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Enterprise Data: The Secret Weapon for Digital Transformation

HOW TO NAVIGATE THE TURBULENCE OF DIGITAL TRANSFORMATION

IN ASSOCIATION WITH: **Hitachi Vantara**

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"MILLENNIALS WANT PRODUCTS AND SERVICES DELIVERED TO THEM IN NEW WAYS. THEY INCREASINGLY INTERACT WITH FIRMS THROUGH A MIX OF DIGITAL CHANNELS, AND THEY ARE ADOPTING MOBILE APP-BASED INTERACTIONS. THIS WILL INCREASE THE PRESSURE ON CORPORATIONS TO EVOLVE AND CHANGE."

— Ravi Kalakota | *Partner, LiquidHub*

Introduction

Digital transformation is top of mind for CIOs and business leaders for clear and practical reasons. It offers an opportunity to create new revenue treams and meet changing customer demands, as well as a way to address the rise of digital insurgents trying to hijack core markets.

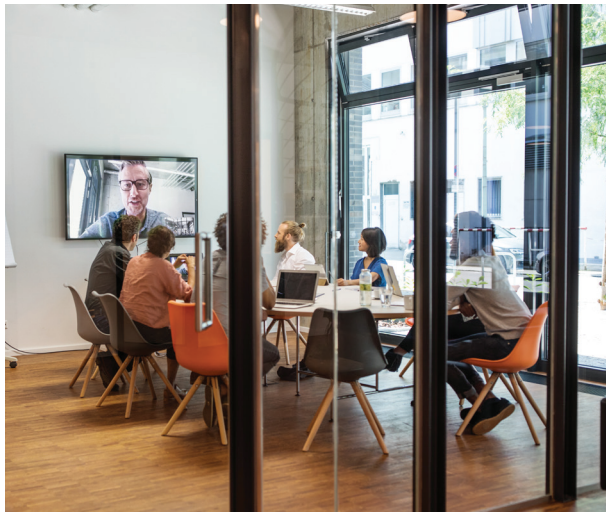
Unfortunately, while the potential of digital transformation is great, so too are the challenges for established companies. In one study, 89% of CIOs said that in addition to generating opportunities, moving to the digital world creates new, vastly different and higher levels of risk . Adding to the challenge, enterprise leaders don't have proven models that guide disruptive change. While best practices are emerging, CIOs must create transition roadmaps that accommodate their organizations' unique needs rather than expecting ready answers. Finally, incumbents are at a disadvantage compared with startups and market insurgents that enjoy the luxury of greenfield operations. Incumbents run significant existing IT operations that continue to provide value and must be blended with transformation cornerstones such as cloud, mobile and analytic technologies.

Nevertheless, the competitive pressure to act will only get stronger in the months ahead. "Are we going to see more or less digitalization over the next three years? Of course, the answer is more," says Ravi Kalakota, partner at LiquidHub, a consulting company that specializes in business and digital transformation. "Millennials want products and services delivered to them in new ways. They increasingly interact with firms through a mix of digital channels, and they are adopting mobile app-based interactions. This will increase the pressure on corporations to evolve and change."

Against this backdrop, it's become fashionable to talk about bimodal or two-speed IT, where CIOs essentially oversee two separate types of operations with quite different cultures. In this model, one group works "to keep the lights on" by serving a traditional IT management and maintenance role for legacy investments. Here, success in established business processes continues to be measured by high availability and low risk for problems such as security breaches. A second group adopts the "fail fast, learn quickly, move forward" mantra, similar to the entrepreneurial orientation of market insurgents.

On paper, this two-pronged approach looks attractive, but in reality it creates unnecessary boundaries for organizations that already struggle with poor collaboration and data sharing among departments. Another problem: this separation of powers focuses too much on IT – transformation pioneers are learning that success is achieved less by technology itself and more by close relationships among change-minded CIOs and line of business (LOB) leaders. "Modernization can't happen on the back of IT alone," says Michael Mathews, CIO of Deluxe Corp. "Transformation represents an evolution of business processes. Without a close partnership between IT and business, successful transformation just isn't going to happen."

What's needed is a common resource that both IT and business managers intrinsically value, one that can guide decisions about new business initiatives and related technology investments. That rallying point is enterprise data. Because incumbents possess richer reserves of business information, they wield a competitive advantage that even the most disruptive insurgents can't claim. The key is for established companies to unlock the full potential of this important resource to fuel business transformation and help to maintain their leadership positions in volatile and quickly evolving markets.



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1 THE BUSINESS BENEFITS OF TRANSFORMATION

"DATA HAS LONG BEEN COLLECTED, MANAGED AND SECURED, BUT RARELY HAS IT BEEN SEEN AS A BUSINESS ASSET IN THE WAY IT IS VIEWED TODAY. ENTERPRISES NOW RECOGNIZE THAT DATA HAS A UNIQUE VALUE AND CHARACTERISTICS THAT REQUIRE SPECIAL CONSIDERATION."

Paul Lewis

Chief Technology Officer, Americas
Hitachi Vantara

For example, by analyzing a blend of internal and third-party data, established companies can spot changing customer tastes to jumpstart new products and services. "These insights can shorten time to market and create more agile business processes," he says.

The Business Benefits of Transformation

Data-driven digital transformation has the potential not only to address competitive threats posed by insurgents, but also to uncover opportunities for new business models and revenue streams. For example, a century ago Deluxe Corp. launched a business that eventually turned the company into a market leader for check manufacturing. Better than anyone, Deluxe's executives understand that in a world of digital wallets, credit cards and Bitcoin, consumers and businesses are writing fewer checks. So Deluxe is disrupting itself. In recent years the company made a bold move to become a provider of marketing solutions and other services to help financial institutions and small businesses operate more effectively and grow their companies.

"Check usage remains an integral part of our business, but we recognize consumption is in decline. At the same time, we recognized we have a unique opportunity that isn't shared by anyone we compete with – we have a trusted brand that's been more than a hundred years in the making," Deluxe's Mathews says.

This brand advantage gives Deluxe long-standing relationships with more than 5,000 financial institutions and 4.5 million small-business customers, all of which need a raft of modern business services that Deluxe can provide. "From that inflection point, we realized we needed to make a move," Mathews says. "And the result was a variety of new offerings with a digital orientation."

The ability to use and understand customer and market data is an essential underpinning of Deluxe's transformation strategy, which draws from a large number of data repositories and systems for managing and understanding the information that Deluxe has gathered about its core markets. "We're working to create a single source of truth around customers, products and vendors," Mathews says.

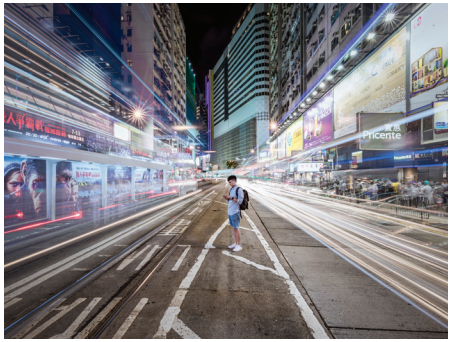
Now, that extensive storehouse and a strategic acquisition of a company that specializes in big data analytics are serving two purposes. "We consume information internally for decision making and for running our operations more efficiently, but data and analytics are also products we are offering to our financial-institution and small-business customers," Mathews explains.

For example, Deluxe monitors activity across new e-commerce channels that it runs. "We see what types of products consumers are buying online, how much they're buying and when they're making their purchases," Mathews says. "Our internal teams spend considerable time understanding how these consumers are engaging with us and whether we're providing the right products for our customers at the right time. This helps us better position our company in the marketplace."

The ability to modernize business models in the face of changing requirements isn't the only value of data-driven transformations. Companies across market segments are seeing a host of other benefits.

ENHANCED CUSTOMER EXPERIENCE

Retailers continue to address the changing tastes of omni-channel shoppers, and the challenge goes beyond a simplistic view that consumers will choose between online and in-store transactions. Shoppers are blending both worlds. For example, a consumer may start by browsing online for boots, combing various sites to find three pairs of interest. He'll then go to the company's brick-and-mortar facility to try them on, evaluate the fit and decide to purchase two pairs. If one pair is out of stock, the shopper can access an in-store kiosk to arrange for the boots to ship to his house for free. This series of digital and in-store transactions represents a transitory buying journey rather than one that starts and finishes across a single channel. Industry players who can follow and understand these buying journeys are best positioned to deliver experiences that encourage sales and brand loyalty.



PROACTIVE CUSTOMER ENGAGEMENT

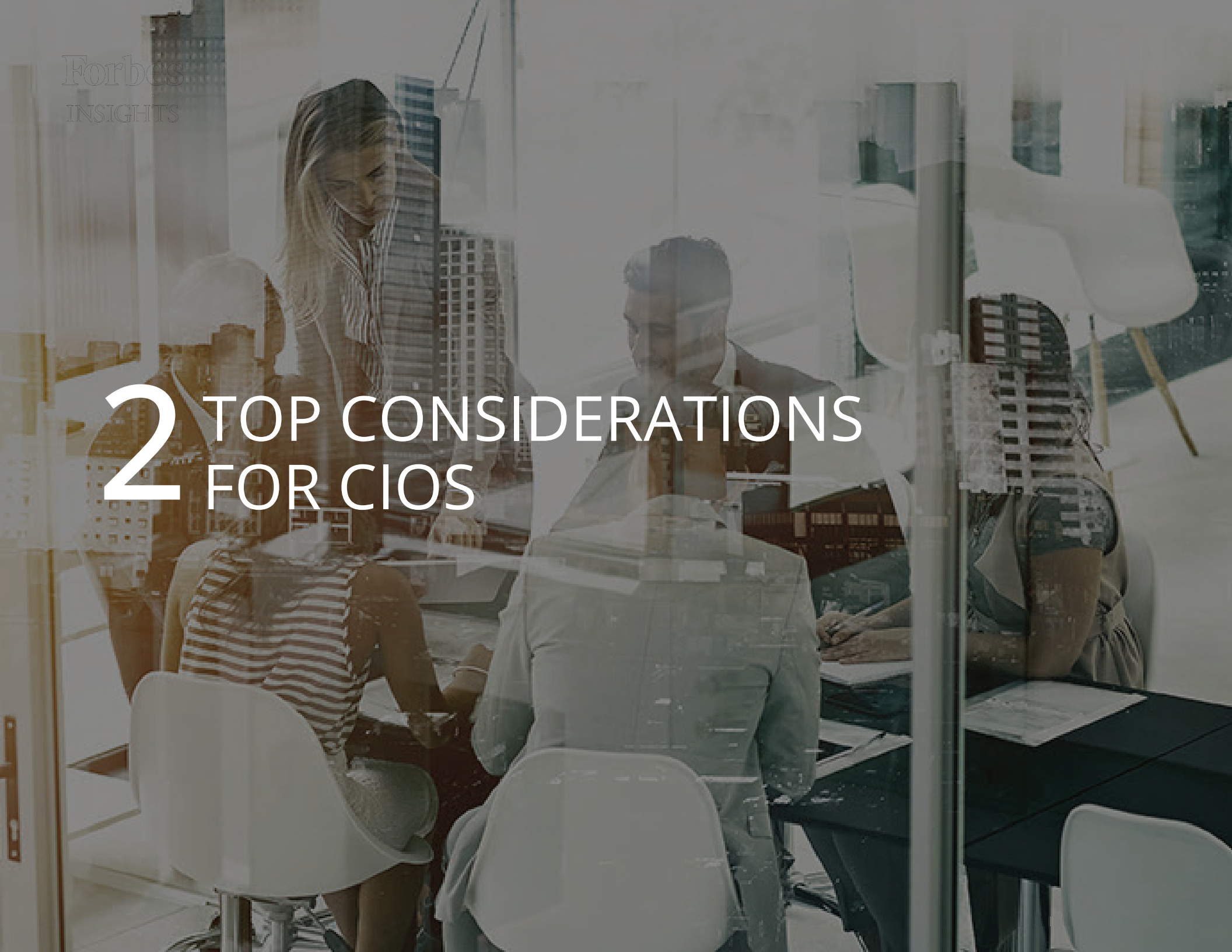
By digging deeply into customer data, a retail bank can anticipate the near-term needs of individuals. Rather than waiting for someone to contact the bank about a new mortgage or student loan, predictive analytics can flag these events based on demographics and interactions with the bank. "We have links to a number of data sets, including credit bureaus," Mathews says. "We can help financial institutions better understand changes in consumer behavior, based on important life events. As a result, institutions can make smarter decisions about how to better serve their customers at the time and place they need it most."

NEW UPSELLING AND CROSS-SELLING OPPORTUNITIES

By creating comprehensive views of customer buying patterns and interests, companies can deliver targeted offers that appeal to individual needs versus sending generic promotions that consumers ignore. For example, before a telecommunications company sends a monthly bill for mobile-phone service, it can draw on underlying data resources to spot patterns in the customer's Internet service or any other products the company provides. It can then include a bundling offer based on these details that highlights cost savings, new capabilities or loyalty rewards that resonate with that particular client.

COMPETITIVE RESPONSES TO INSURGENTS

Upstarts such as Uber and Airbnb are redefining their respective markets with new business models and proprietary applications. This provides an initial first-mover advantage for insurgents, but for the long term, established companies can retain their competitive position by nurturing and capitalizing on their rich data reserves. "Data has long been collected, managed and secured, but rarely has it been seen as a business asset in the way it is viewed today," says Paul Lewis, chief technology officer, Americas, for Hitachi Vantara and an IT executive with a long track record in other verticals. "Enterprises now recognize that data has a unique value and characteristics that require special consideration."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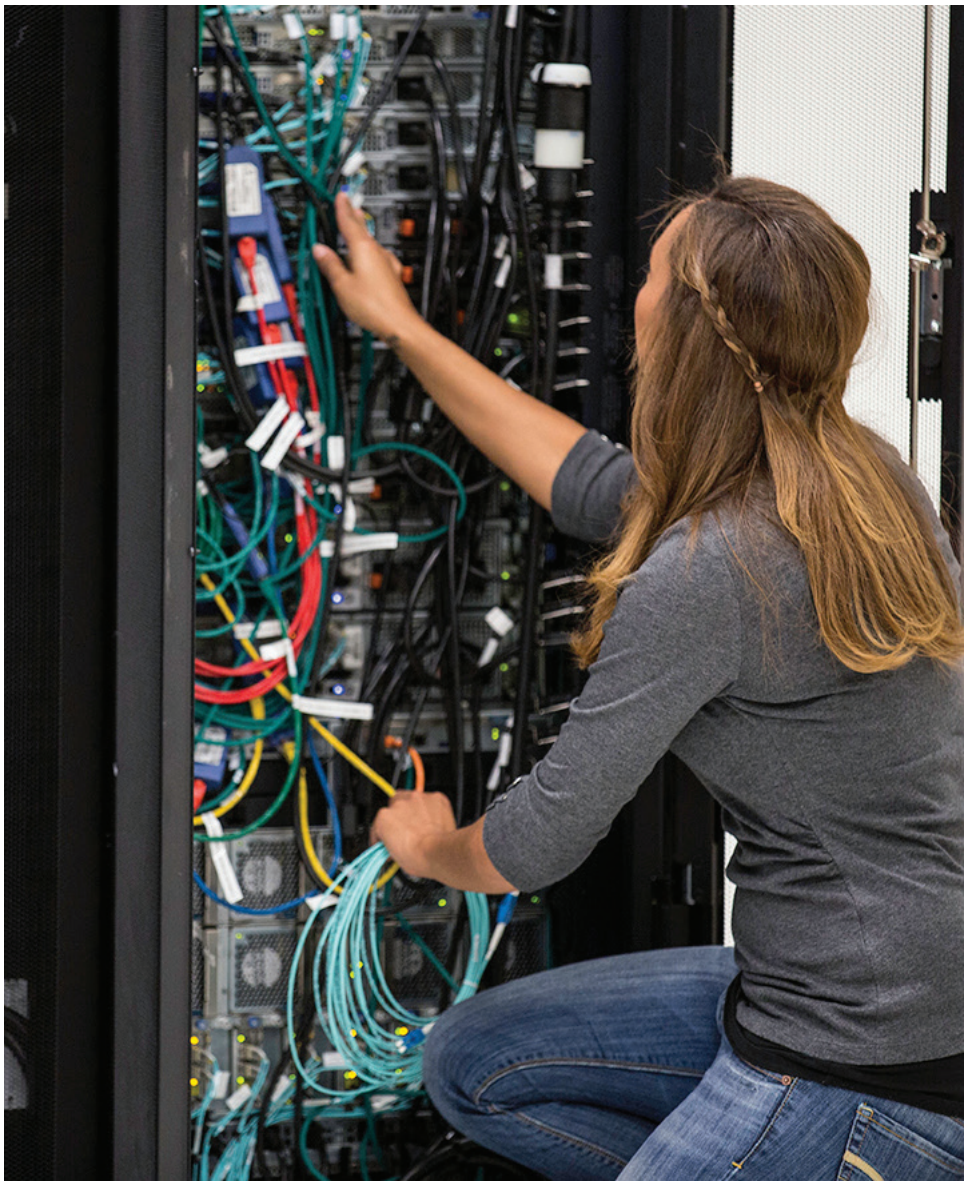
2 TOP CONSIDERATIONS FOR CIOS



"THE 85% OF THE IT BUDGET THAT WE USED TO SPEND FOR MAINTENANCE HAS NOW SHRUNK TO 50% ...[WHICH] GIVES US FUEL FOR NEW OPTIMIZATIONS AND MODERNIZATIONS."

Dr. David Bray

CIO, U.S. Federal Communications Commission

The drive for digital transformation didn't suddenly fall into the laps of CIOs. It comes on the heels of other trends that have been shaking up the IT department for years. This includes recession-era imperatives to "do more with less." The push to cut costs became severe enough that IT managers faced tough decisions about cutting resources and investment plans n the drive to achieve stringent financial goals. In the post-recession world, goals are shifting as CEOs place higher priorities on growth – whether through mergers and acquisitions or organic gains in revenues and markets – to satisfy shareholders and address threats posed by insurgents. "This is pushing CEOs to ask, 'How do we transform our organizations to compete in the current competitive environment and continue to grow our companies?'" Lewis says.

This puts CIOs in a difficult position. After years of being pushed to reduce costs, they're now being asked to jumpstart innovation. "This shift is extraordinarily difficult, and as CEOs continue to challenge IT leaders to be digital innovators, that chasm is growing," Kalakota says. "Going from trying to keep the lights on to fundamental change in the organization is tough."

The U.S. Federal Communications Commission is one large enterprise that is successfully balancing tight budgets and transformation. In 2013, when Dr. David Bray arrived as CIO, the agency was running more than 200 different IT systems, all within in-house data centers and averaging 10 years old. Because of federal budget sequestration and other cost-cutting requirements, the IT department was essentially in a holding pattern – it received funds to keep the existing infrastructure running (more than 85% of the IT budget was going just to maintain legacy systems), but lacked extras for new services. In addition, the IT team was at half its historical size, as people who retired weren't being replaced.

One of Bray's first jobs was to convince senior leaders that a new operating model was needed to better support the agency's mission, resiliency and sustainability. But requests for increased funding for modernization were denied in both 2014 and 2015. "It quickly became clear that we couldn't continue to operate everything on-premise given the funding we had," Bray says. "So we decided to retire some on-premise systems and move other services to the cloud or to a commercial outsourcer that would take over their care and feeding."

To succeed with this bold plan, the then-new CIO had to gain the trust of senior leaders and the IT staff. "Any digital transformation is about knowing the history of the organization, listening to all the various stakeholders and working to understand each different perspective," he says. "We then developed a narrative that people could buy into and begin to trust that there was a viable path forward."

The upfront work didn't overcome every obstacle but was enough to demonstrate early successes. Today none of the FCC's IT runs internally. About a quarter of the legacy systems were deemed obsolete and were decommissioned. Another 30% of the old environment was replaced by cloud services, with the remainder now being run by a commercial outsourcer. The impact has been significant. "The 85% of the IT budget that we used to spend for maintenance has now shrunk to 50% by moving to the cloud and a commercial service provider," Bray reports. "They can do patching and systems monitoring much more effectively than we could. And while we didn't get a budget increase, reducing our maintenance spend so significantly gives us fuel for new optimizations and modernizations."

3 THE NEW CIO

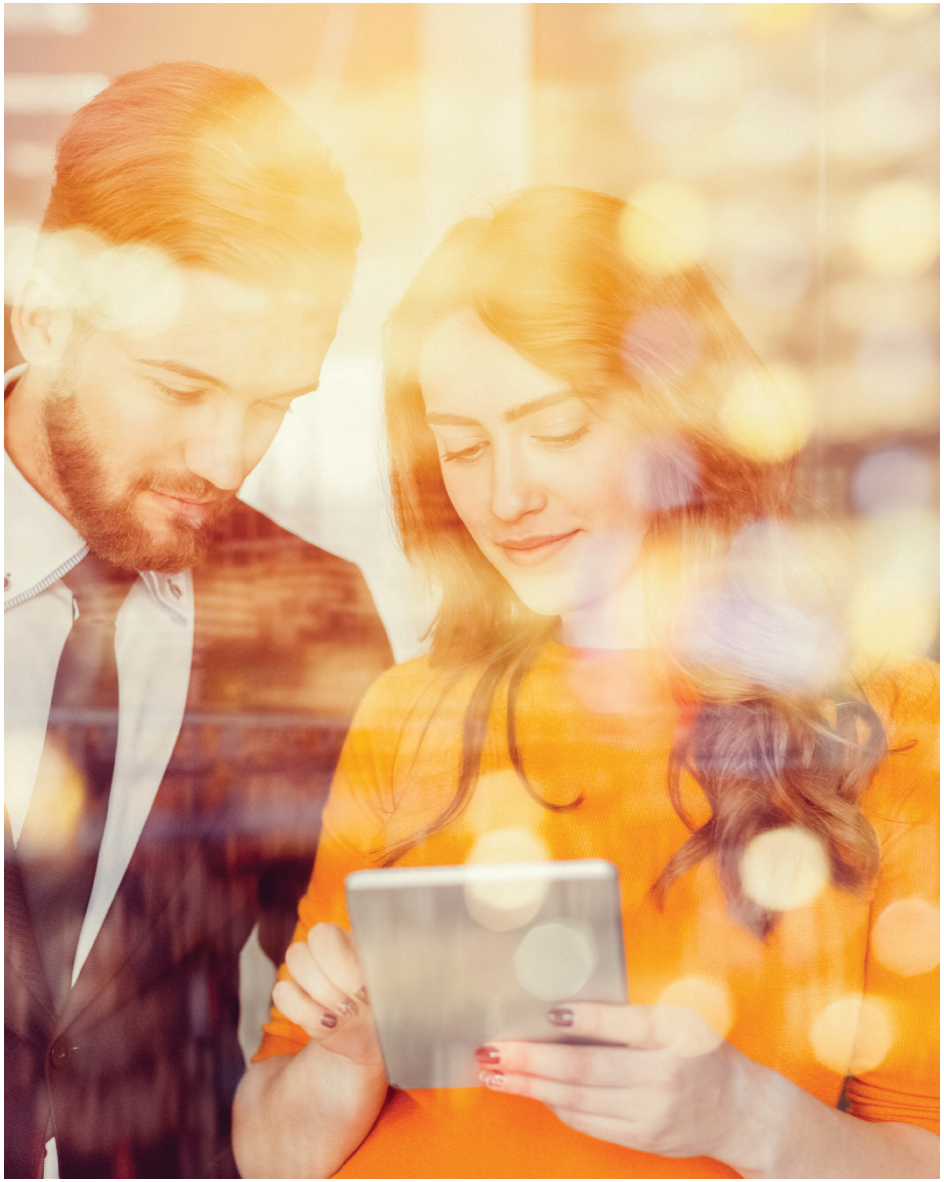
As Bray's example shows, to undergo data-driven digital transformation, enterprises need a new type of leader, someone who can act as a change agent across technology and business disciplines. For many progressive organizations the person who's emerging to take on this responsibility is the CIO – but in a role that rewrites traditional definitions.

The most notable change is that these modern CIOs are becoming data specialists to drive business innovation, and this is giving them new status within enterprise hierarchies. "Traditionally, CIOs never had a seat at the CEO's table," Lewis points out. "CIOs typically reported either to the chief operating or chief financial officer, and therefore acted primarily as a provider of services rather than as a resource for helping to make business decisions."

Data-driven business transformation is changing that. CIOs now hold dual responsibilities as technology stewards and expert advisors for using information and analytics to better inform the business, improve the company's agility and employ technology to create enhanced client experiences.

"I report to our CEO, which means I'm a peer with our business-unit leaders," Mathews says. "This sends a clear message about the value of technology for the business. As a change agent, I'm pushing for modernization and tools that enable business teams to innovate faster, scale the company to meet changing demands and integrate acquired businesses more efficiently."

Along with these added responsibilities, CIOs face new considerations that impact their work. The most fundamental change for many CIOs is a shift in their own mindset. "I've witnessed some CIOs who want to maintain their command-and-control responsibilities," Lewis says. "They reason that the consequences of risks – from production breakdowns to security breaches – still fall on their shoulders. However, there's another segment I've seen that says, 'Despite these risks, innovation represents a higher priority.' They're much more entrepreneurial than risk-averse in their orientation."



"CIOs cannot just maintain the status quo. In fact, I would submit that CIOs can't even do incrementalism, because with incrementalism you will fall behind, too," says Bray.

In part that means adopting a strategic role in which CIOs work more closely with the business to develop new services. But he warns that not everyone is ready for this new-look CIO. Pushback will arise from end-users who question why it's necessary to change current operations or to do so quickly. Others may simply balk at seeing the CIO act as more than just a chief IT officer.

"We have to be very careful about how we handle friction to keep it from endangering our success," Bray says. "You don't want to create too much friction at once, or else you'll get killed. But at the same time, generating some friction is a sign of progress. After all, at the end of the day, it's friction that makes a car grab the road and move forward."

Once these reorientations take place, the impact can be significant. For example, Mathews says his work with LOB managers has made divisions almost imperceptible. "Any transformation agenda, particularly when data is an underpinning, has to be done in conjunction with the business," he says. "If we're not working closely together, we'll deliver poor outcomes."

So channels are open to enable the business seeking help to address a new requirement or for IT to extol the potential of a new technology. Either way, conversations ensue among peers with a common goal. "This partnership gives us the best of both worlds," Mathews says. "The business becomes highly engaged with transformation, and the IT organization understands its role and is willing to provide its voice to better serve the business and customers."

This cross-fertilization guided the modernization of Deluxe's e-commerce platform and the creation of new customer-facing products. "We created a richer online experience that's mobile-friendly and allows for greater personalization," he explains. "The initiative was driven by our business partners and IT."

4 FIVE KEYS TO DIGITAL TRANSFORMATION SUCCESS

"IT'S NOT A QUESTION OF HAVING THE 'INNOVATIVE' PEOPLE WORK OVER HERE AND EVERYBODY ELSE GO ABOUT THEIR BUSINESS. INNOVATION NEEDS TO BE NURTURED WHEREVER YOU FIND IT. THAT'S WHY IT'S SO IMPORTANT TO INSTILL A CULTURE OF INNOVATION. CULTURE BEATS STRATEGY EVERY DAY OF THE WEEK."

C Scott Frisbie

Executive Vice President and Head of Innovation Design, Wells Fargo

Of course, digital transformation requires more than just changing org charts and mindsets. Once organizations make a strategic commitment to modernization, they must take a series of tactical steps to create a solid foundation. Transformation practitioners say the following five steps can put enterprises on the right path.

1 EVOLVE BEYOND BIMODAL THINKING

"When it comes to change, we hear a lot about 'moving to' the cloud or to new platforms," Lewis says. "But realistically, companies aren't moving anything, they're diversifying their operations."

That's because established companies will continue to run many of the proven systems that helped make them market leaders in the first place. "If there's a line-of-business system that lands planes or manages ATMs, it's likely to remain in its traditional operating mode," Lewis explains. "It's not in the organization's best interest to create an innovative environment to replace a system that keeps critical operations from going down."

By contrast, new applications and services will likely support emerging business needs with the help of mobile, cloud, social and analytics applications. "Some of my lines of business need to be far more agile than traditional functions, and therefore I'm going to treat them differently," Lewis says.

But meeting the unique requirements of different business lines shouldn't come at the expense of cross-department collaboration and data sharing. Rather than creating rigid mode-1 and mode-2 boundaries, CIOs need to create a common framework that avoids silos.

"The biggest priority is to get everyone engaged," says C Scott Frisbie, executive vice president and head of innovation design at Wells Fargo. "It's not a question of having the 'innovative' people work over here and everybody else go about their business. Innovation needs to be nurtured wherever you find it, and you never know where the next innovative thought is going to come from. That's why it's so important to instill a culture of innovation. Culture beats strategy every day of the week."

To do this, Wells Fargo launched an innovation group, which includes input from both technology and business people. In addition to undertaking related R&D, the group disseminates innovation best practices throughout the enterprise. The group is led by Steve Ellis, who spreads a KYC (know your customer) mantra. "That's the message we're trying to inculcate throughout the enterprise," Frisbie says. "By being guided by our customers and their expectations related to technology, we can better understand what new capabilities we should be offering. This is also helping us be open to experimentation and innovation to a degree we have not been before."

"IT IS EXTREMELY IMPORTANT FOR IT TO GET AHEAD OF THE PACE OF CHANGE IN TERMS OF THE PRODUCTS AND SERVICES IT PROVIDES. MORE IMPORTANTLY, IT NEEDS TO GET AHEAD OF WHERE CONSUMERS ARE GOING BECAUSE THEY'RE DRIVING CHANGE AT A FASTER AND FASTER RATE."

— Alan Boehme | *Chief Technology Officer, Chief Innovation Officer, Coca-Cola Co.*

IT leaders across all types of industries are seeing similar trends. "Especially for consumer-oriented companies, it is extremely important for IT to get ahead of the pace of change in terms of the products and services it provides," says Alan Boehme, chief technology officer and chief innovation officer at the Coca-Cola Company. "More importantly, it needs to get ahead of where consumers are going because they're driving change at a faster and faster rate."

2 DESIGN AN INFRASTRUCTURE FOR INNOVATION

The IT staff first needs to perform an accurate inventory of legacy assets to determine which ones continue to provide value for core business processes, and which ones are ripe for consolidation or replacement with more-efficient resources.

Next comes a gap analysis that looks at demands by the business for new services and what investments IT must make to meet those needs and support a data-centric strategy. When deciding on funding priorities, a top goal should be business elasticity. "Organizations can't always predict demand cycles or usage patterns in a world where clients are worldwide and access resources 24/7 by 365," Lewis points out. "Therefore, enterprises need elastic operations so that, no matter what happens, they can scale up or down depending on the prevailing conditions."

One example is Coca-Cola's effort to optimize the distribution supply chain in Vietnam, where local suppliers are scheduled to visit a series of small mom-and-pop stores a couple of times a week to see if they need more product. "An individual store may receive a visit on Tuesdays and Fridays, but what happens if they sell out of a product on Wednesday?" Boehme says. "We're not making any money, and the shop owner isn't making money, because there's no product to sell."

Working with Bringg, a startup that offers a cloud-based delivery-services solution, Coca-Cola rolled out an Uber-like application in about 45 days that mitigates out-of-stock situations. The company created a mobile phone app that connects shop owners and local distributors with the Bringg service. When a stock shortage arises, owners simply tap an on-screen icon, enter the desired replacement quantity and press send to place the order. "The distributor then uses the service to find a local, preapproved driver with a small vehicle and says, 'Here's a case of Coke, deliver it to this address," Boehme explains. "The distributor can then send a message to the shop owner with the estimated

delivery time and even display a map that shows where the driver is at any point in time. Instead of taking two to three days to deliver a product, it's now down to hours or minutes."

Driven by this on-demand orientation, CIOs are turning to the cloud. Closely related to these moves is the need for IT managers to work closely with finance executives to transition from capital-expense to operating-expense budgets. Opex funding helps CIOs avoid some traditional costs associated with overinvesting in capital equipment. The reasoning was that excess capacity was necessary for unexpected demand spikes, but in reality, these extra resources spent most of the time being underutilized. However, being a hardened budget hawk presented its own risks. "Not being able to handle a sudden surge in customer traffic is worse than having too much capacity," Lewis says, adding that service outages may not only temporarily keep transactions from taking place, but they could also permanently damage relationships with key customers. Thus, predictable opex spending tied to on-demand IT capabilities helps enterprises match funding and service-level goals.

As CIOs create infrastructures that balance support for existing operations and on-demand realities, they're faced with a fundamental challenge: how to succeed in both areas simultaneously. Deluxe's Mathews found an answer. "Form a technology perspective, we've adopted a simple approach – we don't do wholesale rip and replace of systems or architectures," he says. "Instead, we modernize rapidly but incrementally when we update individual systems or processes. In this way, we transform with greater clarity and with much less risk than if we tried to replace an entire process flow or architecture within the enterprise."

TRANSFORMATION CREATES NEW FUNDING ALLIANCES

IT departments continue to see plateaus in budgets or only modest increases each year. So how can CIOs fund innovation?

Help comes from an unexpected source: so-called shadow IT. This refers to business units that use departmental budgets to acquire new IT services. For example, a business manager may bypass IT and sign up for a particular Software-as-a-Service application deemed important for the department. Because of the lack of IT oversight and control, shadow IT is often seen as a risk and thus something to be avoided – at least from a CIO's point of view. But not all IT leaders feel this way. "Many CIOs clearly understand that most, if not all, of the money for new investments is coming from a business unit, and therefore they're willing to enable shadow IT," says Paul Lewis, CTO, Americas, of Hitachi Vantara.

But they're not completely laissez-faire, he adds. Instead, these CIOs provide a platform for data governance that is compliant with internal and regulatory policies. Thus, IT ensures that data access is controlled in a way that allows the business to focus on creating value.

"I'm a big proponent of enabling shadow IT," Lewis says. "My job becomes less about managing a project and more about creating a foundation that the business can use to access data and create insight. That can be much more valuable than just giving them an application and hoping it is going to be used."

3 CAPITALIZE ON NEW DATA MANAGEMENT TECHNOLOGY

While cloud, mobile and social technology garner a lot of attention during modernization discussions, data-driven transformations require new resources for making information portable across departments and available to business users whenever they need it.

To do this, progressive organizations are rounding out traditional data warehouses and data marts, which house enterprise information that fits within well-defined schemas. For example, this is enterprise data that can be grouped by customer, product, price or other characteristic. The new, complementary resource is the data lake, which applies tools for data visualization and integration to unstructured data, such as messages from social-media interactions, videos and streams from Internet of Things (IoT) applications.

Enterprise data warehouses and data marts, plus their associated Business Intelligence tools, will continue to generate details that remain valuable to business operations. But these traditional resources require batch operations and hours or even days to generate reports. However, data lakes are designed for speed – an enterprise can access data lakes in near real time for faster insights. The key is being able to blend warehouses, marts and lakes, along with source databases and external information. Together, all of these information sources provide a complete view of markets, customers, business trends and internal operations.

"We're engaged in just about everything that you can associate with the word 'data,' including data lakes," Frisbie says. "But the goal isn't to just collect data, we also have to integrate as well as federate it. And then the real work begins with the analytics."

BlackRock, the global asset management company, is leveraging digital capabilities to help it foster more personalized and closer engagements with customers. "Digital transformation in the marketing organization helps us to better understand and connect with our clients," says Scott Roen, managing director and global head of digital at BlackRock.

Deluxe is also among the growing list of companies that are evaluating the value of data lakes. "They can give us a different way to take advantage of the data we collect," Deluxe's Mathews says. "We still have significant call center operations, and we receive high volumes of online traffic from small businesses. Our job is figuring out how to harness all that structured and unstructured information and to leverage it for making better business decisions and helping customers achieve better outcomes."

4 ADDRESS SKILLS GAPS THAT CAN STALL TRANSFORMATION EFFORTS

A data-driven culture staffed by innovation-oriented professionals often requires new talent with a combination of business and technical skills. Hitachi Vantara's Lewis suggests that companies hire a leader dedicated to supporting new business initiatives, someone who is comfortable with experimentation and failing fast. "This is a different skill set from the 30-year IT veteran focused on risk avoidance," he says.

Transformation agents must also be adept at interacting with the business. "These innovators can't wait for someone to tell them what to do, they have to figure what can be useful and then help the business understand why," LiquidHub's Kalakota adds.

Behind the scenes, BlackRock leaders are re-engineering workflows for data-driven interactions among marketers and clients. To facilitate these efforts, the company is bringing on new talent and updating the skills of some current staff members to help them work more effectively in a digital environment.

"I SEE MANY DATA SCIENTISTS AND DEVELOPERS WHO ARE INTERESTED IN THE MARKETING SIDE OF THE BUSINESS."

— Scott Roen | *Managing Director and Global Head of Digital, BlackRock*

"We now have individuals who are writing rules-based algorithms to help us better understand the customer journey to ensure that each person receives the right communication through the right marketing channel at the right time," Roen says.

Their skills include a blend of technology expertise and marketing savvy, along with a keen interest in the underlying infrastructure for managing and analyzing data. In addition, data experts are playing a bigger role in marketing than in the past. "I see many data scientists and developers who are interested in the marketing side of the business," Roen says.

Data-driven transformation is giving rise to another new role: the chief data officer (CDO) or vice president of data. His or her responsibilities range from data storage and security to analytics, data stewardship, data architectures and business intelligence. This officer also sets policies for managing structured and unstructured data, as well as machine-generated information.

But one of the most important responsibilities is guiding changes in data governance brought on by transformation. "The traditional view is that those who control the data have the most power within the company," Kalakota says. "Governance is about breaking down those barriers."

The CDO must elevate governance to become a more complex discipline that's influenced not only by the IT

department – the traditional center of governance responsibility – but also by LOB input. "We're working through the evolution of data stewardship and governance to determine who actually owns the data within our company," Mathews says. "In the process, all those responsible are helping to shape who can have access to data and then how we can make information available to authorized business users, partners and customers based on the security policies that we've created."

5 FOCUS INITIAL TRANSFORMATION INITIATIVES WHERE THEY'LL HAVE THE MOST IMPACT

Fueled by the pressure to innovate, many enterprises try to change too much, too soon, transformation experts say. "When an organization starts to create new analytics programs, for example, they tend to jump right in to the most difficult cases," Lewis reports. "So they may launch a big data exploration thinking they'll find a nugget of gold if they just keep trying hundreds of algorithms."

A better approach is to start with a project that promises quick wins and demonstrable results. "That might be a plan to optimize a data warehouse by moving the unstructured data that was mistakenly put into it to a data lake," Lewis says.

Kalakota concurs. "CIOs have to be very focused on driving wins because without that, their job security is at stake," he warns. "To drive wins, you have to narrow down the focus of what you do and then stay focused. That means finding projects that have a clear beginning and end, and that can create clear value."

One LiquidHub strategy is to work with companies to address one business silo at a time. "It's one thing to say you need to transform the customer's relationship across the entire bank. That's an important long-term goal," Kalakota says. "But first focus on fully knowing a customer's relationship to one area, such as retail banking. There are many opportunities for adding value by putting yourself in the customer's shoes and personalizing the interactions. Moving from a transaction mindset to an outcome-oriented mindset takes time."

5 THE FUTURE IS NOW

IOT AND OTHER EVOLVING TECHNOLOGIES WILL ONLY HEIGHTEN THE IMPORTANCE OF ENTERPRISE DATA. AS A RESULT, THE FUTURE SUCCESS OF ESTABLISHED BUSINESSES WILL HINGE EVEN MORE ON HOW THEY TURN INFORMATION INTO A COMPETITIVE DIFFERENTIATOR. GUIDED BY MODERN CIOS, SKILLED TALENT AND AN AGILE, ON-DEMAND IT ENVIRONMENT, DATA-DRIVEN COMPANIES ARE BUILDING A STRONG FOUNDATION FOR LONG-TERM SUCCESS.

ADVICE FROM TRANSFORMATION PIONEERS

DON'T DISRUPT, DIVERSIFY

The challenge: In the rush to transform, some established companies fail to fully exploit valuable corporate resources, including rich storehouses of customer and market data and proven IT systems.

The plan: Upgrade core line-of-business systems, while supporting new business initiatives with mobile, cloud, social and data analytics applications.

The key: CIOs must promote a culture of cross-departmental collaboration and data sharing to break down rigid boundaries between traditional and transformational workgroups.

START WITH AN ACCURATE BASELINE

The challenge: Identify which legacy systems continue to provide value and which ones impair business agility because of high maintenance costs, complex customizations and outdated capabilities.

The plan: Audit IT assets with an eye toward financial costs and value to the business. Where appropriate, consolidate or replace old systems. Then perform a gap analysis that looks at demands by the business for new services and the investments needed to meet those needs and support a data-centric strategy.

The key: Prioritize new projects according to their potential to create business elasticity. This enables enterprises to quickly scale up or down as demand cycles constantly change for business systems that must be available 24/7 by 365.

TAKE ADVANTAGE OF MODERN DATA-MANAGEMENT TOOLS

The challenge: Data-driven transformation projects require new resources for making information portable across departments and available to business users whenever they need it.

The plan: Round out traditional data warehouses and data marts with new and complementary resources, such as data lakes. These innovative options include data visualization and integration tools for unstructured data and information streaming from IoT applications.

The key: CIOs must blend warehouses, marts and lakes, along with source databases and external information, to achieve a complete view of markets, customers, business trends and internal operations.

HUNT FOR NEW TALENT

The challenge: Data-driven transformation requires new skill sets, including an entrepreneurial outlook that embraces the idea of "failing fast, learning quickly and moving forward."

The plan: Appoint an innovation leader who is comfortable with change, experimentation and t aking on risk.

The key: Transformation agents must be adept at interacting with the business. Innovators can't wait for LOB managers to identify a new opportunity; they should recognize the value of a new service or technology and then help the business understand its importance.

FOCUS ON QUICK WINS

The challenge: Fueled by the pressure to innovate, enterprises may try to change too much, too soon, which can make it difficult to demonstrate the business value of new investments.

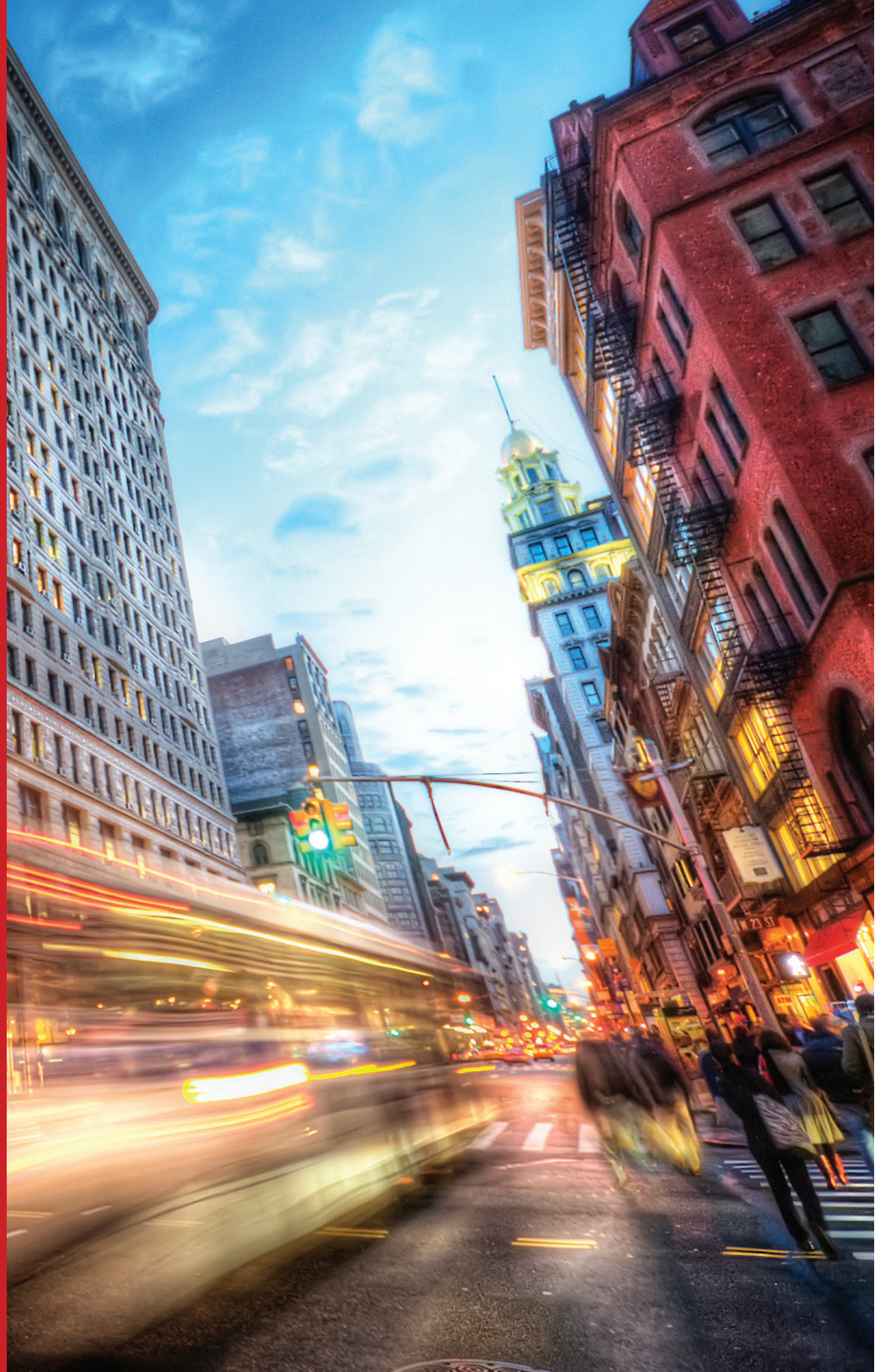
The plan: Start with well-defined projects that promise quick wins and demonstrable results.

The key: Without a clear focus and meaningful results, CIOs will quickly lose the backing of senior management and may even see their jobs at stake.

HOW TO QUANTIFY THE ROI OF TRANSFORMATION

"Fail fast, learn quickly and move forward" may be the mantra for many change agents, but in a highly dynamic environment, how can CIOs make the business case for their specific transformation projects? IT leaders acknowledge that traditional ROI calculations don't always apply in a world of digital disruption. "The official answer is, 'Of course everything we do has a clear business case,'" says C Scott Frisbie, executive vice president and head of innovation design at Wells Fargo. "But one of the lessons we've learned is that not everything can be quantified. That's because sometimes when you start down a modernization path, you don't always know what you're going to find. An unanticipated business benefit may result for a group that wasn't directly involved in the project, for example."

Rather than establishing traditional KPIs at the start of an initiative, some corporations take a broader view when prioritizing new investments. "We do a full financial analysis before we commit to a new project, so we're going in with our eyes wide open," says Alan Boehme, chief technology officer and chief innovation officer at Coca-Cola. "But even so, we may ultimately decide to increase our operating expenses if we believe that the non-financial returns outweigh the cost – for example, if we decide the effort will give us a competitive advantage, help grow our business, improve customer satisfaction or optimize our supply chain."



A NOTE FROM OUR SPONSOR

A PROVEN PARTNER FOR DIGITAL TRANSFORMATION

At a time when data is taking on a greater role as a strategic asset for large enterprises, Hitachi Vantara provides a combination of resources to optimize information management and support transformation projects.

The extensive Hitachi portfolio includes the industry's first data-independent infrastructure, cloud services and analytics, along with a data management platform that was given a top rating by Gartner, and an enterprise object store rated highest in the market by both Gartner and IDC. These and other capabilities help CIOs create a modern environment for managing, governing, mobilizing and analyzing data. What's more, innovative technologies, such as Hitachi's pioneering development of data lakes, integrate a wide range of information formats, from structured and unstructured data to high volumes of Internet of Things information.

For details about how Hitachi's expertise can help companies use data as a strategic resource and support business transformation, go to www.hitachivantara.com.

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[1] http://www.gartner.com/imagesrv/cio/pdf/cio_agenda_insights2015.pdf

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