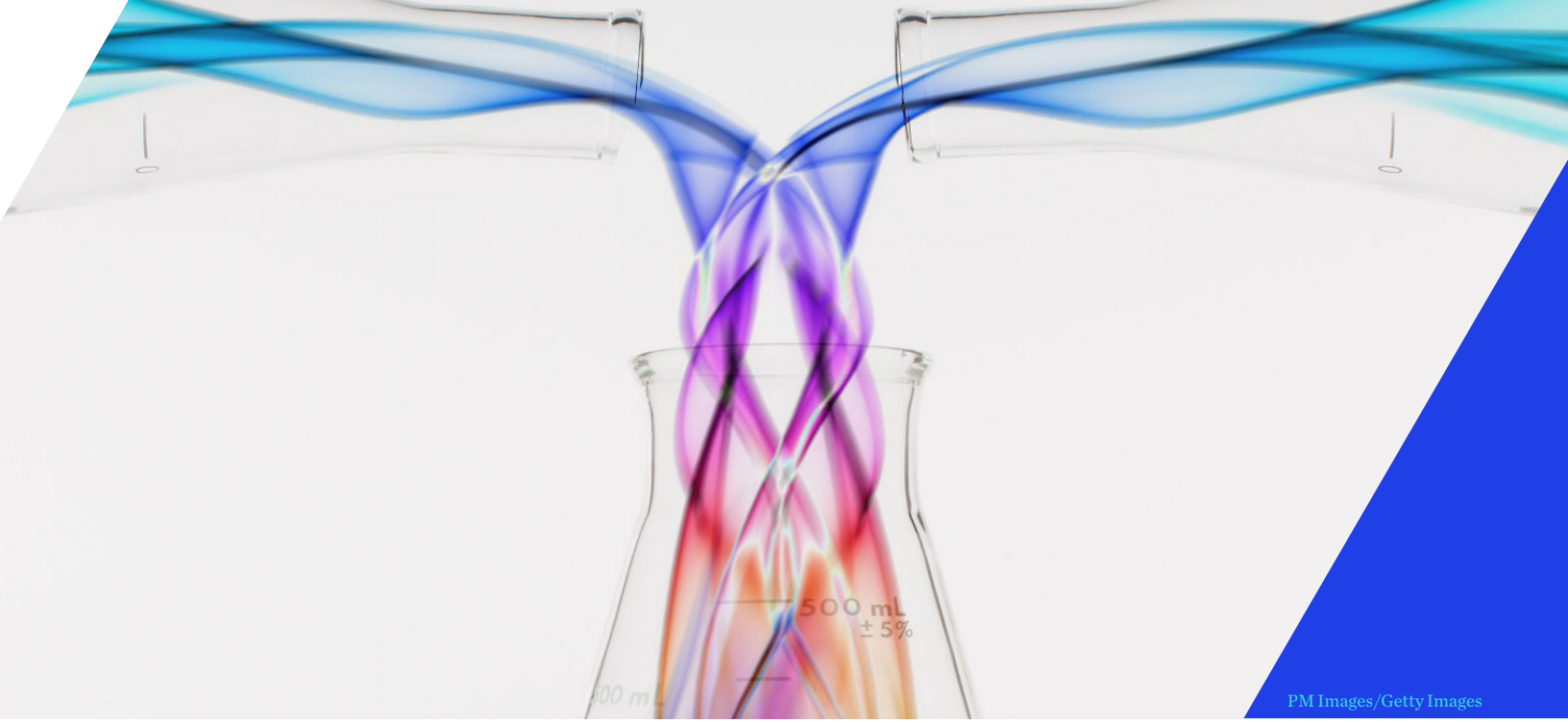

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Rebooting analytics leadership: Time to move beyond the math

Brian McCarthy, Chris McShea, and Marcus Roth

To help their organizations capitalize on artificial intelligence and analytics, CAOs must do more than demonstrate their technical chops. They need to lead like a Catalyst.

The role of the chief analytics officer (CAO) is being thrust into the spotlight as artificial intelligence (AI) technology continues to improve—and prove its value. AI and other advanced analytics will unlock $9.5 trillion to $15.4 trillion annually, with recent AI advances such as deep learning alone making up nearly 40 percent of the total.[1]

Given the enormity of the stakes, it's no surprise that CEOs are asking their CAOs (or those assuming CAO duties under a different title) to deploy and scale AI and advanced analytics—stat. Yet while the opportunity is great, so too is the challenge. In McKinsey research earlier this year, only 8 percent of senior executives reported that their organization engages in practices identified as key enablers for AI and analytics at scale (Exhibit 1).[2]

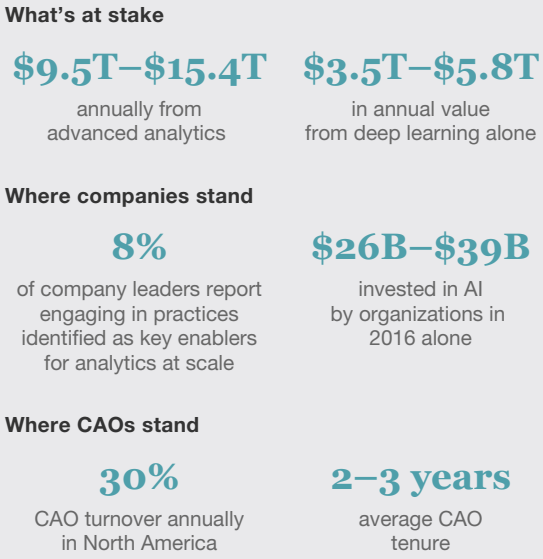
The reasons for low success rates to date are numerous, as CAOs face a barrage of headwinds—

[1] See "Notes from the AI frontier: Applications and value of deep learning," McKinsey Global Institute, April 2018, on McKinsey.com.

[2] See Peter Bisson, Bryce Hall, Brian McCarthy, and Khaled Rafai, "Breaking away: The secrets to scaling analytics," May 2018, McKinsey.com.

EXHIBIT 1

CAOs are under pressure to deliver.



Source: McKinsey Global Institute analysis; McKinsey analysis

from data silos and rising data risks to leaders and front lines resistant to a new way of data-driven decision making—while experiencing some of the lowest tenures among their peers (about two to three years).[3] One analytics leader told us, for example, that while his organization hired him to create a data and analytics function that could scale to drive growth, progress was constantly derailed, as his team was forced to spend outsized time generating basic reports for narrowly focused business leaders.

How can CAOs cut through the whirlwind of obstacles to help their organization capture a larger piece of the advanced analytics prize than their competitors?

Based on our extensive experience working with analytics leaders and a series of in-depth interviews with some who have been successful, we believe one key to success will be for CAOs to assume the role of Catalyst—a new persona that redefines leadership for deploying analytics and AI at scale.

Successful CAOs of times past

Historically, we've seen that successful CAOs have often been buoyed by an analytically minded CEO or a mission-critical situation. Their organizations fit into one of three types:

1. Born digital, with data and analytics as their lifeblood, leading them to position their CAOs as core members of the C-suite.

2. Led by an analytically driven CEO who aggressively made analytics the top priority and rallied all executives and business units behind the effort.

3. In crisis, facing a significant threat to their business model and, sometimes, to their very existence. These organizations required analytics to compete and put CAOs squarely in charge of their business transformation.

But most companies faced a different reality: an organizational desire to move to an analytics-driven approach but without a forceful push from a visionary CEO or existential crisis.

Among these companies, analytics leaders made progress in line with the times. The 1990s were arguably ground zero for data and analytics, as the Internet had only just opened to the public and begun generating data. The title "CAO" didn't even exist yet. Simply establishing a data-science capability somewhere in the organization amounted to success, putting math-minded mavericks and statistical geniuses in the best position to thrive (Exhibit 2).

The early 2000s saw a massive increase in data generation, thanks in large part to broadband and the rise of Internet-based businesses and social-media platforms. Better data capture and analytics

[3] Based on a McKinsey survey of 94 leaders managing analytics functions, including CAOs, chief data officers (CDOs), and chief information officers (CIOs).

EXHIBIT 2 **Dominant CAO personas emerged as data and analytics advanced over the past quarter century.**

Maverick ca 1995	Rocket Scientist ca 2000	Evangelist ca 2005	Driver ca 2010	Steward ca 2015	Catalyst ca 2018
Turned math and computer science into a strategic advantage and captured first-mover spoils.	Helped his or her organization build out its data-science team and formalize data science into a competency.	Helped elevate his or her organization's understanding of the value of data and analytics and worked to democratize data. Around this time, the title of CAO became more commonplace, first in industries such as financial services, reflecting this shift in understanding.	Brought a clear vision and road map for creating a data-driven enterprise; however, often fought for his or her "turf" with little consideration for the perspectives of C-suite peers, creating the negative perception that he or she had the "smartest person in the room" syndrome.	Often a long-term company leader, the Steward didn't always have a technical background but delivered the diplomacy to help the company begin to address the organizational issues that were stifling progress.	Takes a leadership approach in building a "coalition of equals" among the business, the CAO, and IT to help ensure business impact and provide a pragmatic approach to achieving it.

technologies emerged in response, raising the bar for success. CEOs began placing higher expectations on analytics leaders, and the true role of CAO was born. In this environment, data evangelists who could seed data and analytics usage a bit more broadly—even if unevenly—throughout their organizations were heralded for their achievements.

However, the next decade brought a new level of urgency. Digital natives became increasingly successful, upping the intensity of competition. The number of data-generating smartphones surpassed the number of humans on the planet, making data-hungry machine learning techniques even more commercially viable. Organizations needed a more aggressive CAO to embed analytics more consistently across the organization. While good at achieving this goal, the aggressive CAO's strong push, against what was often significant organizational resistance, left many organizations soured, requiring a new CAO persona to facilitate further change.

A demanding environment for today's CAOs

This brings us to today, when organizations are looking to CAOs to capture a share of the huge AI opportunity, which necessitates a degree of scale not previously required—and in a far more demanding environment.

Digital natives are ratcheting up the competition for wallet share to new levels as they push into an increasing number of sectors, from grocery to financial services.

The use of AI and analytics has become table stakes in delivering consumers the personalized attention and experiences they demand as the universe of analytics tools expands and becomes more widely available thanks to the cloud. In fact, nearly a third

of the value these technologies are expected to drive in the near term is projected to come from marketing and sales use cases.[4]

At the same time, risks have grown exponentially, as organizations balance concerns around data privacy and information security. "Nearly every analytics project that we're working on right now has run into a delay as we have encountered new data-security requirements," said one analytics leader at a large insurer.

Against this backdrop, CAOs also face plenty of organizational challenges as they strive to stand up a scalable analytics function. They must navigate long-standing processes, stitch together data silos, and challenge legacy power structures that keep analytics in the back seat to business.

CAOs often find themselves doing this heavy lifting with a limited sphere of influence. They typically do not have the profit-and-loss or revenue accountability that would grant them due power in the organization. Moreover, like chief marketing officers a decade ago, CAOs need—but typically lack—a true seat at the C-suite table, placing them at a disadvantage when trying to obtain adequate funding or resources to power the analytics agenda. (See sidebar, "The CEO mandate: Fact or fiction?" for a discussion on the importance of CEO support for the CAO role.)

Enter the Catalyst

Arguably, none of the previous CAO personas could succeed in today's landscape. We've entered an era that requires a new CAO persona—the Catalyst—who embraces a style of leadership geared toward addressing the current demands, roadblocks, and scrutiny most companies face today when it comes to deploying AI and advanced analytics at scale. Catalysts approach their role very differently than did past CAO personas, in ways that those with more scientific and technical career backgrounds might not have ever done before. They both facilitate and lead the charge in five key areas. (To see if you approach the CAO role like a Catalyst, see Exhibit 3.)

The CEO mandate: Fact or fiction?

There's much debate about the likelihood of success without a CEO mandating that business leaders work with the CAO and his or her team to embed analytics into key operations, products, and decision-making processes. Indeed, the tone from the top is critical, emphasized one analytics leader: "If you don't have that message as clear as can be from the top, you will run into some of the challenges that we have faced, such as the relationship between data and, ultimately, IT versus analytics."

However, while a CEO mandate is imperative for paving the way for a CAO's success, it doesn't work like a magic wand, instantly pressing business leaders into action with a wave in the air. In other words, a mandate is not a substitute for CAO leadership.

"It's the CEO support that gets you in the door, but it's up to you to drive the change and build the right relationships," said a financial-services analytics leader.

[4] See "Notes from the AI frontier: Applications and value of deep learning," McKinsey Global Institute, April 2018, on McKinsey.com.

1. Convening a coalition of equals

Catalysts build a tri-headed "coalition of equals" made up of the CAO, the business, and IT. Creating this coalition might be the most critical driver for bringing analytics initiatives to scale and success—and is often the most difficult to achieve due to long-standing hierarchies and the CAO's position as the "new C-suiter on the block."

As a group, this coalition of equals understands the company's need to compete with integrated capabilities in this hypercompetitive era and that silos—of data, business functions, or culture—will prevent them from doing so. It recognizes that integrating digital and analytics elements into nearly every existing product and service creates opportunities to offer entirely new products and services. The group knows success in these efforts is predicated on joint efforts, close collaboration, and shared ownership. The coalition shares equally in decision making, and coalition members rally around a common goal: gaining a disproportionate share of value from advanced analytics and AI compared with their competitors.

The former analytics leader at a leading financial-services company told us how developing such a coalition of equals enabled his company to build enterprise-wide capabilities, scaling from about 30 to 200 profitable, revenue-generating use cases in two years.

An analytics leader at an online retailer also found the coalition of equals instrumental in maintaining momentum when the innovation process is in its infancy. "Moving to AI-driven automation is a challenging process, and often it's the second and third iterations that work," he said. "But you have to have faith and momentum to get to those second and third iterations. The partnerships I had with other leaders allowed me to drive organization-wide changes and adoption."

Catalysts actively facilitate and take a leadership position in building the coalition, while bringing along other stakeholders at multiple levels. They do so in the following ways:

- **Recognizing that while a technical background is critical, there's much more to driving success.** "While it's critical to get the math right, just getting the math right doesn't drive the change," said one insurance analytics leader. "You need the technical background to establish credibility, but the job is less about the technical aspect and more about employee development, resource allocation, vision setting, and leadership to manage the pace of change."

- **Putting business value front and center.** The same insurance analytics leader stated: "It's gaining the trust of business-unit leaders by helping them to understand how the models influence business impact and, ultimately, drive profit and loss. That's what they're interested in."

- **Spending an outsized proportion of time on communicating with the CEO and other C-suite leaders to maintain their support.** For example, a financial-services analytics leader set up monthly operational committee meetings with his COO, CIO, CFO, and business-unit heads to set a shared vision and review priorities, progress, new value-creation opportunities, and investment needs. Throughout the month, he met separately with committee members, along with other company leaders, to maintain alignment and buy-in. He estimated that more than one-third of his time was spent on executive alignment and strategy.

Another analytics leader emphasized the need to communicate—and to do so in a way that's in line with the C-suite's level of knowledge and past experience. For example, in presenting

new pricing methods to business leaders, he highlighted that the notions of understanding underlying costs wouldn't change; the team would simply bring in more data about consumer behavior to drive a more precise understanding of pricing.

- **Spending considerable time codeveloping strategies with business leaders to align analytics opportunities and innovation with the business unit's vision and priorities.** Joint ownership is essential, one analytics leader emphasized. He worked with business leaders to create a shared scorecard so that both analytics and the business were measured on the same outcomes.

  Another leader found that starting from a perspective of joint learning and sharing helped him overcome skepticism and "earn the right" to advise on organizational implications and influence business strategy.

- **Viewing IT as a strategic partner rather than simply as an execution arm.** This can include bringing IT into meetings to develop and formalize new business strategies, soliciting input from engineering teams, and ensuring IT receives recognition for its role in transformation initiatives. Ultimately, this type of partnership approach not only helps build a motivated IT organization but also attracts the best IT talent.

2. Building an enterprise capability

Catalysts also play the leadership role in analytics capability building across the organization, including working closely with the following:

- **The business** on talent strategy—from hiring analytics translators to implementing agile software-development processes. One analytics leader we spoke with used internal hackathons that teamed analytics staff with business units to solve a critical problem. This not only helped analytics staff build translator skills to bridge data science and business but also helped raise the business's analytics IQ and gain a new cadre of "believers."

- **IT** on data and technology strategy, including data governance and analytics methods and tools.

- **Risk and compliance** (including the chief risk officer) as well as leaders across the organization on risk-mitigation strategies.

3. Integrating advanced analytics into the workflow

Catalysts lead and advise on how to integrate advanced analytics insights into workflows and decision making. They help business leaders understand that an analytics-driven organization requires a different approach to managing and how teams work. They know the business and its objectives and can pinpoint opportunities to embed more sophisticated analytics.

For example, the insurance analytics leader we spoke with drew from design-thinking methods to help his business identify how and where new data sources, such as genomic data, might influence traditional underwriting workflows.

Another analytics leader worked closely with his counterparts to educate and prepare the organization to overcome the human biases that could sabotage the move from traditional manual processes to AI-augmented processes.

4. Acting as a change agent

At their core, Catalysts are change agents—able to navigate organizational barriers to analytics

adoption. Here, communication and relationship building on both individual and organizational levels are necessary. Leaders we spoke with used town halls, one-on-ones, and monthly and quarterly update meetings with key stakeholders to build support.

EXHIBIT 3 Are you a Catalyst?

Question	How a Catalyst would respond
In executive conversations, do you find yourself speaking primarily about analytics models and technology and citing technical challenges to business problems?	No. While I'm well versed in the technical aspects of my work, I speak first and foremost about the business value in executive conversations and drive end-to-end analytics projects to business outcomes.
Would your peers say that one of your top three strengths is an ability to collaborate?	Yes. I'm an active listener with solid emotional intelligence, which allows me to work well with widely divergent stakeholders, forge partnerships, and create a positive culture. I communicate often with my peers and their reports as we work together to drive business value through analytics. And I work to ensure that all team members are recognized for their efforts, including IT, services, and other "back-office" teams that don't typically get acknowledgment or credit.
Are you setting a rapid pace of analytics adoption to capture a greater portion of the available value ahead of competitors?	Yes. I communicate a compelling vision to rally the organization into action. I'm monitoring leading analytics-driven companies, calibrating my organization's pace to theirs rather than to a legacy pace. I drive shared scorecards between analytics units and business leaders, deliver on clear milestones, and provide weekly progress updates to drive urgency and create accountability. And I empathize with workers whose jobs may be affected by analytics and help them learn new skills and adjust to the change.
Are you creating an environment that attracts data talent?	Yes. I am well versed in analytics roles and career paths. I ensure analytics professionals are sufficiently compensated, using a strong business case for the tangible return on talent investment. And I know the importance of job satisfaction. As an example, I implement the tools and processes necessary to minimize data wrangling, enabling data scientists to focus on what they love most—solving big problems.
Are you working to increasingly decentralize your analytics function as it matures?	Yes. I don't look to "protect" my territory. I have a plan to continue to export talent and capabilities to other parts of the organization. I view decentralization as a goal and sign of success and look for ways to enable access and transparency for everyone, from senior executives to sales to marketing staff.

One leader we spoke with used a tiered approach—first building support with the top ten influencers, then another 50 key influencers, then 500, and beyond. Change doesn't occur overnight, and this work can take years. He said, "Ultimately, the goal is to get to the point where every employee has an analytics mind-set."

5. Advising their boards and CEOs

Catalysts support and advise their boards and CEOs, providing them with a foundational knowledge on the role of AI, orienting members on the company's journey compared with competitors, and educating them on the governance issues the company will face. They present both the fullness of the opportunity and the difficulty of the journey through one-on-one meetings and other venues. For example, one leader we spoke with identified data scientists and other team members who delivered "outsized contributions" and scheduled informational conversations with the CEO so they could share the work they were doing. "It was a great way for the CEO to gain a deep understanding on some of the key challenges, opportunities, and wins that we'd had and a great way for the data scientists and their managers to receive recognition from the CEO,"he said.

How to become a Catalyst

Any CAO not regularly engaging in these activities is likely not yet a full-bore Catalyst. A sure sign that a CAO might be more on the path to "cataclysmic" rather than "catalystic" is that he or she is still "pushing" business units to embed analytics in meaningful ways rather than experiencing a "pull" from business units to partner strategically to transform the business.

"In the beginning, you have to do what the business units are asking for—like producing a report on customer attrition," said one analytics leader. "Over time, we saw the nature of the requests began to change. Instead of asking for a report, business leaders asked us what actions we could take to drive change."

Based on our experience with helping CAOs make the switch to Catalyst, there are three ways to get started.

Take time to take stock

It's important to take the time to conduct a thorough assessment of where the organization stands in terms of analytics IQ and adoption as well as where you stand as a leader.

To assess the current organizational situation, answer questions such as: How much value have prior analytics initiatives delivered? How much credibility does the function currently have? What expectations exist when it comes to both investment in analytics and business impact? Where are the pockets of resistance and openness? What tone did my predecessor set? How did he or she lead?

Understanding both past and present organizational dynamics will help illuminate existing perceptions that might derail your progress.

At the same time, it's important to take an honest look at your own leadership skills. All leaders we interviewed highlighted that their ability to influence every level of the organization was critical to their success. "Most of the day-to-day leadership is happening in small-group settings where you're influencing folks in their thinking," said one leader.

How you're perceived will have a strong influence on your organization's success. Are you balancing expertise with empathy? Do you actively encourage participation and input from others? Do you bring a positive attitude regardless of how things turn out?

With this body of self-knowledge and organizational knowledge, you can better plan your strategy. One

CAO we recently worked with realized that while he excelled when it came to the more technical aspects of the job, breaking down silos and getting control of the narrative didn't come naturally to him. To succeed, he not only hired new talent who could complement his leadership but also enlisted the help of an executive coach for six months to help him manage the difficult conversations he had to have as he worked to forward the analytics agenda. Coaching offered the leader proven approaches so that, regardless of the outcome, participants left the room with greater understanding and respect.

Create a stakeholder map

While determining the state of the union offers an organizational perspective on barriers to change (including yourself), the stakeholder map can help identify key decision makers and gauge their individual appetite for analytics.

This is vital reconnaissance for everything from building your communication plan to prioritizing which analytic initiatives to pursue and when. The financial-services leader we spoke with used his stakeholder map (literally drawn as a pyramid on a piece of paper) as a compass to guide his relationship-building journey with nearly 60 general managers and organizational leaders across his company. He began his efforts focused on 15 leaders he deemed most critical and, over his first weeks and months, scheduled regular meetings to learn their priorities, concerns, and expectations directly. "Everyone comes from a different place, and there's a lot of difficult conversations that need to happen," he said. "Making personal time can help."

Increase your communications, regardless of where you are in the analytics transformation

The one regret we heard from successful analytics leaders was that they spent the bulk of their time at the outset on talent development and getting the technical details right. In hindsight, they told us, they wished they had spent more time on communications and alignment with the business in their early days to pave a faster path to success. The analytics leader of an online retailer found that external brand-building activities, such as externally published articles about the company's analytics innovation efforts, not only supported talent acquisition but also drove increased internal support. "Inevitably, people would receive the published article from friends and colleagues at another company," he said. "When someone in operations gets a note about how exciting the work is that the data-science team is doing, you get a lot of credibility."

Ongoing communications also help build the bridges necessary for change. Being a change agent isn't easy—as is commonly said, it can be lonely at the top—and many times it puts leaders at odds with others throughout their organizations. One CEO advised his analytics leader that "things may go your way only 50 percent of the time, and the other half we'll do something that's not fully aligned with where we want to be because the short-term benefit is greater to us."

Those who are successful typically find that a collaborative, problem-solving style fostered through ongoing communication is imperative.

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Ultimately, we believe the Catalyst will become the dominant persona for CAOs of the next decade. The Catalyst skill set best positions CAOs to not only overcome today's challenges but also tackle those their organizations could encounter in the future—some as a result of the Catalyst's own success. For example, with their experience to date in capability building and deep knowledge of analytics outputs, Catalysts are well positioned to help in reskilling efforts for those whose jobs become more automated

as AI and other advanced analytics become business staples.

CAOs who embrace the Catalyst persona may also be better prepared to accept wider leadership opportunities. Traditionally, CEOs have been hired primarily based on leadership and industry experience. But as data and analytics become more ingrained within businesses, we expect that the next wave of CEOs will also need strong analytics expertise. With analytics acumen and Catalyst leadership skills, today's CAOs could well become tomorrow's CEOs. ◆

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