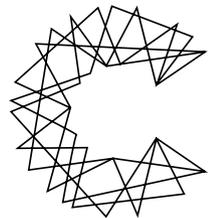


More than meets the “I”

Chief
Information
Officer

Global C-suite Study
19th edition

IBM Institute for
Business Value



The IBM Institute for Business Value, in cooperation with Oxford Economics, interviewed 2,258 Chief Information Officers. In 900 face-to-face and 1,358 phone interviews, both quantitative and qualitative responses were collected. The analytical basis for this CIO report uses 2,150 valid responses from the total data sample collected.

More than 12,800 CxOs, representing six C-suite roles, 20 industries and 112 countries, contributed to our latest research. We used the IBM Watson Natural Language Classifier to analyze their contextual responses and ascertain overarching themes. We also used various statistical methods, including cluster analysis and discriminant analysis, to scrutinize the millions of data points we collected.

More than 2,100 CIOs tackle change

In the digital age, Chief Information Officers (CIOs) are expected to be at the forefront of enabling reinvention, not just within their IT organizations but across the enterprise. The demands of the CIO role are intensifying and many have a strong desire to transform beyond a singular focus. CIOs participating in the 19th edition of the IBM Global C-suite Study expressed a clear change in sentiment about their role – a further evolution from traditional IT coordinator and manager to change instigator and business co-creator. Despite a vision for the future, many are struggling with implementation. They know much of the “what” – they need help with the “how.”

A broader context

Perspective from the Global C-suite Study

Two decades after the Internet became a platform for transformation, we're still wondering how it all might turn out. The signals aren't always clear. Today, winner-take-all organizations are on the rise, but collaborative ecosystems are flourishing as well. Even in industries where competitive concentration is increasing, innovation hasn't – as would be expected – flatlined. Which way to the future?

The organizations that are prospering aren't lying in wait to time the next inflection point – the moment when a new technology, business model or means of production really takes off. Remaking the enterprise, they recognize, isn't a matter of timing but of continuity. What's required, now more than ever, is the fortitude for perpetual reinvention. It's a matter of seeking and championing change even when the status quo happens to be working quite well.

Drawing from the responses to a survey of executives across the C-suite, IBM client engagements and our work with academics, the 19th edition of the IBM Global C-suite Study, "Incumbents Strike Back," covers four topics that describe the changing business landscape.¹

Dancing with disruption: Incumbents hit their stride

Is disruption dead? Certainly, there's less of it than most C-suite executives anticipated. Just under three in ten say they're experiencing significant disruption; hardly the deluge expected. What happened? As industries consolidated, startups deprived of venture capital funding stalled at the gate – or were snapped up by incumbents. Confounding the situation, C-suite executives report that it's not the fearsome digital giants they're concerned about most, but the once lumbering, now innovative, industry incumbents that have gained the capacity to strike first and strike back.

Disruption hasn't gone underground; instead it's emerging as a capability incumbents are ready to embrace. They orchestrate advantage by continuously reallocating resources to invest in promising new areas. They have learned to move fast, experiment and iterate. They're reinventing themselves before they are forced by competitors to reconsider their options.

Trust in the journey: The path to personalization

Personalization is a huge opportunity to grow revenues and loyalty, but absent true customer insight, too many organizations are in danger not just of falling short of their targets, but disappointing their customers. Leading organizations are modeling a new path to insight; they are design thinkers. They use data to interrogate their environments, create context and reveal what's deeply human about their customers. To achieve the elegant and irresistible design of the customer experience, they don't start with solutions; instead, they seek to ask the next best question.

They excel at two activities – customer co-creation and detailed journey mapping. These activities generate insights in abundance, feed on-target personalization and have equally important second-order effects: they propagate trust. Trust between peers in co-creation communities is transferred to the enterprise and extended outside the community by a cadre of influencers. Likewise, journey maps cement trust by instilling a culture of accountability to customers inside the organization. Leading organizations dedicated to discovering their customers' unmet needs don't just ask for loyalty on the basis of personalization. They earn and provide reasons to trust.

Orchestrating the future: The pull of platforms

Who wouldn't want to be an Amazon or Alibaba? An intrepid few in every industry are venturing onto business platforms, creating dazzling network effects by orchestrating direct interactions between consumers and producers, and pulling others fast in the same direction. Organizations will need to consider whether they reinvent themselves to own or participate in a business model platform, or to do both. Regardless, the "rules" for success are shifting.

Platforms break down conventions. Prime among those conventions is the value derived from proprietary advantage. Platform operators create value from reciprocity – they cultivate win-win propositions for the network of organizations on their platforms. Above all else, platform owners are ready to reallocate resources from defending markets to innovating in new ones. Attracted by the potential for outsized returns, 28 percent of the C-suite executives surveyed report their enterprises are reallocating some portion of capital to build out platforms. Past and future reallocation could approach an estimated USD 1.2 trillion in the next few years.

Innovation in motion: Agility for the enterprise

Asked to rank the capabilities most instrumental to their success, CEOs cited two characteristics above all others: a new willingness to experiment and the support of empowered employees. Leading organizations are rethinking the employee construct at its most elemental level: they're cultivating autonomy and learning on the fly by implementing a more fluid work structure made up of cross-functional teams. For many, the initial inspiration to do so is to get closer – and become more responsive – to their customers.

Leaders in these organizations look to employees to actively challenge and reshape their own views on the course the company should take next. They make it clear that they value smart experimentation and rapid response to market changes. Their employees aren't lined up neatly behind them; they're encouraged to explore as scouts on the front lines.

As part of the Global C-suite Study, we interviewed over 2,100 CIOs to better understand how the CIO function is evolving. In this report, we outline the evolution – and expansion – of the CIO's role in response to the challenging and changing landscape outlined in the Global C-suite Study.

CIO perspectives

Rising to the occasion

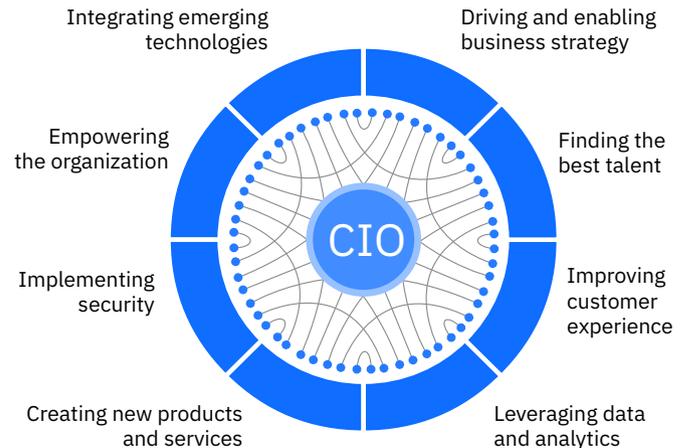
Increasing numbers of organizations are putting IT at the center of their strategies. In this digital world, CIOs tasked to do more than ever are becoming a fulcrum for reinvention. The pressures of perpetual reinvention are driving the ongoing evolution of the role.

CIOs have long moved beyond the original intention of the “I” in their title – Information – to a myriad of other foci. Great CIOs are doing everything from helping to drive business strategy and enabling the creation of new products and services, to improving the customer experience and empowering their organizations (see Figure 1).

Figure 1

In scope

The growing responsibilities of the CIO



Over the years, the business landscape has changed and new possibilities have emerged. The critical issues CIOs face have changed, along with the strategic recommendations made in our Global C-suite Study series.

Our CIO studies have tracked CIOs' shifting sentiments about their overall role – aligned with changes in business fundamentals. In our 2013 study, “Moving from the back office to the front lines,” we explored how a growing number of CIOs were seizing the opportunity to take on the role of business co-creator.² Most recently, our 2015 study, “Redefining Connections,” highlighted the imperative for CIOs to embrace disruptive innovation and an agile culture to respond to new competitors.³

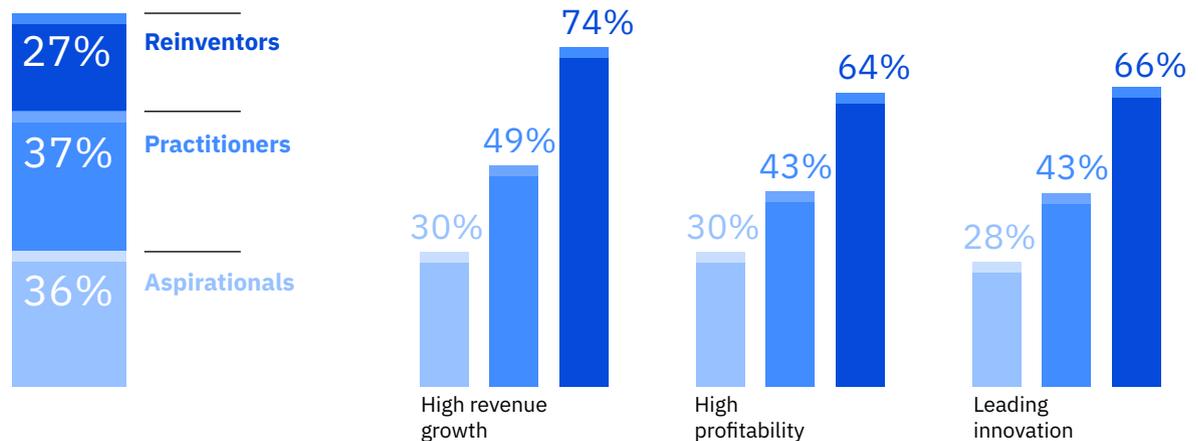
To better understand the forces at play today, we applied cluster analysis to identify distinct segments of organizations among more than 12,500 participants in the Global C-suite Study. Three archetypes emerged, which we've named the Reinventors, the Practitioners and the Aspirationalists. The organizations clustered in these archetypes are at different stages of Digital Reinvention™ and are eyeing the opportunities ahead from that vantage point.

The Reinventors are the standouts. They report that they outperformed their peers in both revenue growth and profitability, and lead as well in innovation. Their organizations are exceptionally well aligned. They say that their IT strategy is in sync with their business strategy, and they've optimized their business processes

Figure 2

Three archetypes

Reinventors lead their industries



to support their strategic intentions. Their organizations aren't locked in place. Having managed change successfully in the past, they're confident in their capacity to transform their organizations. Moreover, they have a well-defined strategy to manage disruption.

The Reinventors have redirected their resources to achieve new sources of scale – broad networks of partners – and extract new value from ecosystems. They're ahead of all others in co-creation and close collaboration with customers and partners. They've restructured their organizations, including their cultures, to encourage experimentation and bring new ideas to the fore.

Practitioners haven't yet developed the capabilities to match their ambitions. And they are ambitious. Over one-half of the Practitioners plan to launch new business models in the next few years. Some are ready to leap ahead by taking on more risk to “up their game” and disrupt their industry and others. More Practitioners than Reinventors are considering one of the most radical of the new business models – the platform business model.

The Aspirational, as their name implies, have a ways to go in both their digital transformation and their ability to move quickly to seize new opportunities.

Of the over 2,100 CIOs we surveyed, nearly a quarter (23 percent) came from Reinventor organizations, 41 percent were from Practitioner organizations and 37 percent were from Aspirational organizations. In this report, we explore the behaviors that make Reinventor CIOs so successful, and a vanguard from which to learn.

“Our plan is to be agile enough to anticipate digital disruption, even without knowing what that disruption may be in the future.”

Peter Crombecq,
CIO at Digipolis,
City of Antwerp, Belgium

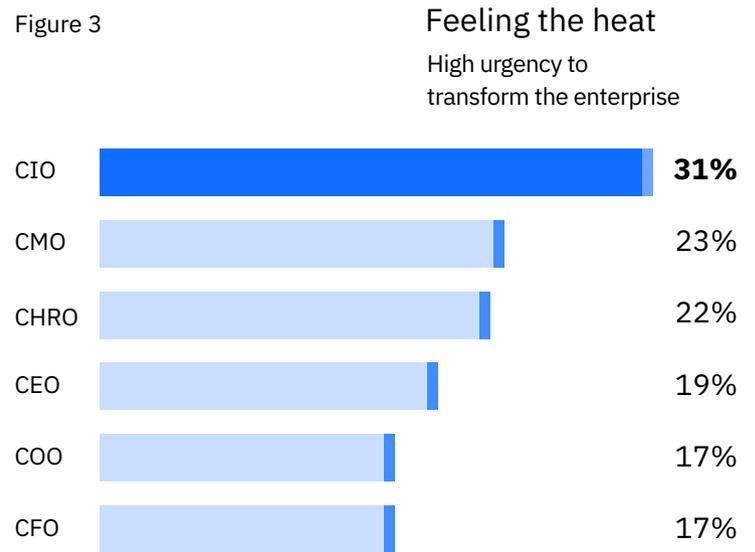
In scope

New roles and responsibilities for the CIO

Sitting at the nexus of technology and business, CIOs are well-positioned. From their vantage point, they can see from both angles the forces on the horizon that could impact their organizations.

We asked leaders across the C-suite about the level of industry disruption they were experiencing and the degree of urgency to transform the enterprise in response to that disruption. Overall, the number of CIOs pressured to transform their organizations wasn't that high, but there was a significant gap between CIOs' responses and those of the rest of the C-suite (see Figure 3).

Figure 3



Q: How urgently does your enterprise need to transform, considering current industry disruption?

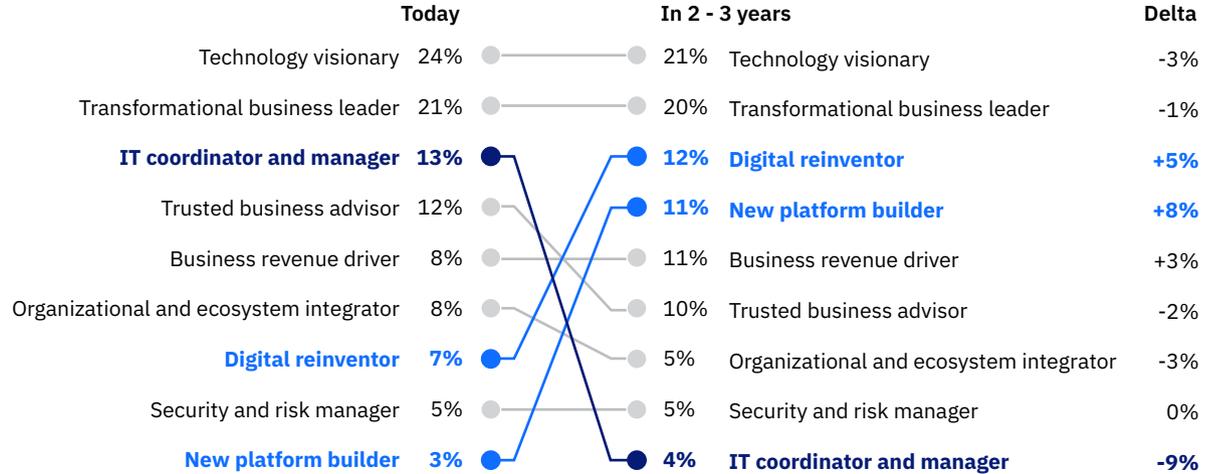
Thirty-one percent of CIOs reported a high degree of urgency to transform. Why do more CIOs than their C-suite peers perceive a need to act quickly? In part, it may reflect the rapid evolution of their responsibilities, including the need to leverage and integrate new technologies before their competitors do.

How do added pressures to take up new technologies that could reshape their organizations affect how CIOs view their roles today and what they may need to change in the near future? We asked CIOs to hold up a mirror to themselves and tell us what it meant to be a CIO (see Figure 4). We had them select from a list of nine different roles, both business- and technology-focused.

Figure 4

Trading up

Primary roles of CIOs today and in two to three years



Q: Which best describes your CIO role today; what will you need to be in the next 2-3 years?
 Note: Percentages in each column do not total 100 due to rounding.

CIOs see themselves today as *technology visionaries* (24 percent) and *transformational business leaders* (21 percent). These are the foundational competencies of the contemporary CIO. Some continue to play more traditional roles – *IT coordinator and manager* (13 percent) and *trusted business advisor* (12 percent). These roles are more focused on maintenance, management and guidance rather than what is needed to drive the business.

We asked as well where CIOs anticipate they need to go tomorrow. In the next two to three years, CIOs see the job shifting to areas much closer to the business. The roles of *transformational business leader* and *technology visionary* still top the list, but *IT coordinator and manager* has dropped significantly. This signals that the traditional aspects of the CIO's job are becoming obsolete as technology permeates all aspects of business.

IT is not just an enabler; it is the driver of enterprise reinvention – and many CIOs want to lead that reinvention. This is made evident by the fact that roles like *digital reinventor* (12 percent) and *new platform builder* (11 percent) saw the greatest projected increases in the next two to three years.

Digital reinventors are leveraging new technologies to define and create the future for the organization. They aim to create better experiences for customers and employees alike. *New platform builders* are developing and building internal or external platforms. Internal platforms that span the enterprise establish standardized digital environments to drive business growth and facilitate collaboration and innovation. External platforms extend the enterprise to connect producers and consumers and enable them to interact.

“In the future, we would like to be known for creating a fintech platform that revolutionized our business processes, increased our digital customer base and helped us to generate more revenue.”

Chief Information Officer,
Financial Services, Netherlands

This role of *new platform builder* is especially attractive to Reinventor CIOs. They moved from 2 percent today to 14 percent in the next two to three years – the largest shift across all the roles. Importantly, in the Global C-suite Study we discovered that Reinventor organizations, already adept at ecosystem collaboration, are currently leading the adoption of new platform business models; CIOs should pay close attention to how this new role develops.

As CIOs strive to redefine and expand their scope – moving toward higher-value activities and wearing new hats – additional pressure comes to bear on the IT function. As the Global C-suite Study concludes, now more than ever, leaders need the fortitude for perpetual reinvention. CIOs are central to this reinvention, equal partners in developing the strategies necessary to success.

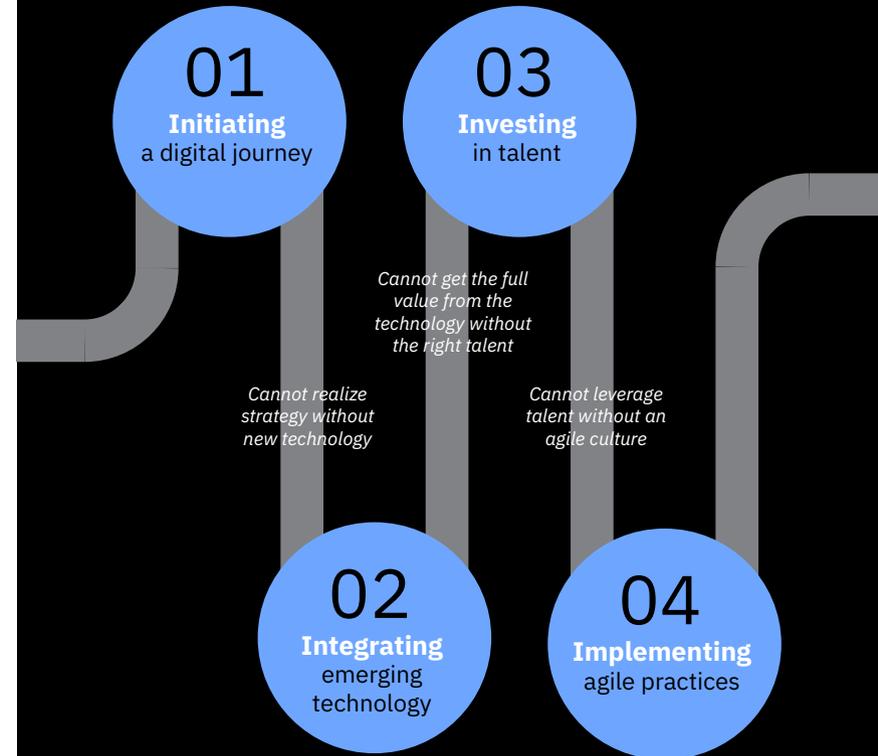
Here, we will explore four strategic areas, looking at what Reinventor CIOs do in their quest to become “more than meets the I” (see Figure 5). They do this by:

1. Initiating a digital journey
2. Integrating emerging technology
3. Investing in talent
4. Implementing agile practices.

Figure 5

Going places

Equipping for the digital journey



“Our aim is to disrupt this historically traditional industry and help it thrive in the new digital normal.”

Shaleen Devgun,
Executive Vice President and CIO,
Schneider, United States

Initiating a digital journey

Charting a course for a new destination is always a challenge; even more so when the objective for the enterprise is to stay on the move – in a state of ongoing and iterative reinvention. A successful start to the digital journey begins with a shared vision and a supportive, collaborative executive team with which to develop an enterprise-wide plan and platform for growth.

Reinventor CIOs have a strong foundation upon which to build their digital efforts. The vast majority report that their leadership teams are collaborative, communicative and insightful. Eighty-five percent of Reinventor CIOs have leaders with a strong understanding of where their industries are heading; 76 percent have leaders who actively promote transparency and continual dialog with employees to secure fresh insights. Moreover, 84 percent of Reinventor CIOs say their leadership works together effectively in a collaborative, collegial and productive way, compared to 64 percent of Practitioners and 34 percent of Aspirationals.

A leadership team that favors cooperation and insight puts Reinventor CIOs in a better position to guide their organizations in a new direction. When asked how effective their IT organizations are at facilitating reinvention, more than half of Reinventor CIOs said they were very effective at plotting an enterprise-wide digital strategy, surpassing the Practitioners and Aspirationals (see Figure 6). At the same time, nearly six in ten Reinventor CIOs consider themselves quite effective at building out the digital platforms that will create new opportunities for the enterprise and its ecosystem of partners and customers.

“There’s never been a better time to be a great CIO, and there’s never been a worse time to be an average one.”⁴

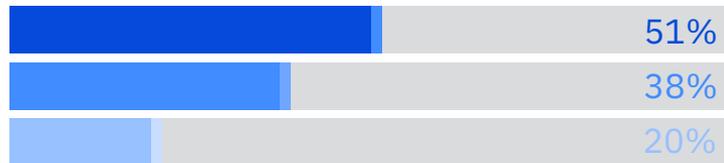
Figure 6

Stepping stones

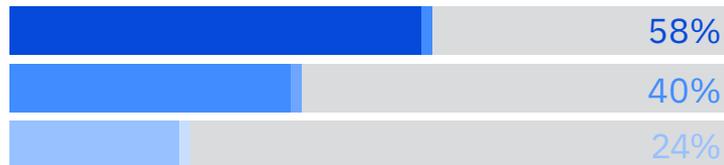
Laying the foundation for Digital Reinvention

Reinventors
Practitioners
Aspirationalists

Effective at facilitating Digital Reinvention with an enterprise-wide digital strategy



Effective at building a digital platform for the enterprise’s ecosystem of partners



Q: To enable business strategy, how effective is your IT organization at facilitating Digital Reinvention and building a digital platform?

George Westerman,
 Principal Research Scientist,
 MIT Sloan Initiative on the Digital Economy,
 United States

“IT is 1 percent of the budget, but it can transform the other 99 percent – that is what a digital plan is all about.”

Chief Information Officer,
Government, Canada

Clearly, Reinventor CIOs are better prepared than others for the first “I” – initiating a digital journey for their organizations. Guided by an understanding of the direction their industry is heading, they’re poised to reinvent their organizations using new digital strategies, business models and platforms.

Integrating emerging technology

The second “I” signifies the need for CIOs to adopt a systematic approach to integrating emerging technologies into their organizations. As more organizations shift their focus from product innovation to customer experiences and extend their value-creation activities to collaboration with ecosystems on platforms, understanding and experimenting with new technologies becomes more important than ever. For most, new technologies like artificial intelligence (AI), automation and blockchain offer new opportunity when built on a foundation of mobile, cloud, data and analytics capabilities.

CIOs are already adept at integrating more mature technologies such as mobile, cloud and IoT into their enterprises (see Figure 7). Almost all CIOs surveyed (94 percent) say they are integrating mobile technologies into their organizations. Eighty-four percent have efforts underway related to cloud computing and 74 percent in IoT. In both new and maturing technologies, a good number of CIOs are still in the “experimenting” stage.

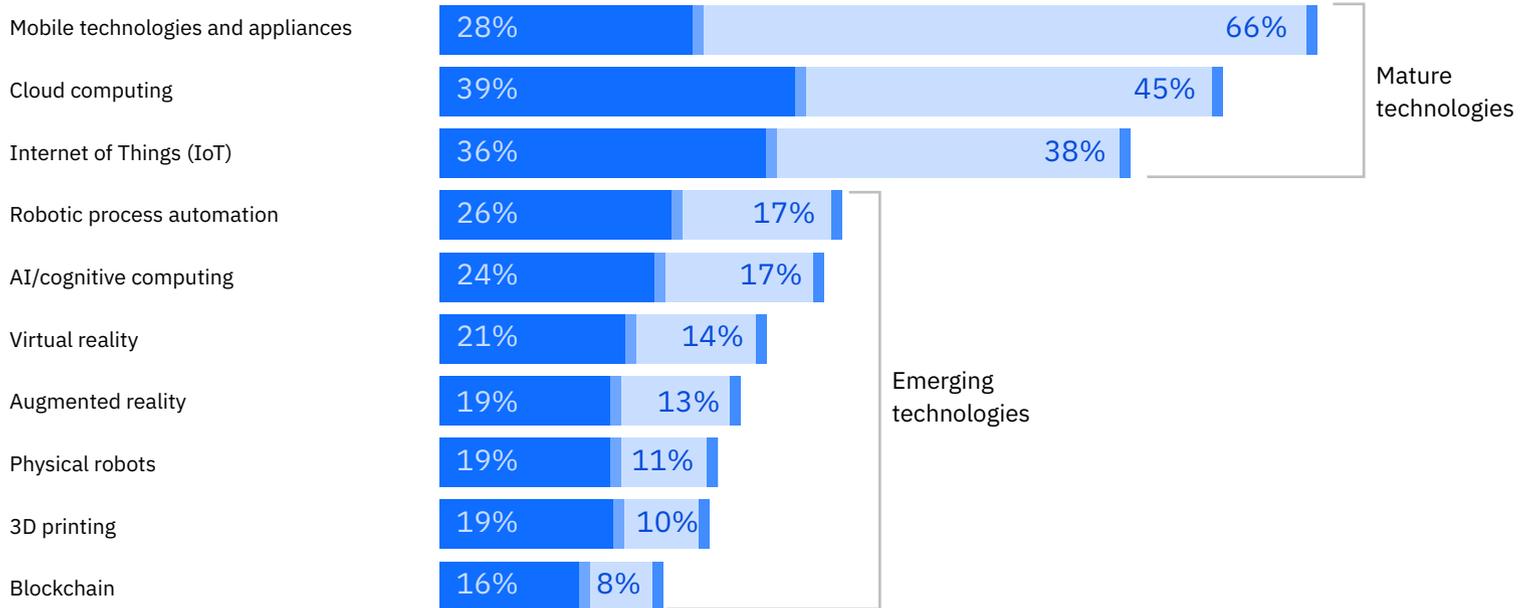
Figure 7

Many options

Efforts integrating technologies into the enterprise

Some effort

Significant effort



Q: How much effort does your IT organization dedicate to integrating these technologies?

“Emerging technologies, such as machine learning, analytics, chatbots and blockchain, can completely revolutionize our way of offering services and, as paradoxical as it may seem, they can humanize our digital services.”

Chief Information Officer,
Financial Services, Brazil

Experimentation is a critical proficiency for CIOs. They need to know how to explore with a goal in mind, get buy-in from other executives, address barriers to adoption and evaluate the results of their efforts. As technology visionaries, CIOs should be continuously experimenting with multiple emerging technologies.

With so many new technologies maturing – and compelling use cases evolving in every industry – CIOs are pressured to prioritize which emerging areas to invest in, and to balance investments in new and legacy systems. Reinventor CIOs are putting more efforts into each of these different technologies than their Practitioner and Aspirational peers. CIOs have to determine which technologies can provide new value, new business capabilities or a new competitive edge.

An important finding from the Global C-suite Study is that Reinventor organizations excel at using data to understand and discover their customers' unmet needs. AI, machine learning and cognitive solutions are one way they do that. Over half – 56 percent – of Reinventor CIOs are putting some effort or significant effort into this emerging technology area.

“We would like to deploy machine learning and AI to reduce repetitive tasks for employees and increase productivity.”

CIOs are exploring and evaluating the strategic importance and ramifications of these technologies on their organizations. Not only can they use them to help their businesses innovate, but they can use them to optimize and improve their own IT function (for example, in operations, help desk support and application development).

Those CIOs who plan to invest in AI/cognitive computing expect to accrue a number of benefits that can help them compete in the coming years. The top benefits identified were *enhanced forecasting and decision-making capabilities* and the *ability to personalize customer experiences*. The next choices were *optimized business processes* and the *ability to generate insights into customer needs*. This demonstrates that CIOs expect this technology to help both internally and externally – with the business and with customers.

In previous IBV research, we found that potential barriers to adopting cognitive capabilities included a lack of people skills, the degree of organizational readiness, and data issues such as governance and sharing.⁵ By overcoming these barriers, CIOs can realize the value of AI/cognitive computing, and shift their energy from the routine to the creative tasks that potentially offer more value to the enterprise.

Chandramouli Swaran,
Chief Information Officer,
Hinduja Global Solutions, India

“New technologies bring new skill and talent needs. The biggest challenge is how to quickly obtain new talent to fulfill the needs of these new technologies.”

Robert Tsai,
Chief Information Officer,
SinoPac Financial Holdings Co. Ltd.,
Taiwan

Investing in talent

Finding the right talent has been a perennial issue for CIOs. Today, it isn't just a concern for CIOs alone; it has moved up the ladder of external forces that C-suite executives say will impact enterprises most in the next few years. In the Global C-suite Study, we saw that people skills moved up from the fifth most important external force in 2015 to number three in 2017. Sixty-one percent of all C-suite executives selected it.

The right talent is essential for successful Digital Reinvention, and CIOs are facing intense competition for people with critical skills in emerging technologies – including AI, security, blockchain, data science and others. Organizations are pursuing a broad array of approaches to resolve their talent issues. Some are trying new strategies, such as acquiring companies primarily to bring onboard their talented employees, and novel recruitment methods, like sponsoring competitions or recruiting based on skills instead of higher education degrees.

Others remain focused on traditional means such as compensation, or internal retraining and education programs. Whether focusing on new or traditional acquisition and retention tactics, CIOs should keep in mind that emerging technologies may drive talent gaps on both the technical and business sides of the organization. In order to fully leverage the new capabilities enabled by emerging technologies, the business side will need to develop new skill sets as well.

CIOs see enhanced training and talent as key to their organizations' responses to the changing digital environment. We asked what organizational improvements their enterprises were most likely to implement within the next two to three years to respond to evolving digitization. CIOs told us that *training employees in emerging technologies* and *hiring talent equipped with digital skills* were numbers one and two, respectively. More CIOs chose those two than other training and talent options, such as *reorganizing teams*, *adding new collaboration tools*, *employing flexible work arrangements*, *using automation* or *developing new career paths*.

More Reinventor CIOs report they are quite effective at fostering emerging technology talent, but roughly half still say they need to improve. Fifty-four percent of Reinventor CIOs say their IT organization is effective at finding and developing talent with the necessary technology skills (see Figure 8). Looking two to three years out, all three groups express confidence they can improve their capacity to attract and develop talent. Eighty-six percent of Reinventors say they will be very effective, compared to 72 percent of Practitioners and 58 percent of Aspirationalists. CIOs appear to recognize their talent gaps, but they are looking for new approaches in order to match their confidence with results.

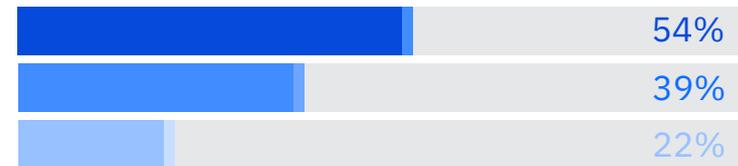
Figure 8

Mind the gap

Very effective at finding and developing talent with emerging technology skills

Reinventors
Practitioners
Aspirationalists

Today



In 2 - 3 years



Q: To enable business strategy, how effective is your IT organization today at finding and developing emerging technology skills and how effective will it be in 2-3 years?

“Human resources is a challenge. To increase our IT capabilities, it is important that HR at our headquarters and branches understands IT.”

Toshio Heya, Director,
The Hiroshima Bank Ltd.,
Japan

The competition for IT talent may continue to intensify, and because their purview is growing, CIOs and their organizations now require a vast array of technical and non-technical skills. Coupling that with the demands of the digital journey, it is obvious that everyone needs to get better at finding and developing talent in emerging technology areas. CIOs can't do it alone and must work closely with their human resource (HR) leaders to develop the right talent acquisition strategies for both current and future needs.

Implementing agile practices

The last “I” concerns implementing agile practices. Organizations cannot leverage their technology and talent effectively to meet their strategic goals without an agile culture – one that can respond rapidly to a changing market. Much has been said about agile techniques over the past decade as they have spread from software development into activities that span the broader enterprise. More organizations are finding new ways to speed time-to-market, prototype and experiment. They do so in large part by empowering individuals, breaking down silos to cross-pollinate ideas and collaborating closely with customers and partners.

More than 60 percent of Reinventor CIOs have the elements for an agile organization in place. They say their organizations operate in a culture that equally rewards fast failure and successful innovation. They have adopted a fluid work structure built on cross-functional teams, and their teams are empowered to decide on the best course of action (see Figure 9).

This is a good start but, looking deeper, CIOs, including Reinventor CIOs, aren't embracing agile practices in their own departments on a scale that can help them remain effective in the future. We asked CIOs to what extent their IT organizations use a spectrum of ten practices and methods that could enable a more responsive organization:

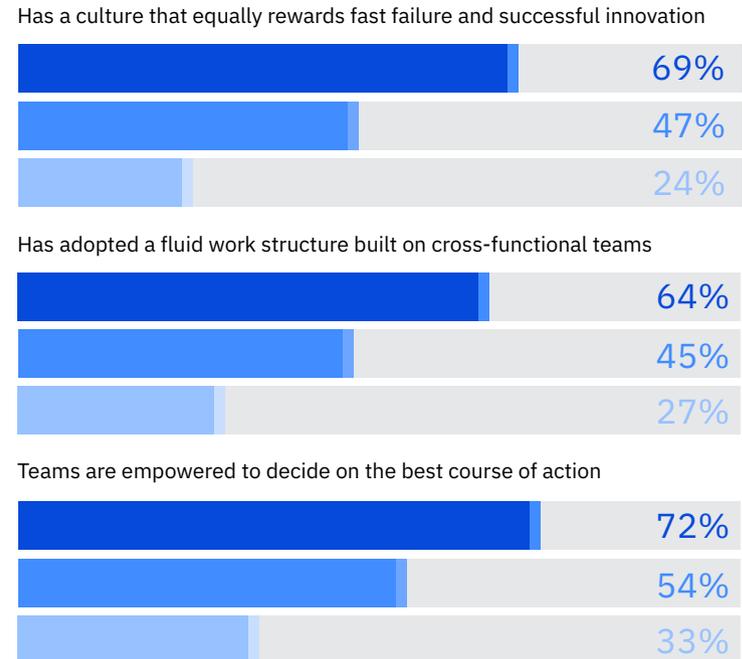
- Cross-functional, self-directed teams
- Continuous planning and delivery models
- Design thinking
- Automation technologies
- Culture and tools to promote collective intelligence
- Cloud and Anything-as-a-Service (XaaS) solutions
- Dedicated and specific education and coaching around agility practices
- Constant technology upgrades and updates
- DevOps and other formal agile methodologies
- A data-driven single view of the customer.

Figure 9

By design

Reinventors
Practitioners
Aspirationals

Reshaping the organization
for agility



Q: To what extent do you agree with these statements about your enterprise?

“We want to streamline our product delivery cycle with cloud computing and agile development techniques, like DevOps. We want to incorporate emerging technologies to develop new and interesting products.”

Chief Information Officer,
Financial Services, Azerbaijan

Responses were fairly uniform for all CIOs across the ten practices, with the mean of all responses falling at 3.1 (on a scale of 1 to 5, with 5 being “using to a large extent”). The fact that CIOs are using these methods to a limited degree today implies they are applying them to specific projects and programs, rather than implementing them across the entirety of legacy and new activities. It’s possible that CIOs don’t have the necessary buy-in from their teams or senior leadership; that different parts of the IT organization aren’t as aligned as needed or are still on a learning curve.

CIOs recognize the need for improvement; going forward, they expect to change their level of agile adoption. When asked to what extent their IT organizations will use agile practices in the next two to three years, the mean of all responses increased to 3.8, almost a full point higher on the 5-point scale. This is movement in the right direction, but not fully sufficient.

CIOs should aim to push their organizations harder toward agility. The desire appears to be there, but for many, the path forward may not be clear. A good place to begin is to train the organization on agile practices – though not even Reinventors are doing that enough today. Only half of Reinventors have dedicated agility education efforts, or use DevOps and other formal methodologies. Aspirational and Practitioners report doing so even less (see Figure 10).

For CIOs to fully enact their digital strategies and stay ahead of their competitors, an agile culture supported by specific methods and practices is essential. Empowered teams are a good start, but CIOs must fully embrace agile practices to help redefine their

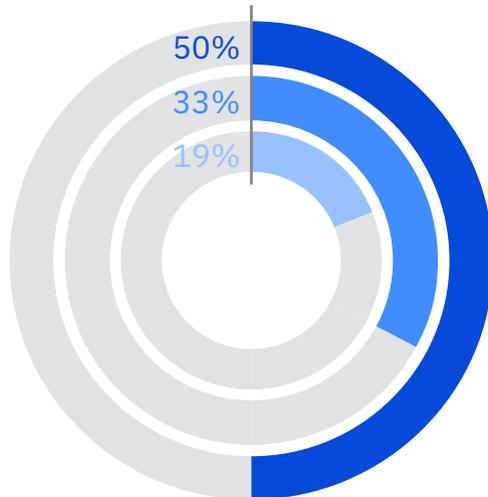
organizations. CIOs should focus on shifting the organizational culture to be more iterative, experimental and entrepreneurial – not just for software development or single IT projects, but for cross-enterprise endeavors as well.

Figure 10

Jumpstart

Embracing agility training and methodologies

Use dedicated and specific education and coaching around agility practices to a large extent

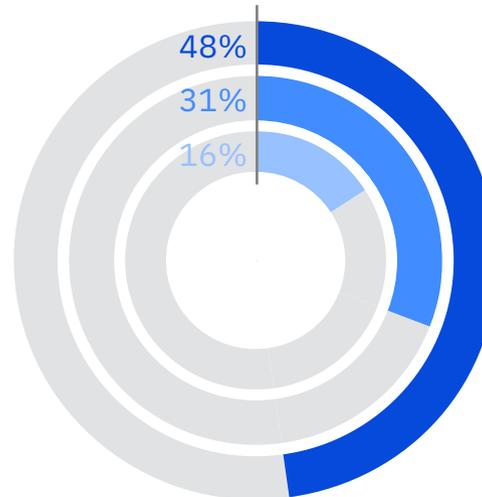


Reinventors

Practitioners

Aspirational

Use DevOps and other formal agile methodologies to a large extent



Q: To what extent does your IT organization use these practices and methods?

How to redefine the “I”

Arguably, the role of the CIO is getting harder, not easier. We have seen in our research that CIOs have made great progress to date, evolving beyond the traditional duties of IT managers and coordinators. As their roles expand and CIOs take on more business leadership responsibilities, they are acting as navigators for their organizations’ digital journeys.

The Reinventor CIOs are a good guide to the future. They are using Digital Reinvention as a catalyst for the transformation of the CIO role. They are becoming “more than meets the I” by equipping their organizations with better strategies, employing emerging technologies, nurturing talent and building an agile culture. But even the Reinventors must continue to make improvements. What can we learn from them? Which actions do all CIOs need to work on?

Identity – Figure out who you are and what you want to be

This may sound like an existential question, but it is important for CIOs to reflect on how they see themselves and how the rest of the C-suite views them. CIOs must decide what they want their narrative to be and how they will communicate it to the rest of the C-suite.

- *Figure out which hat you need to wear, and when.* CIOs can't do everything at 100 percent, 100 percent of the time. The nine primary roles discussed in this study are elements of what a modern CIO needs to be. Determine what you want to focus on in your tenure as CIO, and get buy-in from your C-suite colleagues. What do you want to be primarily known for? Do you want to be a *new platform builder*, a *digital reinventor*, a *technology visionary* or something else?
- *Find a balance.* Many forces pull constantly on the CIO. Strive to find a balance between an internal and external focus, between business and technology, between cost takeout and innovation, and between emerging and legacy platforms and technologies. Use savings from legacy improvements to fund emerging technology efforts. Clearly identify one or two short-term and long-term goals. Delegate things that don't align with your narrative.
- *Claim your role in Digital Reinvention.* As part of perpetual reinvention, more CIOs are looking at becoming *new platform builders* and *digital reinventors*. If owning or participating in a platform is right for your organization, understand what it will take to drive one as CIO.

“My responsibility, as CIO, is to create flexible systems and to anticipate the future, not just to respond to the current business environment.”

Yoshihito Kashiwabara,
Director, Sompo Japan Nipponkoa
Himawari Life Insurance, Inc., Japan

Capacity – Advance technology and talent in tandem

There is a wide variety of emerging technologies that CIOs can employ to help push their organizations past the competition. CIOs can't look at technology in isolation; they must consider the ramifications to talent as well – and keep everything in sync. Technological capabilities, such as AI, automation and blockchain, are of little value if an organization doesn't have the talent to effectively use them broadly.

- *Build a robust experimentation capability.* Have a formal way to decide which emerging technologies can provide new value and new capabilities, or enable new products and services. Make sure to bring the business into your experiments, reward both success and failure, capture lessons learned and provide your teams with needed support and protection.
- *Don't go it alone.* CIOs must work with the CHRO and other HR leaders to develop the right talent strategies to meet their current and future needs. In addition to developing new tools to help your CHRO find talent, enlist your CHRO to help you find the talent to build new tools. Pay attention to the employee and candidate experience – share best practices on how to make your organization a great place to work, to help attract, develop and retain top technical talent.

- *Investigate how AI can change both your business and your IT organization.* The impact of AI will be non-trivial. It is best to prepare sooner, rather than later. Identify challenges that AI can resolve and begin experimenting now. Make sure you have in place the data foundations you will need. Assess how AI can augment the skills of your current staff and how it may require finding new talent with new skills. Educate your colleagues on what the enterprise may need.

Energy – Spread an agile culture

Practically everyone is on a learning curve when it comes to agile environments. The goal is to develop and hone processes and methods that ultimately lead to the establishment of a sustainable agile culture. Because of CIOs' history with agile software development, they are well-positioned to be passionate leaders of the broader organizational adoption of agile principles.

- *Focus first on education.* Although many organizations are using DevOps, self-directed teams, short development cycles and customer-centric practices in some capacity, getting the entire IT organization formally trained can allow greater discipline and focus. With the goal of building an end-to-end agile program, make agile educational resources and formal guidance available to your organization.

- *Look beyond IT.* As you focus more on supporting the strategic needs of the business, developing new products and services, and fostering closer connections to customers, look to employ agile practices for broader business topics as well – moving out of the software development silo. Identify a new business initiative that could benefit from an agile approach, and volunteer to share your experience.
- *Enable the rest of the C-suite.* To get broader adoption, figure out how to successfully expand current agile efforts beyond your own organization. If you are going to help lead the ongoing digital drive for the entire enterprise, you'll need to educate C-suite colleagues on agile methods. Create a culture where the essence of agile remains intact, and don't let it become just another buzzword. Sensitize your colleagues to cultural resistance that may be slowing the development of an agile culture.

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To read the full report, “Incumbents Strike Back,” please go to ibm.com/globalcsuitestudy. You can also find copies of our monthly insights and four related C-suite executive reports on IoT, artificial intelligence, blockchain and the experience revolution at the same location.

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Notes and sources

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Armonk, NY 10504

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