo, and  
High Performance Delivered  
are trademarks of Accenture.

