



# CIO AS INNOVATION AND TRANSFORMATION LEADER

# FOREWORD

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This year marks ITWC's fifth annual CanadianCIO Census, an undertaking through our digital media property, CanadianCIO. Every year, we take a comprehensive look at IT professionals' concerns, priorities, budgetary realities, hiring plans, and future expectations.

In this year's edition, I have had the great pleasure to work alongside Dr. Ron Babin from Ryerson University. His participation in the analysis of the results has been critical to painting a fully developed picture of the challenges facing CIOs as they navigate the ever-evolving digital world.

It is my hope this report will provide the information you need to realistically evaluate the role of IT at your company compared to other companies, and get a clearer view of how other IT leaders are preparing for the future.

Special thanks to CA Technologies for supporting this project, and to the 164 CIOs who took the time to respond to the survey.

**Jim Love**  
CIO, ITWC

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# EXECUTIVE SUMMARY

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It's a good year to be a CIO in Canada. Canadian CIOs are enjoying a strong year in terms of allocated budgets, hiring plans, executive responsibility, tenure and the security of their role.

CIOs in many sectors, particularly financial services, retail, and communications, are taking a leadership role in the digital transformation of their organizations. For some companies, digital transformation (relying on cloud, big data, mobility, and social media) is the key competitive issue, with challenges to traditional business models. As an example, this past June, Sears Canada filed for bankruptcy protection while Amazon continues to enjoy double-digit growth.

**A good year does not necessarily mean an easy one.** CIOs are increasingly challenged to “keep the lights on” in support of business operations while driving the transformation of the business to maintain the loyalty of customers who via the Internet have access to nearly limitless alternative options.

And CIOs need to do it all while protecting their organization's vital data and systems from global (or local) cyber-attacks. Recently, a global ransomware attack crippled many businesses, particularly in Europe. This past May, a malware attack crippled most hospital systems in the UK. While this priority is clearly recognized, CIOs in Canada have so far been spared attacks of this magnitude.

The census shows that **the rise of the Chief Digital Officer (CDO) is a myth.** The challenge of digital transformation, bridging the legacy of thirty years or more of IT investments with new, fast-paced, low-cost digital technologies, is being spearheaded by individuals who retain the CIO title. While a CDO will embrace the new technologies, the CIO has the breadth of knowledge to encompass both the old and the new. Data shows that few organizations have hired, or plan to hire, a CDO. Meanwhile, the average time a CIO spends in his or her role has increased from seven-and-a-half to just over eight years. The CIO is the de facto technology leader and executive partner for digital transformation.

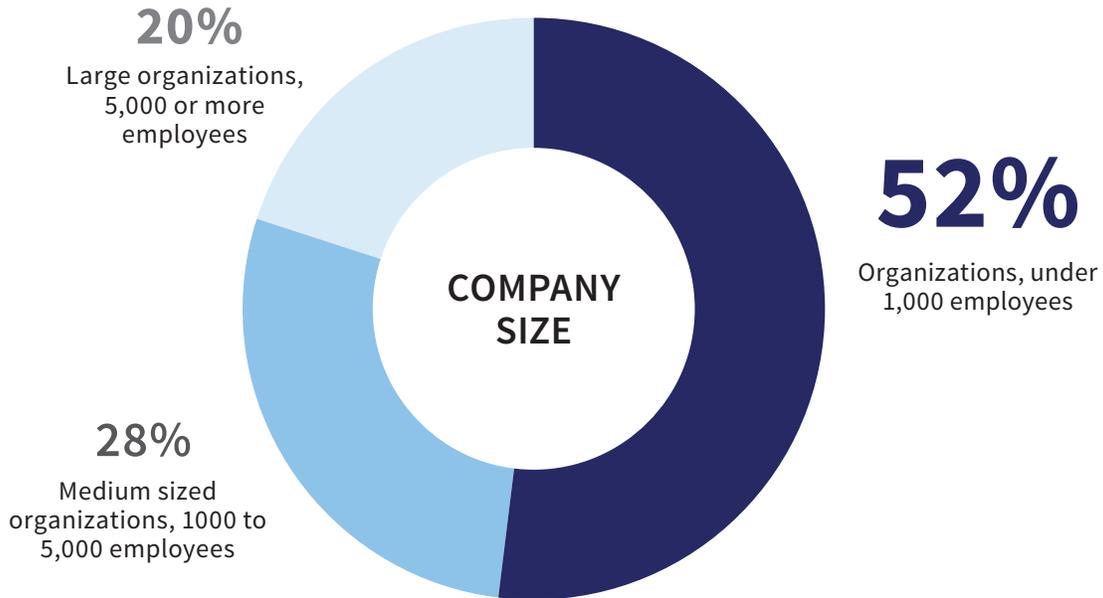
**The technology set has never been richer for CIOs.** In addition to the digital set mentioned above, new, enticing technologies such as Artificial Intelligence, Robotic Process Automation, and the Internet of Things are on the horizon. Canadian CIOs are watching technology developments cautiously, but are not yet prepared to deploy them.

**The one “sure” technology is cloud services,** which has surpassed the expectations of many CIOs, contributing to potential lower operation costs while providing fast flexible reliable and secure service. Plans for 2018 indicate strong growth in cloud, while on-premise infrastructure will decline. This trend is reinforced by the arrival of several global cloud service providers in Canada.

Canada is very strong right now in terms of GDP growth, labour participation, and many other economic indicators. To support digital transformation, **CIOs are being encouraged to hire and have growing budgets - some growing by more than 15 per cent.** Similar data from the US shows that IT budgets are at an all-time high — a step-change difference from the late 2000s. This may change, as it has in the past, when the Canadian economy plateaus or declines.

So — hire now, build the competitive digital platforms now, and enjoy the profile of executive digital strategist. Next year is far enough away.

# CENSUS DEMOGRAPHIC



The annual survey consists of 42 questions and solicited views on everything from hiring and spending priorities to the challenges CIOs face as they deal with digital transformation. The survey was distributed in April of 2017 and results were tabulated in May /June.

This year 164 IT leaders, mainly CIOs, completed the online survey.

- The overwhelming majority of respondents were from the IT discipline: 90% of respondents identified IT as their primary area of functional responsibility. Additionally, 92% worked in IT earlier in their career, with those who worked in Operations a distant second at 21%.
- Respondents worked in businesses of all sizes: 33% were

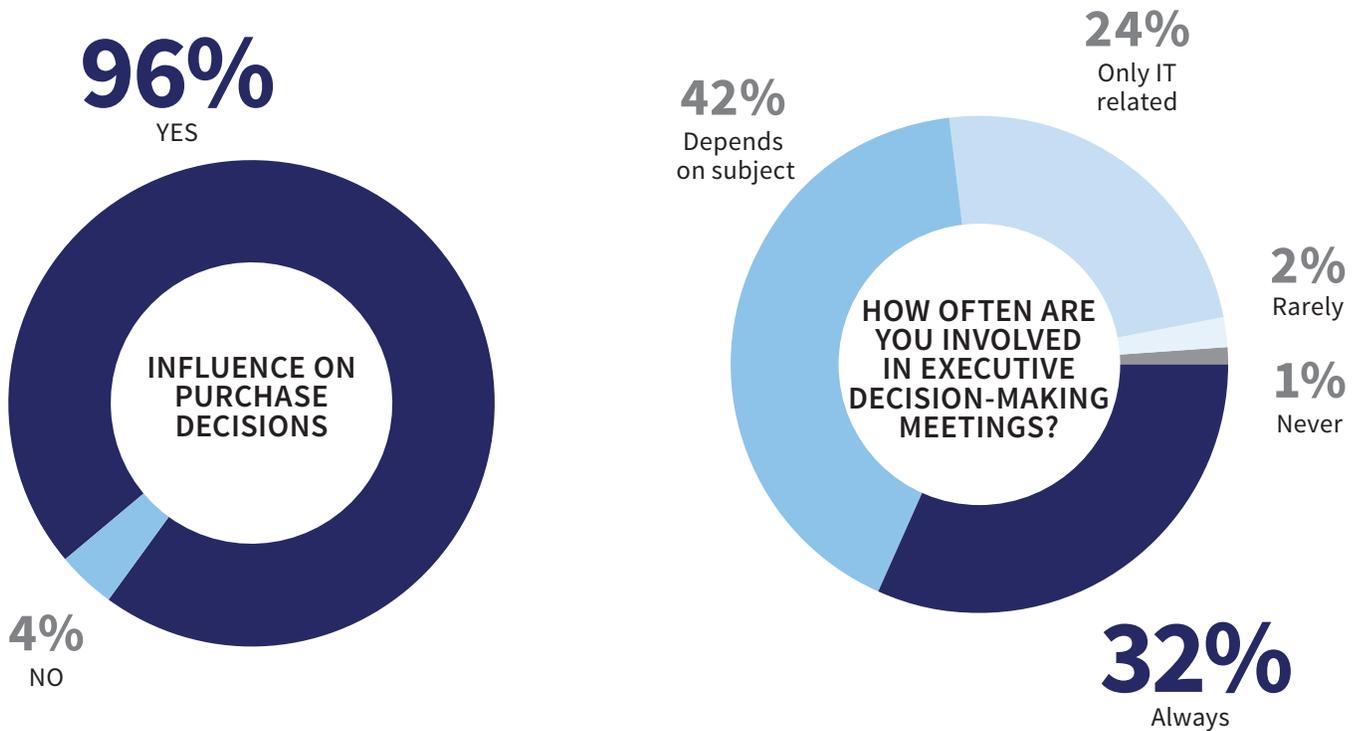
in organizations with revenue of half a billion or more; 32% had revenue of \$100 million to \$500 million; and 35% had revenues below \$100 million.

- 52% of respondents were from organizations, with under 1,000 employees; 28% were from organizations with 1,000 to 5,000 employees; 20% were from organizations with 5,000 or more employees.

## PRIMARY RESPONSIBILITY: IT



# THE EVOLVING ROLE OF THE CIO



The CIO influence within the organization, especially at the executive level, continues to grow. Acknowledged as the technology leader, the CIO is able to bridge in-place technologies required to run the business, while increasingly guiding the company on how to grow and transform the business using digital technologies.

As digital transformation becomes increasingly important for organizations, the CIO is the de facto technology leader for these innovations. Growing CIO influence is demonstrated by larger budgets, increased hiring plans, and a lengthening job tenure — all related to digital transformation.

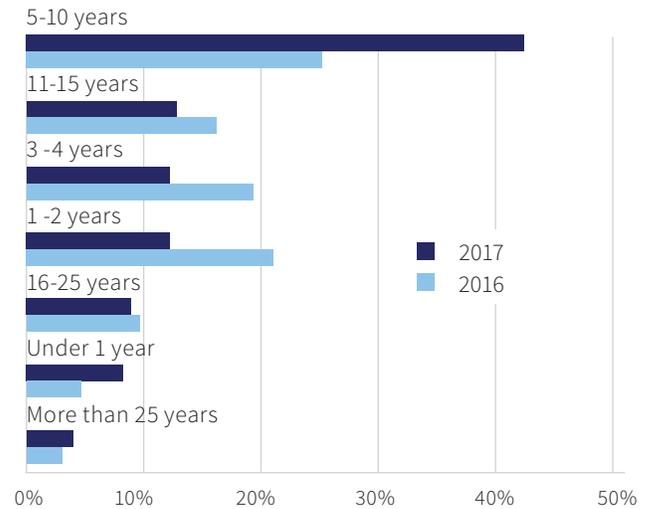
Some key insights about the changing nature of the role :

- 97% of respondents are involved in executive decision-making meetings.
- 96% have involvement or influence over technology-related purchase decisions.

# THE EVOLVING ROLE OF THE CIO

- The most common titles are CIO (31%) or IT Director (27%), more than half with five years or more in that role. The mean for years of service in the role is just over eight, which has grown steadily over the last two years.
- 30% of respondents report to the CEO, 21% report to the CFO. This mirrors last year's findings.

## YEARS IN THE CIO ROLE



## LIFE BEFORE THE CIO ROLE

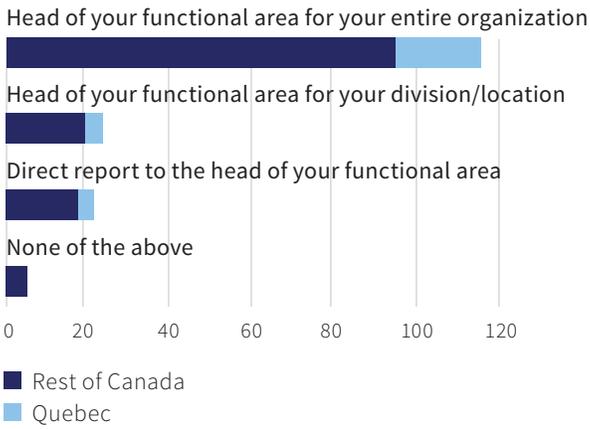


# THE EVOLVING ROLE OF THE CIO

In short, CIOs have longer tenure in their positions, report to and are involved with increasing senior executive levels, and

as we report next, are planning to hire and increase spending in IT. 2017 is a good year to be a CIO in Canada.

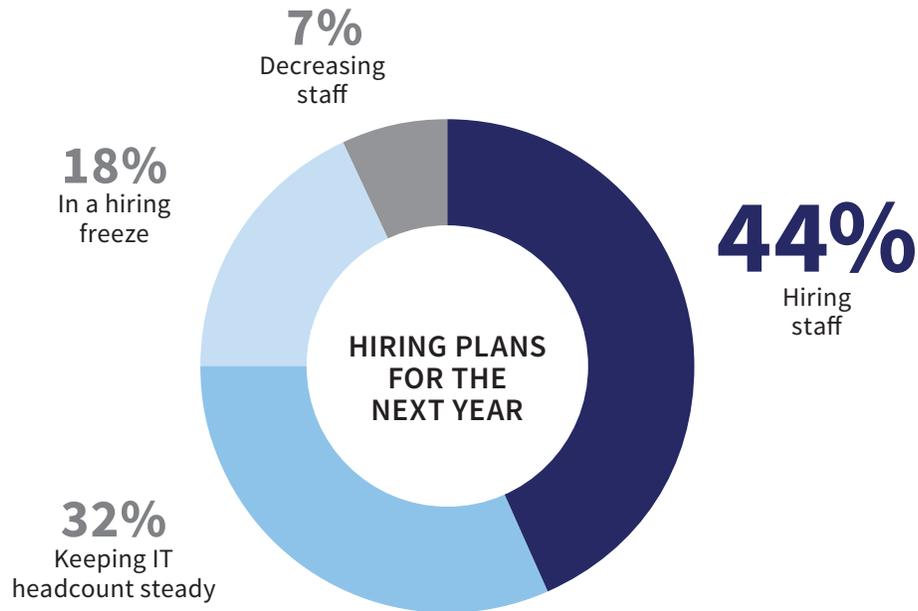
## RESPONSIBILITY: In this role you are...



## WHO DO YOU REPORT TO AT YOUR ORGANIZATION?



# HIRING



A large percentage of IT organizations are hiring staff – 44% have plans to hire in 2017. Approximately half of respondents are holding steady on IT headcount, and a only a small portion (7%) have plans to reduce headcount in IT.

Two new roles, Chief Security Officer and Chief Compliance & Risk Officer, are in place for about 35% of organizations, with limited or no plans for further hires in these roles. In contrast, **the new roles of Chief Digital Officer and Chief Innovation Officer have had limited**

**uptake**, with only 10 to 15% of organizations reporting that such a role is currently in place.

For 2017, the most popular roles for planned hires (with no plans for downsizing) are as follows:

## HIRING PLANS 2017

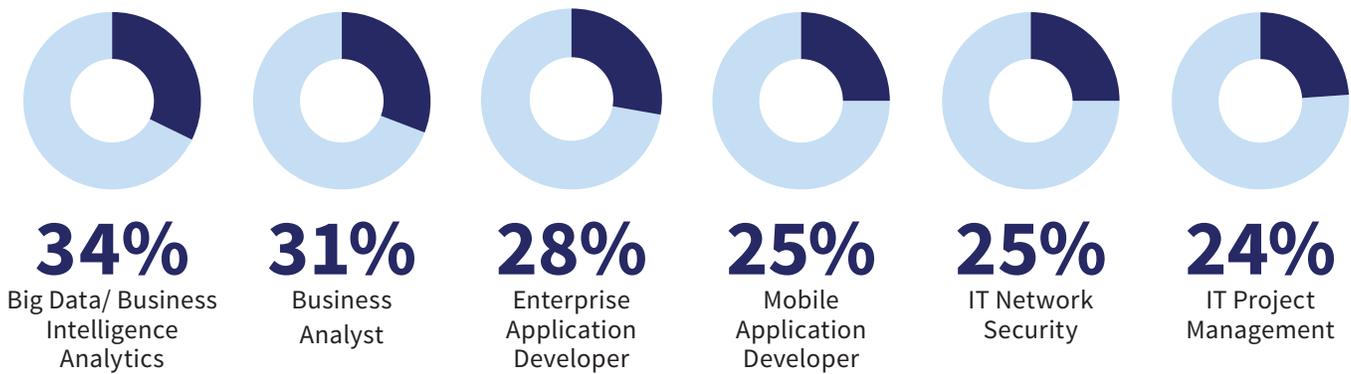
	Hiring	Down Sizing	Remain the Same
Big data/BI/Analytics	34%	2%	45%
Bus. Analysis	31%	2%	56%
Enterprise app devel	29%	4%	48%
Mobile app devel	25%	2%	43%
IT project management	24%	5%	67%

## HIRING PLANS 2016

	Hiring	Down Sizing	Remain the Same
Enterprise app devel	24%	6%	53%
Big data/BI/Analytics	22%	2%	49%
Mobile app devel	19%	2%	39%
Bus. Analysis	18%	4%	63%
IT project management	17%	4%	68%

# HIRING

## PLANS TO HIRE



The 2017 hiring intention results reveal a lot about the way CIOs plan to navigate the rapid changes they face. **Security hiring is certainly expected** given the wave of news in relating to hacking and malware. Likewise, in a mobile-driven world, new mobility application development is also predictable. The realization that more has to be done in analytics and the hiring of business analysts reflects the focus on business results. The

priority put on enterprise application developers, along with project management, show a real focus on the application stack — whether integrating or updating legacy applications. **Clearly there's a strong emphasis on enterprise-wide developments.**

In contrast, the least popular roles, with limited hiring plans and strong downsizing plans, are as follows:

### LEAST LIKELY TO HIRE 2017

	Down Sizing	Hiring	Remain the Same
Data centre management	11%	7%	68%
General IT	10%	6%	75%
Training	8%	6%	61%
Networking/Network admin	5%	7%	82%
Telecommunications	4%	5%	75%

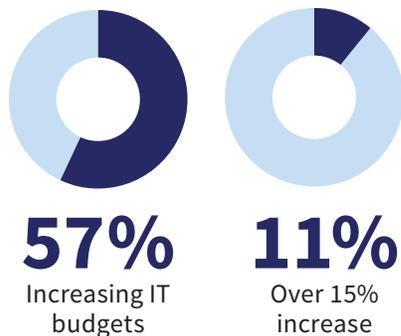
### LEAST LIKELY TO HIRE 2016

	Down Sizing	Hiring	Remain the Same
General IT	10%	12%	79%
Data centre management	10%	3%	71%
Networking/Network admin	6%	5%	82%
Training	5%	4%	64%
Telecommunications	5%	3%	75%

# BUDGET AND SPENDING

CIOs' responses to budget questions align with their responses to hiring. Most expect the multi-year trend to increased investment in technology to continue. More than half of respondents (57%) are expecting to see budget increases. Some (11 %) envision substantial increases in excess of 15 per cent. A few companies (15%) indicated plans to decrease IT budgets.

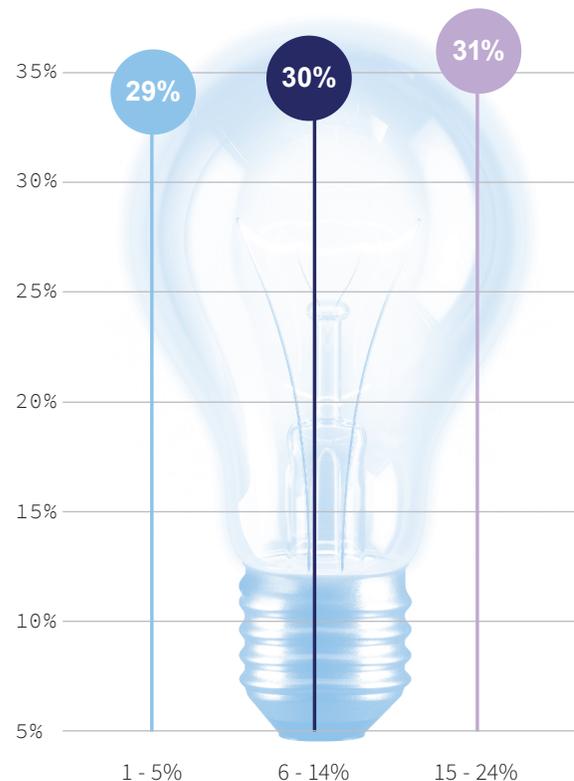
## IT BUDGETS ARE INCREASING



How much of the budget increase will translate into spending on innovation? **It appears the bigger the budget increase, the bigger the percentage going to innovation spending.** For companies planning for a 1- 5% budget increase, 29% would be allotted to innovation. If the expected budget increase was between 15 and 24%, the innovation allotment would be 31 per cent.

When asked specifically about the percentage of IT budget earmarked for innovation, over 30% of respondents indicated they were planning to allot 15% or more for innovation and new initiatives. An additional 30% are planning budget allocations of six to 14% for innovation and new initiatives.

## INNOVATION SPENDING INCREASES



# BUDGET AND SPENDING

Two other findings of note in the survey around spending:

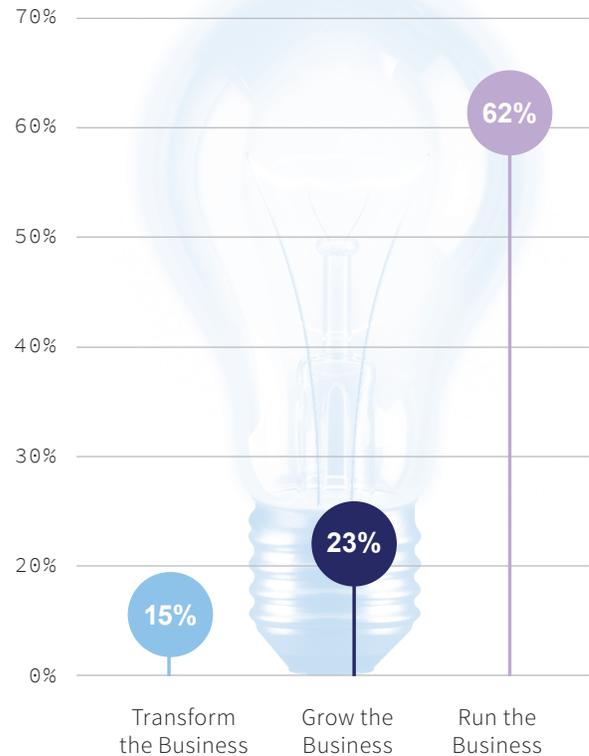
- The majority (60%) of IT annual spend falls in the range of \$2k to \$7k per employee
- 18% of respondents spend more than \$7k per employee, 21% spend less than \$2k per employee

Additional perspective comes from the allocation of IT spending to three areas: Run the business, Grow the business and Transform the business

Although IT spending to run the business is the largest portion (62%), it is steadily declining over three years. The percentage of IT spending to grow (23%) and transform (15%) the business is steadily increasing. This is not a single year phenomenon. It reflects a pattern of growth over the past three years. Further discussion is below in the section that compares 2017 with previous years. The table below provides a short definition of the three spending categories.

The most significant trend is the three-year increase in budget with the related trend to shrink of the budget to run the business and the increase in spending to grow and transform the business. CIOs have worked diligently to find cost savings in the operations of IT, and to apply those funds to areas about which the business cares deeply. It appears their executive teams are also recognizing the value IT can deliver, particularly when digital disruption is expected to impact the organization now or in the next twelve months.

## KEEPING THE LIGHTS ON CHEWS UP MOST OF CORPORATE IT BUDGETS



## SPENDING PRIORITIES

		2015	2016	2017	
Run	IT is focused on the continuing operation of the business	67%	65%	62%	↓
Grow	IT is enhancing business outcomes in existing markets	19.5%	20.5%	23%	↑
Transform	IT is entering new markets with new value propositions	13.5%	14.5%	15%	↑

% of IT spend

# PRIORITIES AND IMPACTS

It's no surprise that data security and data privacy are the top day-to-day priorities for Canadian CIOs. It has been that way since the CanadianCIO Census was launched and there is little reason to expect it will change in the immediate future. Data is a company's lifeblood, and protecting it is foundation to the CIO role. With the increasing pressures in the marketplace, where anyone with a computer and a website can become a competitor, it's equally unsurprising that uptime and reliability are top-tier concerns.

What may be surprising for some is that **business innovation in products, services and processes has now been identified as one of the top three day-to-day priorities.** This is a significant jump in priority level over 2016, and it's indicative of the CIO's need to collaborate more closely with the business-side leadership to improve customer service, customer retention, and customer acquisition.

The finding also aligns with the growing portion of budgets allotted to growing and transforming the business. CIOs must now balance the protection and reliability of the business systems with the need to help their company innovate — to competitively grow and transform using digital technologies.

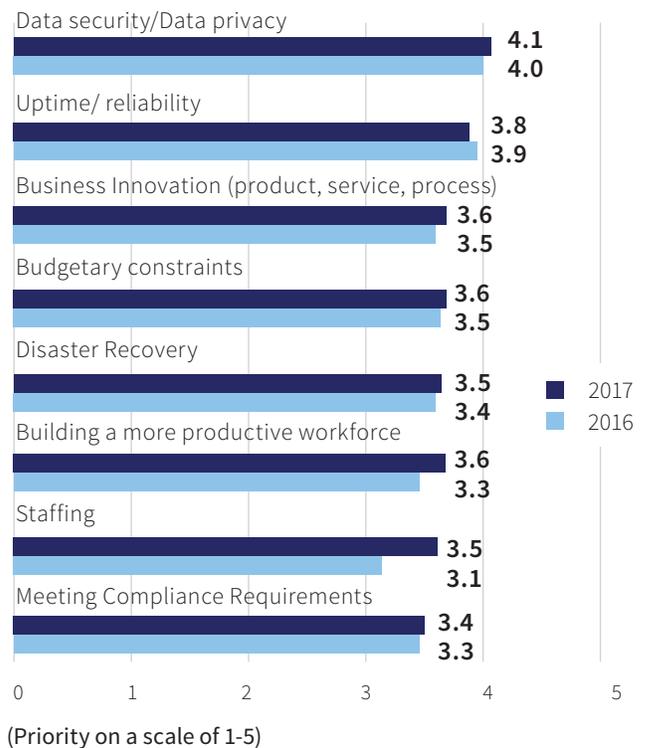
## Twelve-month view

Looking a year out, CIO priorities remain divided between protection and growth or digital transformation. Over the next year security is the number one priority and disaster recovery is number three. The number two priority is the customer experience. This is a significant indication of the new relationship with the line-of-business side of the corporate house. With business intelligence, big data and analytics rounding out the top priorities, **it is evident the CIO's dual focus will extend for several years.**

## Five-year view

In the longer term (next five years), CIOs continue to rank Big Data/Analytics as the issue that will have the most significant business impact. This is consistent with the 2016 Census. However, in 2017, **digital transformation is identified as the second most significant issue** by 21% of respondents —

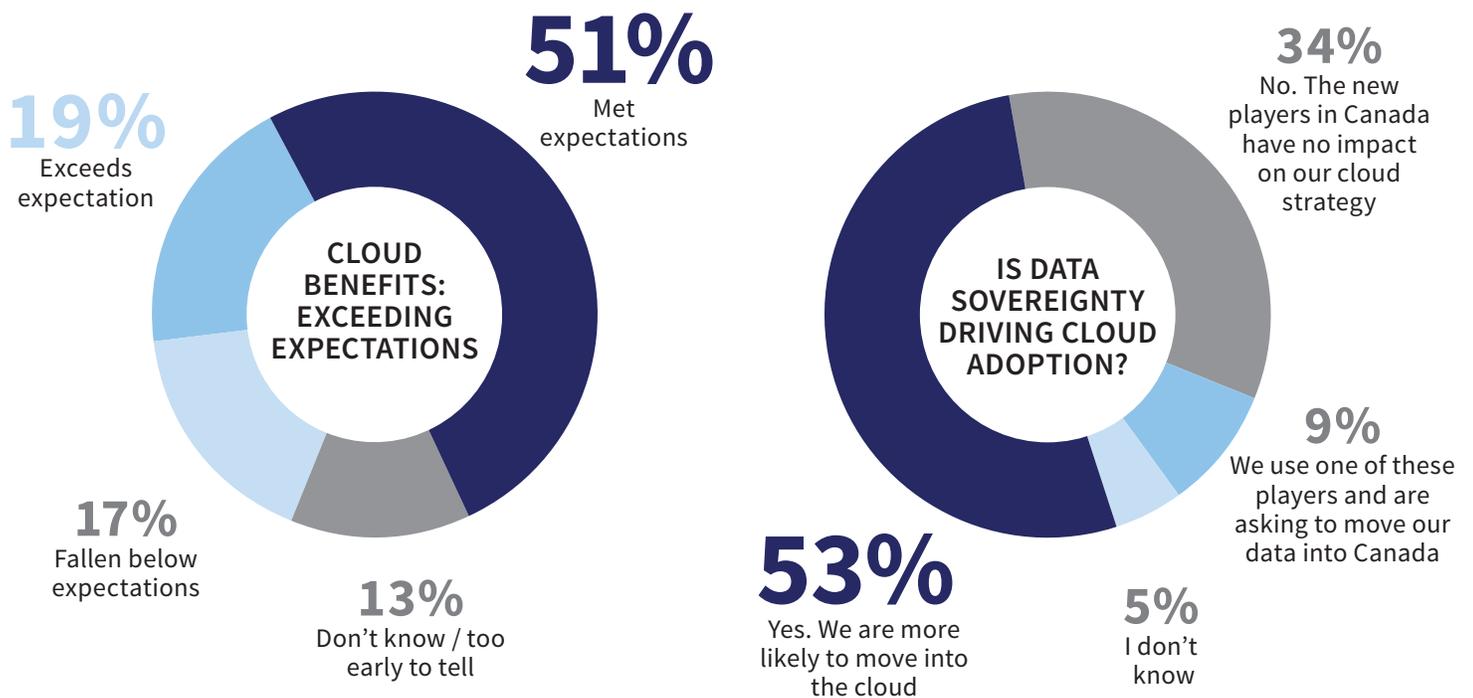
## DAY-TO-DAY CONCERNS: 2016/2017



almost double the 12% who identified this in 2016. Customer experience is consistently the third priority in 2016 and 2017, while Security is number four in 2017 and number five in 2016. Of interest is Cloud, which has dropped to number seven in 2017, from number two in 2016. CIOs perhaps see Cloud as more fully adopted within five years, with lesser impact into the future.

# TECHNOLOGY TRENDS

The cloud is king – for now. CIOs who may have been slow to embrace it for security or data sovereignty issues now rate the cloud as the most productive technology in their growth arsenal. It has replaced traditional outsourcing for infrastructure service.



**Cloud is the new and growing wave outsourcing.** It scores the second highest “benefits realized” score, compared to ten other technologies. In contrast, traditional outsourcing ranked seventh on this list. By far the most productive technology, 70% of respondents rated cloud as having met or exceeded expectations, and more organizations are using cloud services. Cloud services are displacing traditional outsourcing, especially for infrastructure services (e.g., data

centres, servers, storage). Further growth in cloud services is expected next year in Canada as vendors have moved to remove the one remaining obstacle to Canadians embracing cloud for their key infrastructure — data sovereignty. **The majority responded that they are more likely to “move into the cloud” now that “significantly large cloud providers have recently moved to Canada and are addressing the concerns of data sovereignty.”**



# TECHNOLOGY TRENDS

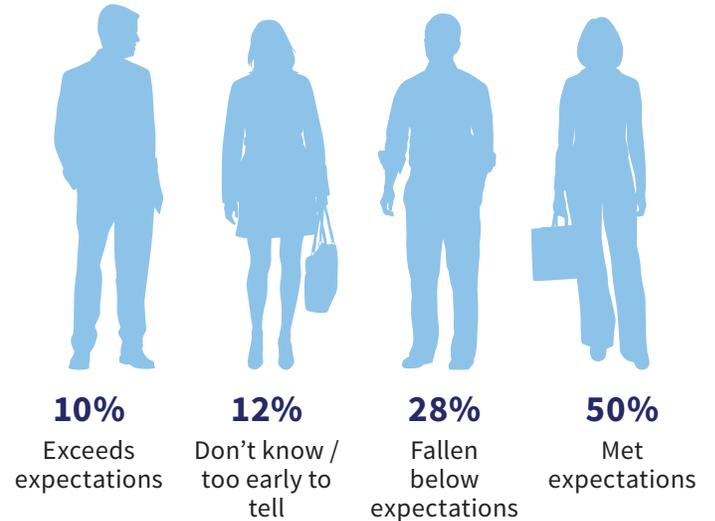
## Outsourcing disappointment

Outsourcing, traditionally defined, is a disappointment to many CIOs. With 28% of respondents rating the benefits of outsourcing below expectations, vendors face a significant challenge to demonstrate value of outsourcing. **Only 10% felt that outsourcing has exceeded expectations.** For those who have noted benefits from outsourcing, the key benefit is the reduced time spent on infrastructure maintenance (55%). While we did not see clear indications of a decline in traditional outsourcing, it does appear that the past decade of rapid growth is slowing or coming to a halt. Most (55%) organizations expect that their usage of outsourcing — onshoring and offshoring — will remain the same in the next two years.

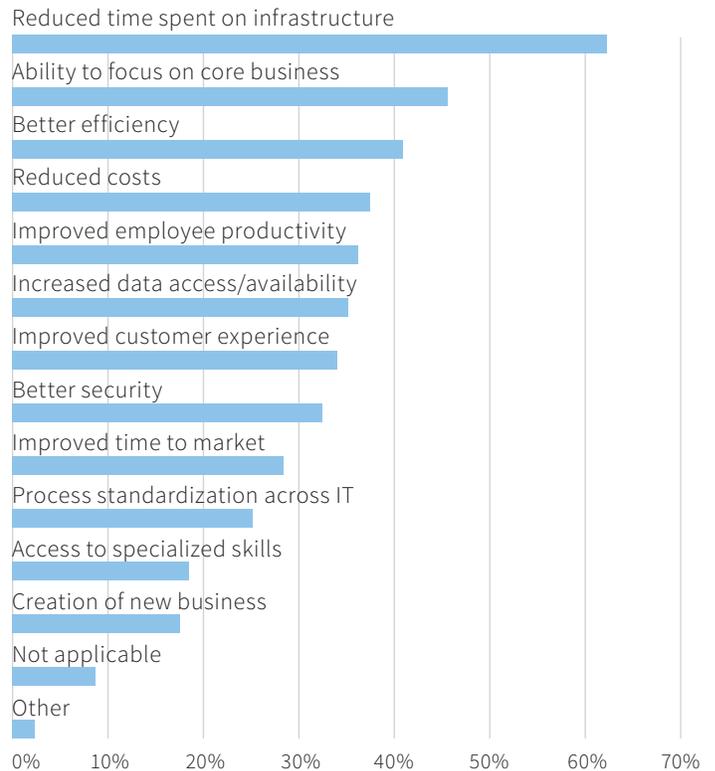
## Other disappointments

Puzzling, given the amount of publicity these areas have received are four areas — Social Media, Internet of Things (IoT), Artificial Intelligence (AI) and Blockchain — all rated as the lowest in terms of “benefits realized to date from investments” from these technologies. CIOs are still contemplating how to get value from these enticing, new technologies. Of all these, IoT remains the largest puzzle. In our journalism, we have found many first-hand accounts of how sensors and data analysis, the heart of IoT, have made quantum improvements in a wide array of industrial uses. Despite that, 40% of our respondents are simply monitoring the technology: “on our radar but no immediate plans to deploy.”

## OUTSOURCING: FAILING TO MEET EXPECTATIONS

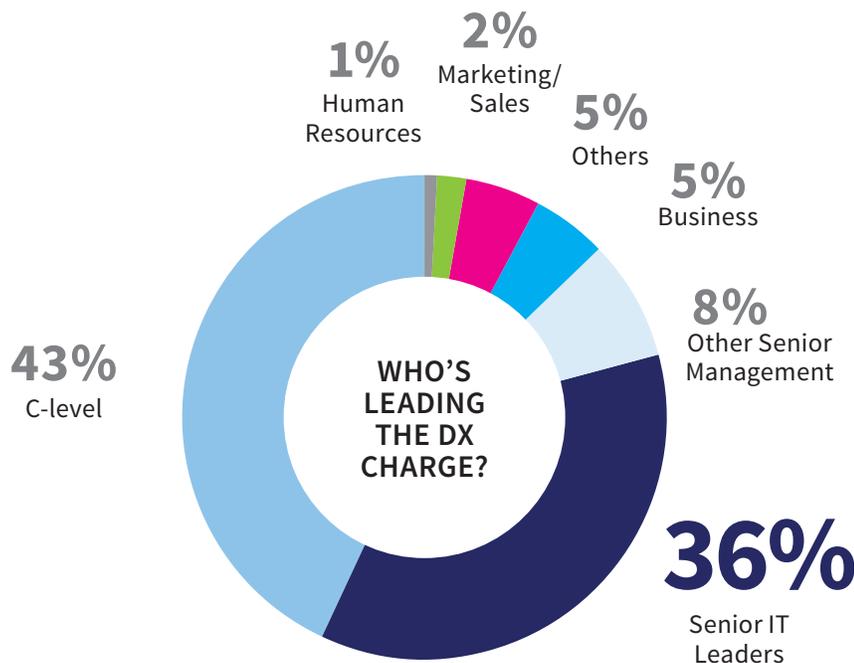


## BENEFITS SOUGHT FROM OUTSOURCING



# TECHNOLOGY TRENDS: DIGITAL TRANSFORMATION

Digital transformation emerged in this census as a real and recognized challenge, with 57% responding that their business will feel the impact of change now or in the next year. A further 34% will see digital transformation's impact in the next two to five years. A mere 2% feel their industry won't be impacted.



Digital transformation is intrinsically linked to the need to respond to customer expectations and the need to demonstrate innovative capabilities to customers and employees. For CIOs, **digital transformation also reflects**

**a real opportunity to carve out a new leadership role.** Respondents suggest that leadership for digital transformation comes from Senior IT Leaders such as the CIO (40%) or from other C-level leaders, such as the CEO (39%).

## DX IS HERE



**59%**  
Expect to see impact in the next 2 to 5 years



**34%**  
Feel the impact of change now or will, in the next year



**43%**  
Leadership for digital transformation comes from the C-level



**36%**  
Senior IT leadership

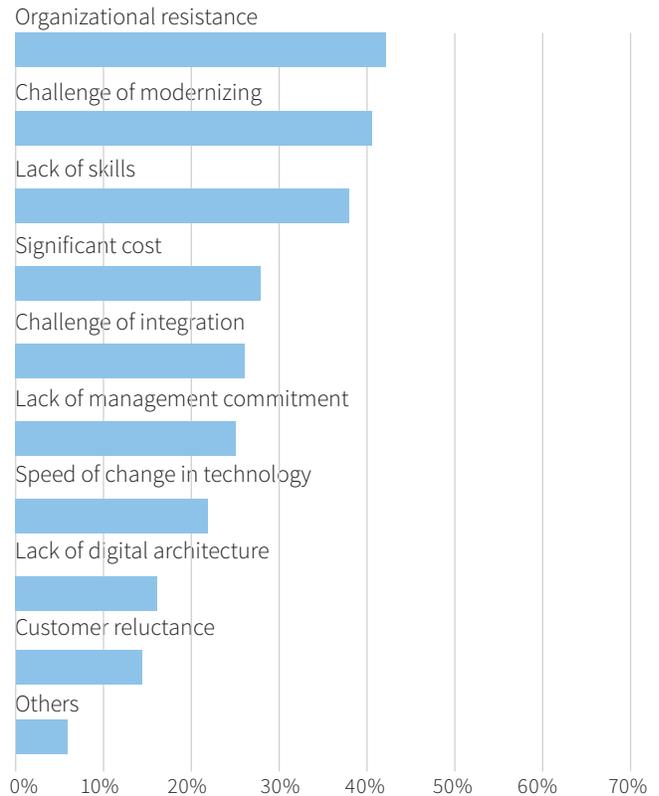
# TECHNOLOGY TRENDS: DIGITAL TRANSFORMATION

Clearly this new role of the CIO comes with a challenge to deal with not just technology, but the human aspects of organizational change. Respondents identified people issues (organizational resistance, lack of skills, lack of management commitment) as the biggest impediment, followed by technology challenges (modernizing or integrating legacy systems).

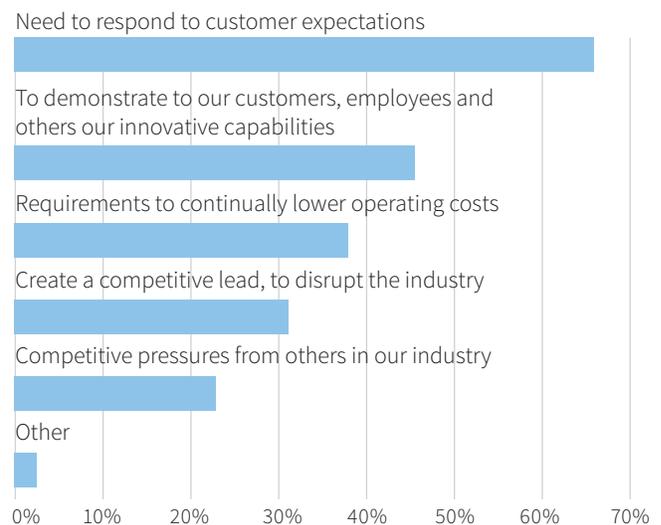
The “reskilling” of IT that has been ongoing for several years will be a challenge in terms of finding the right people with skills in both new and old technologies, and an emphasis on user experience and business results. As an example, **data analytics skills are seen as the most difficult to hire** or to contract, which aligns with hiring plans described above.

Finally, although client focus is the main reason for digital transformation, the expected benefits also include lower costs (18%) and competitive parity (15%) as well as competitive leadership (20%). This suggests that **only if organizations can retain/win customers with exceptional experience and lower operating costs will they be able to beat the competition.**

## BIGGEST IMPEDIMENTS TO SUCCESS



## DRIVERS OF DIGITAL TRANSFORMATION



# QUEBEC: A (NOT SO) SPECIAL CASE

In general, data collected from Quebec respondents aligns consistently with the rest of Canada, but there are few interesting exceptions.

The role and reporting relationship reported by Quebec respondents is different. There are more directors of IT/IS and fewer CIOs compared to the rest of Canada. And Quebec respondents were more frequently reporting to the President/CEO/Owner rather than the CFO.



Technology trends and priorities reveal some interesting differences. **Quebec respondents placed a much higher priority on virtualization and storage technologies** than respondents from the rest of Canada. Mobile device management and business intelligence/big data/analytics were much higher priorities in the rest of Canada when compared to Quebec.

Although IT budget increases in Quebec are similar to the rest of the country, **the hiring plans are more conservative.** For example, 45% of Quebec respondents plan to keep IT headcount stable, while only 33% of respondents from the rest of Canada will do so. While 43% of respondents from outside Quebec plan to hire to increase headcount, only 23% of Quebec respondents said their companies plan to do so. Almost 30% of Quebec respondents reported a hiring freeze in place, while only 18% from the rest of Canada report the same.

**Quebec CIOs appear to be more frugal when it comes to ICT spending.** While nationally the majority of respondents pegged their annual IT spend per employee at \$2000 to \$5000, in Quebec the majority reported spending less than \$2000.

With regards to digital transformation, **the top benefit for Quebec CIOs was viewed as lower operating costs.** In the rest of Canada, the top benefit was the opportunity to gain competitive leadership by disrupting the industry as an early mover.

Finally, regarding partnering with government in order to deliver a product or service, Quebec respondents are more pessimistic than the rest of Canada, with a strong proportion who have “tried to partner but find it restrictive or awkward.”

# GLOBAL NOTES

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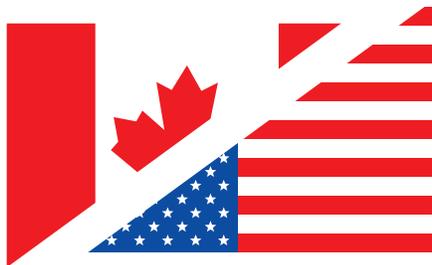
How does the Canadian CIO experience differ from counterparts in the United States or around the globe? Two recent survey provide some insight. A March 2017 report from the Society of Information Managers (SIM) offers a comparator for the United States, and a May 2017 report from the global consultancy KPMG provides benchmark material for a global comparison.



## The US Perspective

The SIM study analyzes 1,213 responses (of which 490 were CIOs). The average organization revenue was \$4.75 billion (USD), with 95% of respondents based in the US.

SIM reports that 71% of respondents have increased IT budgets, (Canada reports 57%), 19% with a budget decrease (Canada reports 15%), and 10% with a budget that remains unchanged (Canada reports 28%).



Although Canadian CIOs are happy with budget increases, the US counterparts are more likely to experience budget growth. The SIM report notes that **IT budgets are now at an all-time high, significantly above the levels in the 2006 to 2011 period.**

Hiring data shows a similar parallel. US CIOs report that 65% plan to increase head count (internal), with 19% planning no change, and only 16% planning to decrease. In Canada, 43% plan to increase, 50% plan to remain stable or have a hiring freeze, and only 7% plan to decrease IT headcount.

Priorities for SIM respondents are similar to Canada, with Business Intelligence/Big Data topping the list of important investments, and Cloud Computing at number four. As well, Security/Cybersecurity is identified as the number three priority, and the most worrisome issue.

# GLOBAL NOTES

Finally, the US CIOs experience a shorter time in their role, with average job tenure at 5.6 years, compared to 8.2 years in Canada. In both countries, the trend is for lengthened tenure in the CIO chair.

## The Global Perspective

KPMG's 2017 global survey captures data from 4,498 CIOs in 86 countries. Developing digital strategies is key for CIOs globally. In the past three years, there has been a 52% growth in companies reporting the implementation of an enterprise-wide digital strategy. There can be no doubt about the importance of digital strategies and transformation within Canada, North America and globally.

The challenge of hiring talent remains a global issue. It is most pronounced in Asia Pacific where 67% of respondents reported skills shortages. That is significantly higher than the 56% reported in North America. **Globally, CIOs identify Big Data Analytics as the most in-demand skills** for hiring, a finding that is consistent with the Canadian and American experience.

Finally, global CIOs have a shorter time in their role, with the majority having only five years or less, compared to Canada or the US. But the influence of the CIO is at its highest level in a decade, perhaps driven by digital strategies, **with global CIOs reporting strategic influence (72%) or participation on the Executive Board (62%).**

These comparisons with the US and global CIO trends suggest the following for Canadian CIOs:

- Digital transformation is a universal priority
- Talent that supports digital transformation, especially Big Data Analytics, is both important and challenging to hire and retain
- The role of the CIO continues to increase in strategic importance at the executive level
- The CIO role is more stable with growing job tenure
- CIO budget increases and hiring growth reflect all of the above statements.

## GLOBAL SKILL SHORTAGE % business reporting skill shortage



**84%**

China and Hong Kong



**67%**

Asia Pacific



**62%**

Global



**56%**

North America

# A LOOK AHEAD

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## A few predictions for 2018

- First, the **importance of digital transformation will continue to grow**, especially in the financial services, retail and communications sectors.
- The CIO will continue to be the **de facto digital transformation technology leader**, with increasing participation in corporate strategy to use digital technology to reach and retain customers. The tenure of CIOs who are successful will increase because they understand both the legacy technologies and the potential and integration issues of the new technologies.
- Third, the **trend to embrace cloud services will continue** to grow, with more organizations using hybrid or public cloud services. Outsourcing will continue to stagnate or decline. **The trend of decreasing Run budgets, and increasing Grow and Transform will continue**, with cloud services contributing to the decreasing Run costs, and competitive digital transformation driving the increase in Grow and Transform budgets.
- Fourth, **hiring will continue to emphasize skills that support digital transformation** such as data analytics and mobile app development. The Canadian economy is strong, with 2017 GDP growth higher than expected as well as strong labour force participation. A rise in Canadian interest rates or economic downturns in the US, Europe or Asia could combine to dampen hiring plans for 2018. As well, a slower Canadian economy may affect IT budgets. Even should a slowdown occur, it is likely that the difficulty in finding the right skills will continue, and companies will struggle to find the talent they need.
- Fifth, IT spending and **allocation of budget to innovation will continue to grow**. It has been growing while the Canadian economy is strong. We expect that IT budget increases of 15% or more will be less likely, with more firms reporting increases of 5% to 14% or less. This will be tempered by the need for digital capabilities in response to competitors.
- Finally, Canadian **CIOs will continue to cautiously monitor developments in new technologies** such as Robotic Process Automation, Artificial Intelligence, Blockchain, and Internet of Things, with a few interesting breakthroughs but, as yet, no overwhelming adoption.

# SUMMARY

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CIOs across Canada (many in our census, at least) have at last gained their rightful place as executives and leaders. From our analysis, the role of the Canadian CIO has not been displaced by the CMO or the Chief Digital Officer; this is due to a combination of hard work and circumstance.

Successful CIOs have worked diligently to reduce operations costs and leverage new technologies to speed delivery times. CIOs have also helped their organizations focus more on customer experience as a driver of digital transformation. At the same time, companies are coming to realize how important technology is, and specifically how important it is to protect their technology assets and data, and are investing in this area accordingly. The CIO, as now both the protector of company tech assets and data, and enabler of digital innovation, appears to be on a kind of winning streak.

It is not merely that CIOs are enjoying a raised profile at their organizations; they have, in fact, joined the “big table” of decision-makers at their companies. CIOs enjoy longer tenure in their roles, have the ear — really, the undivided attention — of those at the very top, and are empowered both on paper and in reality, enjoying fatter IT budgets than ever before. There is no hyperbole in saying that it has never been a better time to be a CIO in Canada. Time will tell if this trend continues.