IT.TRENDS

2024

IT CANADIAN REPORT YOUR GUIDE FOR IT STRATEGIC DECISIONS





Study conducted by

NOTE ON METHODOLOGY

The data presented in this report was collected through a web survey conducted from January 8 - 20, 2024. The survey was conducted by Leger and included small (under 100 employees), medium (100-499 employees), and large (500+ employees) companies in Canada.

Respondents included 297 IT decision-makers, 80 non-IT managers and 76 decision-makers who are neither managers nor working in the area of IT.

It should be noted that due to the non-probabilistic nature of the sample (associated with any web survey), the calculation of the margin of error does not apply. For comparative purposes, a probabilistic sample of 453 respondents (web panel) would have a global margin of error of \pm 4.6% 19 times out of 20. The margin of error would, however, increase for subgroups.

THE IT TRENDS REPORT:

Actionable Data-Driven Insight for IT Decision Makers



DAVID CHAMANDY Chief Executive Officer, NOVIPRO GROUP Dear Readers,

Each year since 2017, NOVIPRO Group has published the IT Trends Report, a flagship industry report dedicated to providing Canadian business leaders with actionable data and insights to help guide their technological decision-making.

Now in its eighth edition, the report provides a glimpse into recent and future trends that will shape the technological landscape in the months ahead. This year's edition is designed to be more userfriendly than ever, with new insights and observations that will allow readers to make data-driven decisions to manage risk and seize new opportunities.

I would like to express my sincere gratitude to all those who have contributed to the execution of this collective project. Our valued partners and contributors include Leger Marketing, IBM, and dozens of leading IT organizations and experts who have contributed their insights. Their on-the-ground knowledge from a variety of sectors has made this year's report more thorough and practical than ever before.

I hope you enjoy this report and obtain actionable insights that will empower tangible solutions and enable secure and sustainable growth for your business.

IBM'S WORD

Dear Readers,

I am delighted to share with you the exciting collaboration between IBM and NOVIPRO Group in the creation of Canada's largest information technology innovation study: The IT Trends. This project not only embodies the essence of innovation, but also reflects the importance of inter-firm collaboration in the dynamic world of information technology. At IBM, we firmly believe that digital transformation is essential to propel companies to new success. That is why we have committed our expertise and resources to support NOVIPRO Group in this important initiative. NOVIPRO Group has created a comprehensive report that provides an in-depth analysis of the current technology ecosystem, emerging trends and current issues.

This IT report is much more than just a compilation of data. It is a strategic resource for companies seeking to make informed technology decisions. By highlighting the sector's challenges, opportunities and best practices, this report provides a valuable guide for leaders who wish to successfully navigate the ever-changing digital landscape.

The added value of this project lies in its ability to offer holistic and insightful perspectives on the current technological landscape. Thanks to the expertise of all the contributors, we have been able to provide valuable information that will help companies anticipate future trends and remain competitive in the global marketplace.

We strongly believe that collaboration between IBM and NOVIPRO Group in the creation of this report demonstrates the importance of strategic alignment and cooperation in today's business world. "By joining forces, we have been able to create an invaluable resource that will benefit the entire business community by fostering innovation, growth and long-term prosperity."

Thank you, and especially good reading of your $8^{\mbox{\tiny th}}$ edition of the IT Trends!

PETER R. MCKAY Director Ecosystem, IBM CANADA



NOTE TO READERS

We at NOVIPRO Group hope that all our readers appreciate the insights of this report and will keep it by their side as they make IT decisions throughout the year.

In this 8th edition of NOVIPROGroup/Leger's IT Trends Report, we have made improvements to better facilitate use of the report as a reference too throughout the year.

In this issue, you will find:

- A new layout and presentation of the survey findings, all based on reoccurring themes to allow readers to find and access the most relevant information even faster.
- Visual dashboards to provide readers with a quick snapshot of key data at the beginning of each chapter based on three areas: perception, current state, and investment.
- Valuable insights from a range of industry specialists on the major trends in IT.

This newly designed report is not only intended to support the ongoing digital transformation of Canadian businesses, but also to enable better flexibility and speed. To this end, we have highlighted risks and opportunities in each of the major subject areas of this report.

It is essential that IT decision-makers understand risks so that they can anticipate potential pitfalls. In the same vein, they must be able to identify and understand opportunities that will enhance their company's productivity and growth in 2024 and beyond.

Additionally, following conversations with a range of industry specialists, we have included a "Big Question" to prompt further thought on each of the themes discussed in the report. By integrating these questions into corporate strategy, decision-makers can better allocate their investments and take the steps necessary to set their organization up for success in the coming year.

We hope that these improvements allow you to fully benefit from the data generated by this in-depth study.

Happy reading



I really appreciate the opportunity to see national IT Trends; it reassures me that the decisions I'm making and the challenges I'm facing are reflected in IT regardless of the sector.

KEVIN COLLINS, Technology & Business Development Manager, RAYMENT AND COLLINS

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About the 20**24** FINDINGS

The 2024 IT Trends Report reveals both new and emerging trends in IT across Canada. The overall picture is one of potential. It is clear that companies are getting by and investing in IT where they must.

Too few companies, however, are thinking ahead and making strategic investments in IT. There is an opportunity for Canadian companies to make the forward-thinking investments that would give them a competitive advantage.



The number of companies that have deployed their modernized applications jumped from 10% in 2023 to 16% in 2024 While the majority of companies (80%) report involving their IT departments in corporate strategy, many (31%) still view their IT department in a negative light, and most respondents (67%) described their IT infrastructure as merely "functional." Budget remains a primary concern, with budgetary constraints holding back investments in IT that could save money and boost operational excellence.

Similarly, cybersecurity remains a major area of concern. More companies are recognizing the importance of investing in security solutions, but this concern is not always translating into the necessary action. While security was among the top three main challenges identified by respondents for the coming year, and was a top priority for modernization, the figures for investment in cybersecurity training, resources, and insurance were surprisingly low. Those companies who had experienced a cyberattack were far more likely to have invested in protective measures. Perhaps companies must experience an attack for themselves before the need for urgent action really sinks in.

In other areas, there is a balance between competitive advantage and premature adoption. Cloud computing has now become commonplace, with many companies adopting hybrid cloud/on premises models. Al is the next frontier. Those who do not adopt will certainly be left behind, but those who adopt too early may make large financial investments without a proper understanding of the most efficient, strategic uses for Al in their company. Importantly, respondents in IT roles were far more likely to indicate that Al will transform their business and sector, suggesting a need for broader education on this fast-emerging technology.

Companies are also investing in their human and digital assets. Training and development is the most prominent human resource challenge in the fast-changing IT landscape. Thankfully, over two-thirds (67%) of respondents are planning to invest in training and skills development. Many companies are also investing in modernizing their technology infrastructure; the number of companies that have deployed their modernized applications jumped from 10% in 2023 to 16% in 2024.

Overall, respondents from larger companies gave answers indicating more understanding and support for IT investments. Larger companies are also more likely to involve the IT department in developing and implementing the overall corporate strategy. When resources are available to hire dedicated IT professionals, bring them to the strategy table, and financially invest in their recommendations, the results are clearly greater satisfaction with IT investments. The challenge rests with smaller businesses who may not have the resources to kick off this ultimately-beneficial cycle.



IMPACT AND **INFLUENCE** OF IT

Several Key Tech Drivers are Bolstering Canadian Businesses, **Today and Tomorrow**

Adopting smart technology is a critical reason why Canadian businesses continue to flourish in a challenging economy, as IT helps automate several processes, allowing organizations to do more with less, as well as streamline workflows, increase productivity, facilitate secure work-from-home and hybrid models, and (where relevant) enhance the customer experience.

From sole entrepreneurs and small start-ups, to medium-sizes businesses and enterprise-grade companies, onboarding the right technology (and people and partners, naturally) can improve operational efficiencies and realized profits across all industries.

Just as cloud platforms and effective collaboration tools have changed the game over the past decade, Chief Security Officers (CSOs) & Chief Information

MARC SALTZMAN

Based in Toronto, Marc is a prolific tech expert with one simple goal: to "break down geek speak into street speak." Marc is a freelance journalist for more than 20 publications, a 16-time author, TV personality, radio and podcast host, and public speaker. Security Officers (CISOs) and other IT decision makers are now doubling down on artificial intelligence (Al), new cybersecurity protocols and practices, and other emerging technologies to help facilitate stability and growth.

EXPLOSION IN AI AIDS

Perhaps the most exciting and potentially impactful is the meteoric rise and democratization of generative AI ("gen AI") – especially as it could help businesses struggling with historic labour shortages.

Al and its subsets (like machine learning) may not be new, but a flood of highly intelligent and scalable generative Al platforms are transforming how businesses operate and interact with customers.

Companies are employing AI for a range of uses, from drafting documents to assessing risk by analyzing vast amounts of data.

WINNING THE CYBER WAR

Just as AI is being used by Canadian companies to operate more efficiently, fraudsters are leveraging gen AI to target victims more effectively. Consider it an ongoing arms race that keeps many CSOs & CISOs up at night.

Thankfully, many businesses are prioritizing cybersecurity.

Powerful new software and hardware safeguards are catching more malicious attacks, backed by additional security stacks to protect cloud and edge apps, more stringent regulatory compliance, and vigilant monitoring (and adapting defenses) against evolving malware, including ransomware threats.

Again, just as new risks arise -- like the adoption of BYOD, a mobile workforce, and more connected IoT devices -- the right IT products and partners can in fact strengthen security, and without sacrificing agility.

OTHER TECH TRENDS

There are other significant 2024-25 IT trends to consider, including sustainable technology (and prioritizing renewable energy sources); web3, or the decentralized web, built on blockchain technologies; mixed reality applications for training and collaborating (with the adoption of spatial computing headsets, like Apple Vision Pro); and while not quite ready for primetime, the incredible potential of quantum computing for complex problem-solving and optimization.

Despite a rocky road coming out of the pandemic, the near future of business in Canada looks bold and bright – and with several IT innovations as the backbone to its success.

2024 MAJOR IT News Highlights

Top 3



CHALLENGES for Canadian companies in the next year:

Budget (costs/expenses)	36%
Upgrading/replacing technology solutions	29%
Security	27%
Cloud integration and outsourcing of IT / managed services	26%
Company growth	23%
Human resources (retention, recruitment, training)	21%
Modernization of applications (e.g., microservices, automation and containerization)	19%
Implementation of advanced data analysis and/or artificial intelligence projects (e.g., optimization, forecasting, machine learning and deep learning, etc.)	18%
Governance and data management	15%
Project management	15%
Telework management	11%
Other	1%
None	3%
l don't know / l prefer not to answer	2%

Impact and Influence of IT

Data Interpretation From data breaches and ransomware attacks, to simply being unable to access work-related documents – when there is a technical issue, IT is the first call.

Yet Canadian companies are continuing to see less value in their IT departments.

Since the 2020 pandemic, the number of companies that perceive their IT team as an 'investment' has continued to decline. This year's study revealed 41% of companies view IT as an investment, down from 44% in 2023.

This decline may be explained by the often-reported disconnect between C-suite expectations and what IT can reasonably achieve with the time and resources available. IT may also make themselves unpopular by introducing necessary, but irritating, processes to address cybersecurity.



Corporate culture is evolving and increasingly bringing IT into the strategic model, but too often IT is still called upon, above all, to resolve problems.

STEPHANE PINCINCE, Director of IT, HUMANIA ASSURANCE INC

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The need for IT to implement new constraints to protect the company can sometimes be misunderstood, but it is essential to recognize that these measures are vital to ensure data security and business continuity.

> FRANCOIS MORIN Senior Technology Partner Specialist, IBM CANADA

Uncharitable **Perceptions**

Whether or not the IT team is viewed positively within an organization is dependent on size, industry, and the managerial position/level of the respondent.

Firms in the Financial Services sector, larger companies, and those who involve the IT department in their company's strategies are more likely to see their IT department as a strategic partner. Larger organizations often have Chief Information Officers (CIO) or Chief Technology Officers (CTO) who sit beside their Chief Financial Officer (CFO), which helps to embed the IT department in overall corporate strategy. This may account for more positive perceptions compared to small and medium-sized businesses in which cost-conscious CFOs often oversee IT.



IT is part of our management committee, which greatly changes the perception of IT and its funding within our organization.When IT is represented, it has a measurable effect.

DANNY CREVIER, Director, IT Service Center, FTQ SOLIDARITY FUND



Companies that truly integrate their IT teams into the development of their business strategies not only gain a distinct competitive advantage, but also develop organizational agility, enabling them to more easily adapt to constant changes.

> MARTIN PELLETIER Chief Strategic Initiatives, NOVIPRO GROUP

Recognizing the **Value in IT**

While this year's report showed eight out of every ten (80%) companies involve their IT team to some extent when defining their company's strategies, this number has been steadily decreasing since 2019. Industry also impacts the level of integration IT has within a company. For example, 94% of companies in the Financial Services sector involved their IT teams in business strategy, compared to the Construction and Real Estate industry at 50%. When IT has a direct correlation on business competitiveness, for example, whether or not someone can access their bank account on their phone, the value of IT is more easily quantified and understood.

Whether or not all employees recognize its value, IT is a critical component of every business regardless of sector. IT supports everything from customer service to online access to corporate documents, and all companies are susceptible to costly IT breaches if their technology infrastructure is weak.



FOOD FOR THOUGHT Involving IT departments in corporate decision-making allows companies to make more informed and strategic decisions, identify new opportunities for growth and innovation, increase competitiveness in the market, and even save money! There is a disconnect between IT experts and the business leaders who make investment decisions. IT experts need to help business leaders to understand the value-add that proactive investment in IT solutions can bring.

> LUVENN ALPHONSO General Manager, BLAIR TECHNOLOGY SOLUTIONS INC PART OF NOVIPRO GROUP

RISKS

- + **Tunnel Vision:** When companies are only perceiving IT services as problem solvers, they will miss out on the strategic opportunities that they can provide, therefore limiting opportunities for innovation and growth.
- + **Underfunding:** Poor understanding of the return on investment from IT leads to insufficient investment in this area. This can result in outdated and vulnerable infrastructure, which will increase the risk of costly outages and security breaches.
- + **Exclusion from Key Decisions:** Failure to integrate IT into the general management decisionmaking processes can lead to ill-informed decisions, resulting in reduced operational efficiency and increased long-term costs.
- Operational Silos: Lack of interaction between IT teams and other departments can lead to misunderstandings and a misallocation of technology resources, affecting overall business performance.

OPPORTUNITIES

- + **Strategic Integration:** Involving IT leaders in corporate strategic planning maximizes technology utilization, which can enhance innovation and competitiveness in the market.
- + **Internal Education:** Educating employees, especially those without technical skills, about the critical role of IT can transform their perception of this department.
- + **Informed Decision-Making:** Enhanced understanding of IT by non-technical executives prepares the company for future challenges and secures a sustainable competitive advantage.
- + **Proactive Cybersecurity:** Integrating cybersecurity from the outset of each project minimizes security risks and reduces unexpected costs, ensuring a smooth and secure implementation.



THE BIG QUESTION

HOW INVOLVED IS YOUR IT TEAM IN STRATEGIC DECISION-MAKING?

- Do most staff members at your company understand the function and value of the IT staff?
- Does the leadership team have a comprehensive understanding the strategic value that IT brings to the organization?
- + Are you making full use of your IT team as a strategic tool, or only a band aid when things go wrong?
- To what extent (as a percentage) are your IT resources integrated into strategic decision-making processes?



ECONOMIC ENVIRONMENT

Canada at a Crossroads: A Socio-Economic Imperative for Innovation and Global Competitiveness

Canada's waning economic output per capita has been raising alarms over its future global competitiveness and Economic Environment prosperity for years. Despite its rich resources, the country's underperformance on the worldwide stage and the widening workforce productivity gap between Canadian and OECD workforces put it at a critical juncture.

IDENTIFYING THE TRIGGERS

Although causes for Canada's predicament include a global pandemic, supply chain disruptions, extreme weather disturbances, and growing security issues, the country's traditional economic model shares most of the blame. That model reflects a risk-averse business culture and heavy reliance on natural resources, conventional production, manufacturing, and distribution methods. Canadian entrepreneurs' and business leaders' propensity to focus on single opportunities and markets rather than adopt a multimarket and entrepreneurial approach intensifies the problem. Other deeply-ingrained issues include limited access to investment capital, a faltering focus on innovation, slow adoption of emerging technologies, and a need for more attention to market globalization demands.

Many Canadian enterprises need help keeping pace with the digital and knowledge-driven economy that defines the 21st century, reflected on a continual slowness to invest in emerging technologies and a severe talent deficit for relevant skills, knowledge, and expertise. Cumbersome government funding access processes and poor tax incentives for technology investments exacerbate the problem.

A GATEWAY TO SOCIO-ECONOMIC SUCCESS

Embracing innovation, digital modernization, and a global approach to business is not only necessary but a critical gateway to socio-economic prosperity. Business expansion-focused government initiatives, well-thought-out incentives, and privatesector investments in advanced technology are essential steps.

Artificial intelligence (Al) technologies are emerging as crucial tools to enhance worker productivity. A recent study by professors from Harvard, Wharton, Warwick and MIT Sloan business faculties suggests that Generative Al can improve the performance of highly skilled employees by up to 40%. This research supports many case studies confirming the overall benefit digital technologies can have on productivity.

ADDRESSING THE SOCIO-ECONOMIC IMPACTS OF STAGNATION

The 2024 Canadian federal budget aims to bolster competitiveness and productivity with incentives for digital transformation and technological innovation, a step in the right direction. An increased capital gains inclusion rate and higher investment exemptions suggest a focus on promoting investment in innovation. Additionally, the proposed immediate expensing for patents and computer equipment can encourage corporations to invest in digital and technological assets. These measures can stimulate economic growth by supporting digital transformation and emerging technology applications. Education and training programs designed to augment Canada's skilled workforce can also help businesses to innovate and remain competitive.

A NEW BREED OF LEADERSHIP

Overall, a leadership mindset shift is essential. Preparing a new generation of leaders with a deep understanding of international markets, foreign market development abilities, international cultural fluency, and a focus on innovation can directly impact on Canada's socio-economic performance.

Others have done it. South Korea and Finland are countries that have successfully moved towards more innovation-driven and globally competitive economies. They embraced comprehensive strategies, including balanced government intervention, education reform, digital transformation, and innovation ecosystems. Their success demonstrates that making economies more innovative and competitive with the right policies and investments is possible.

The journey begins with a commitment to innovation, a willingness to embrace change and a new breed of strategic-thinking leaders. The imperative of the 21st century is speed and agility to adapt: the time for action is now. Canada's future prosperity depends on its ability to respond to these challenges with decisiveness and vision.

VICTOR J. GARCIA President and CEO, Faculty Member ABC Live Corporation & Schulich School of Business - York University

Mr. Garcia is a faculty member at the Schulich School of Business, York University, and the President and CEO of ABC Live Corporation, a global consulting organization. He specializes in applying emerging technologies, innovative business models, corporate transformation, and entrepreneurial science to improve business performance. He provides advisory services to international organizations, business leaders, and student bodies.

IN THE NEXT TWO YEARS DO YOU THINK YOU WILL BE:



48% Owner of the equipment

52% User of cloud computing



63% Dependent on an internal team 37%

Dependent on an external team

80%

Of Canadian companies intend to make at least one significant investment in technology in the next two years.

TOP FOUR INVESTMENTS

22% Infrastructure solutions



25% Artificial intelligence

28% Cloud computing solutions

29% Security solutions

TOP OBJECTIVES OF TECHNOLOGICAL INVESTMENT

Security & risk mitigation	50%
Operationnal optimization	44%
Innovation & growth initiatives	35%
Customer-centric enhancements	34%

THE OBJECTIVES OF INVESTMENTS IN AUTOMATION

Be more productive	56%
Reduce costs	48%
Reduce human error	36%
Offset the labour shortage	25%

Larger companies with at least 100 employees, those situated in Ontario, and those who are confident in their IT team are more likely to have identified at least one objective of investments in automation.

HIGHER PROPORTIONS AMONG THOSE WHO DON'T INTEND ON MAKING INVESTMENTS IN AUTOMATION

Respondents in the education, social, and personal services sectors, those in general management within their companies, and those who are not confident in their IT team were more likely to indicate that they do not intend to make investments in automation in the next two years.

Economic **Environment**

Data Interpretation 2024 is a more digital-first world than ever before, with consumers and clients expecting a seamless digital experience that protects their personal data. Thankfully, for the first time in four years, planned investment in technology is increasing.

Some of this increased investment can be attributed to business competitiveness, as more companies look to technology to keep an eye on the future and stay ahead of the curve. It can also reflect the rising and ever-present risk of data breaches and cyberattacks. As the threat of these attacks continues to rise, companies are beginning to realize the long-term financial risks associated of failing to invest in strong technology infrastructure to safeguard themselves and their clients/customers.

Unfortunately, small and medium sized companies are more likely than their larger counterparts to experience a data breach, while also having fewer resources to deal with the resulting challenges.



We are looking to technology to keep an eye on the future and stay competitive in our industry.

KEVIN COLLINS, Technology & Business Development Manager, RAYMENT AND COLLINS

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More money is being injected into security because there have been more open discussions about data breaches. Every day we see at least one company experience a data breach.

> FRANCOIS MORIN Senior Technology Partner Specialist, IBM CANADA

Automation and **Productivity**

Cloud computing and artificial intelligence closely followed security solutions as the most common areas for planned technology investments.

	2024	2023	2021	2020	2019	2018	2017
Security solutions (e.g., governance, software, training, audits, etc.)	29%	17%	25%	25%	42%	40%	N/A
Cloud computing solutions	28%	14%	34%	38%	N/A	N/A	N/A
Artificial intelligence (e.g. machine learning, deep learning, etc.)	25%	13%	18%	N/A	N/A	N/A	N/A
Business solutions (e.g. ERP, CRM, etc.)	23%	16%	17%	25%	37%	36%	43%
Infrastructure solutions (e.g. hardware and software)	22%	19%	21%	28%	40%	43%	52%
Professional services (e.g., consultation, implementation, etc.)	19%	14%	15%	21%	34%	24%	39%
Advanced data analytics (e.g. machine learning, deep learning, etc.)	17%	13%	18%	29%	36%	34%	23%
Application modernization solutions (e.g. automation, containerization, orchestration, etc.)	17%	12%	19%	N/A	N/A	N/A	N/A
Edge computing (e.g. remote monitoring, smart grid, cloud gaming, traffic management, etc.)	15%	9%	N/A	N/A	N/A	N/A	N/A
Internet of Things (IoT)	14%	7%	14%	20%	N/A	N/A	N/A
5G technology	14%	7%	12%	N/A	N/A	N/A	N/A
Online commerce	14%	6%	11%	18%	N/A	N/A	N/A
No, I am not planning to make any significant investments in the next two years	13%	14%	12%	8%	2%	6%	7%
Clean technologies (which help to reduce environmental impacts)	11%	7%	N/A	N/A	N/A	N/A	N/A
Blockchain technology	10%	4%	8%	11%	23%	22%	N/A
Extended reality (e.g. metaverse, augmented reality, virtual reality, etc.)	7%	3%	N/A	N/A	N/A	N/A	N/A
Face/voice recognition solutions	6%	5%	5%	10%	N/A	N/A	N/A

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Customers want to be able to do more with less – and many are cutting their budgets. It really helps if we can offer automated solutions that free up IT and Security managers' time to focus on other parts of the business.

> DARRIN WINEBERG Channel Systems Engineer, NUTANIX

Of the firms who planned to invest in automation, **"increased** productivity" was the main driver.

Automation, however, can range from generative AI tools (such as ChatGPT) to streamline tasks, to more integrated solutions that can help manage data and processes more efficiently. It's clear that companies are curious about the possibilities of artificial intelligence and how automation can improve processes to help drive productivity. Automation can also future-proof an organization against institutional knowledge loss in the fact of an aging workforce.

	2024	2023
Be more productive	56%	51%
Reduce costs	48%	41%
Reduce human error	36%	38%
Offset the labour shortage	25%	25%
Other	1%	0%
I don't intend to make investments in automation in the next two years	15%	16%
l don't know	3%	5%

REAL-WORLD IMPACT

IT investment decisions can have a significant impact on companies' competitiveness through their ability to innovate, meet customer needs, and adapt to economic and technological changes. No matter how automated the solution is, human behaviour is what is behind and driving it. Consequently, there will always be challenges and limitations when it comes to the full utilization of the automated solution.

> WENDY FRANKLIN Regional Vice President, INFOR

RISKS

- + **Technological Lag:** By not prioritizing automation, companies risk losing a competitive advantage over competitors who do automate their processes to enhance efficiency and reduce costs.
- Yulnerability to Cyber Attacks: Insufficient investment in cybersecurity technologies exposes the company to increased risks of cyberattacks and data breaches, leading to significant financial losses and reputational damage.
- + Inadequate Strategic Decisions: Lack of a deep understanding of IT by senior management may result in inappropriate technology choices, which can compromise operational efficiency and the ability to innovate.

OPPORTUNITIES

- + Increased Technology Investments: By investing in advanced technologies, companies not only shield themselves against external threats like cyberattacks but also position themselves as innovative leaders in their industry, capable of swiftly adapting to changes.
- + **Benefits of IT Guidance:** Companies that rely on and trust their IT department for guidance on the latest technological solutions enjoy increased productivity and operational efficiency.
- + Advantages of Automation: Investing in automation streamlines processes and minimizes human errors, resulting in a more efficient workforce and reduced operational costs.



THE BIG QUESTION

WHAT IS YOUR IDEAL RATIO BETWEEN RETAINING EXISTING STRENGTHS AND DEVELOPING NEW GROWTH OPPORTUNITIES?

- Is your company leveraging technology to gain or maintain its competitive advantage?
- + Organization's unique situation and industry landscape, how strategically does your company allocate its technology investments?
- When making new investments, does your company prioritize retaining existing strengths or developing new growth opportunities? What is your ideal ratio between these two goals?



TECH Solutions

Balancing the Gains and Threats of Artificial Intelligence **for a Competitive Outlook**

In 2024, Artificial Intelligence (AI) continues to reshape the IT industry, providing significant growth opportunities as well as challenges. Companies aiming to maintain their competitive edge must balance opportunity and risk to make the most of this new technology.

The Canadian federal government recently announced a \$2.4 billion investment in Al, demonstrating its commitment to developing this technology, while ensuring that companies are protected from ethical and legal issues.

OPPORTUNITIES

Artificial intelligence offers considerable opportunities across various industries, from improved operational efficiency and process automation to informed decision-making based on solid data. For instance, in healthcare, artificial intelligence enhances medical diagnoses by analyzing medical imagery with the same or even greater accuracy than medical professionals.

Recognizing these benefits, the federal government plans to allocate \$200 millions in the 2024 budget specifically to stimulate the integration of AI in key areas such as agriculture, clean technologies, the healthcare sector, and manufacturing.

RISKS

While AI brings many opportunities, there are increasing concerns about cybersecurity, ethics, and legal implications. Returning to the health sector as an example, how does one identify responsibility in the case of a faulty diagnosis based in an AI tool?

The rapid integration of AI also raises questions about personal data protection and automated decision-making. If poorly integrated, an AI-supported analytical model carries significant risk.

As a response to growing ethical challenges, the Canadian government has announced the creation of an institute dedicated to Al security, underlining its commitment to managing risks while harnessing the benefits of this technology.

BALANCING OPPORTUNITY & RISK

The impact of artificial intelligence differs considerably from one sector to another. While some can reap major benefits from early adoption, others may face specific challenges. For example, manufacturing has been transformed by automation and process optimization, while the service industry faces complex issues related to the integration of this technology and the development of in-house skills to match artificial intelligence.

Businesses reluctant to adopt artificial intelligence risk falling behind and failing to compete effectively in an increasingly digitalized economy. According to Stanford University's Artificial Intelligence Index Report 2023, Canada is among the world leaders in artificial intelligence. Canadian companies must adopt a balanced approach in order to navigate risks while maintaining this competitive position.

COLLABORATION

Decision-makers must adopt a strategic, responsible, and thoughtful approach when integrating artificial intelligence.

Close collaboration between technology experts, business decision-makers, and stakeholders is key to a successful and lasting integration of artificial intelligence. Together, these parties can consider artificial intelligence as a whole and ensure that its advantages are evenly distributed, while preventing potential abuses.

To support the ethical integration of artificial intelligence, the Canadian government has also budgeted \$5.1 millions to strengthen the enforcement of laws governing this technology, underlining the importance of strategic collaboration between technology experts and policymakers.

Al adoption should not be driven by the trends of the moment, but by a thorough understanding of effective, ethical use of Al, aimed at optimizing benefits while limiting risks.

is article was written with the valuable collaboration and feedback of: **BRUNO GUGLIELMINETTI** Consultant / Podcast producer:

As a podcast and radio show host, Bruno is also a digital strategy consultant. In addition, he gives lectures, provides training, and analyzes news in communications and digital media. With over 83,000 daily followers on Twitter, and through his weekly podcast MonCarnet.com, he presents the essential aspects of digital news. To read Bruno's full article, visit our website!

DENIS VANIER

Regional Sales Director, Eastern Canada, NUTANIX

Denis Vanier is a seasoned executive with over two decades of experience in executive sales leadership and strategic market development in the information technology and services industry. With notable roles as Regional Sales Director at Nutanix and Vice President Sales at Hewlett Packard Enterprise, he has a proven track record of driving performance-driven team management and fostering strategic market growth.

AI & ADVANCED DATA ANALYTICS

PERCEPTION TOP FIVE INVESTMENTS

Increased productivity and enhanced cybersecurity are the top two primary purposes behind companies' integration, or planned integration, of artificial intelligence (AI) and advanced data analysis solutions.

tomer experience	anual tasks	bersecurity	oductivity
12% Improved cus	13% Automate ma	13% Enhanced cyt	21% Increased pro

The majority of respondents believe that advanced data analysis has already transformed their business/industry, or will do so within the next two years

11% Reduce operating costs

Your Business		Your industry		
58%		Data analysis		61%

Companies who believe that AI will transform their business/industry

	Your Business		Your industry
63%		IT decision makers	60%
46%		Non-IT decision makers	43%



CURRENT STATE TOP FOUR

Most commonly used data analysis tools

Spreadsheet analysis tools	52%
Business intelligence, data visualzation and dashboard tools	46%
Open-source development	22%
Proprietary environment	18%

Reason why companies use/plan to use external data flows

To find business opportunities	29%
To gain a better understanding of their clientele	27%
To better identify market needs	25%
To quantify satisfaction with the product or services they offer	23%

AI & ADVANCED DATA ANALYTICS



CURRENT STATE TOP THREE

USES OF DATA TO MAKE BUSINESS DECISIONS





INVESTMENT

тор 5

Main types of advanced data analysis that companies are considering implementing to serve their business objectives

1% Don't intended to invest

33% Machine learning

33% Basic statistical



38% Deep learning

54% Advanced statistical

54% Data visualization

TOP REASONS

Preventing companies from **investing** in advanced data analysis and/or **artificial intelligence** (AI) for the next 2 years



CLOUD ANALYTICS



PERCEPTION TOP FOUR PRIMARY SOURCES

of return on investment companies anticipate from their cloud solutions

37% 36% (33%) (33%)

Reduction of costs related to hardware infrastructure

Improuvement of operational efficiency and business processes

Increase in the company's flexibility and agility

Enhancement of data security and risk reduction



INVESTMENTS TOP FOUR

cloud computing investment

36% Archiving



39% Website



58% Cybersecurity service

62% Data backup



CURRENT STATE TOP FOUR

Uses of cloud computing solutions

Data backup	37%
Email and collaboration	33%
Website	30%
Cybersecurity service	26%

Reason companies use cloud

Cost saving and optimization	37%
Modernizing IT infrastructure	34%
Scalability and flexibility	32%
Efficiency and automation	31%

Types of open-source solutions

Software development and DevOps tools.	30%
Cloud computing platform & Databases	29%
Containers	19%
Virtualization platforms	18%

Tech Solutions

Data Interpretation



It has been said that data is the new oil. It underpins and drives business outcomes, competitiveness, and profitability – and it is everywhere. Employee data, client data, customer data, product data, sales data, and more – how organizations analyze, organize, store, and leverage their data is crucial to business performance and competitiveness. This year's study revealed how Canadian companies are using artificial intelligence, advanced data analytics, and cloud computing to organize, protect, and utilize data.

I see AI helping us to empower people within the company to be more self-sufficient and rely less on IT support.

JEFFREY HENDREY, ERP Director, ABC TECHNOLOGIES

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Artificial Intelligence

Over half of the respondents stated that they believe Artificial Intelligence (AI) has already transformed their industry or will in the next 1-2 years.

However IT decision-makers were far more likely to believe in the transformative power of Al.

There is no doubt that AI will transform every sector. It is clearly important that non-technical staff are educated on the latest technology developments and how they may impact their business/industry.





PASCAL DAVID, Director Technology Solutions, NOVIPRO PART OF NOVIPRO GROUP

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Artificial Intelligence

Are there risks to Al solutions?

Al tools are constantly emerging, each with different security measures, data protection agreements, and levels of complexity. The parent companies of popular, free-to-use tools like ChatGPT, for example, can share and utilize data entered into their applications. An employee inputting confidential and/or sensitive corporate information into such applications poses a serious security risk. This is why it is increasingly imperative that companies differentiate between Al technology with strong data governance as opposed to technology lacking governance. Companies must also proactively create guidelines around Al use and communicate those guidelines to employees.

Clients have hit the breaks because companies haven't yet developed their Al policies.

KEVIN COLLINS, Technology & Business Development Manager, RAYMENT AND COLLINS

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Artificial Intelligence

Where are the opportunities?

Companies are looking at AI to increase productivity, automate manual tasks, and enhance cybersecurity. Very large organizations have led the charge and built applications to automate decision-making processes using AI – something that has been successful across all industries.

WHAT YOU NEED TO GET STARTED WITH AI

Start by identifying concrete and specific use cases in which artificial intelligence can add real value to your business, then invest in training your teams and strategic partnerships to ensure a successful implementation.

Advanced Data **Analytics**

The most critical variable in utilizing advanced data analytics is the data itself. Reliable data must be collected and properly inputted into the model in order to achieve results. Without this, advanced data analytics will not be a functional and worthwhile tool for a company.

The study also found a difference between IT and non-IT decisionmakers when it comes to what constitutes "advanced data analysis". For example, 62% of non-IT decision-makers cited Microsoft Excel and Google Sheets as their top advanced data analysis tools versus their counterparts in IT who were more likely to cite business intelligence, data visualization, and dashboard tools (e.g. SAS Analytics, IBM Congnos, or Microsoft Power BI).

A majority of companies (52%) continue to rely on spreadsheets, despite the significant risk of human error posed by such manual tools. These companies would do well to implement or increase their use of truly advanced and automated data analytics tools.

The essential question to ask is: what are we going to do with this data analysis?

ISABELLE BÉGUIN, Director of Projects and Operations, INTGRAL

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To realize the full benefit of Al or advanced data analytics and achieve valuable outcomes, it's critical to have access to and leverage compliant, complete, and accurate data, which is necessary to produce truly valuable outcomes.

MARK ROWAN Chief Executive Officer, DATA SENTINEL

Advanced Data **Analytics**

Barriers to Al and Advanced Data Analitics

Not everyone is investing in Al and Advanced Data Analytics, with cost and "lack of need" cited as the primary barriers.

A comprehensive AI solution can cost approximately \$5 millions, making it necessary for companies to understand their own needs - and how AI can meet those needs - before investing.

For now, where AI might enable a large company to significantly reduce staff or improve processes, smaller firms are unlikely to see the same return on investment on an expensive AI solution. This may explain why 30% of small companies (under 100 employees) do not plan to integrate AI or advanced data analytics for now, and were more likely to cite "lack of need" as a barrier.



- Develop clearly-defined business goals.
- Identify the data needed to achieve your goals.
- + Invest in the right analytics tool(s).
- + Train your teams on how to fully leverage the potential of the data.
- Establish protocols to ensure that the insights generated by the analytic tool effectively fuel your strategic decision-making.

The myth that cloud computing automatically leads to cost savings is often contradicted by reality. The true value of the cloud lies in reducing the operational burden and complexity of managing onpremises infrastructure. In addition to offering increased flexibility, better scalability, and a reduction in human error, it significantly improves data security.

MARTIN CHAGNON

Director of Sales - Solution Specialist, NOVIPRO PART OF NOVIPRO GROUP

Cloud Computing **Myths v Facts**



From Amazon Web Services (AWS) to Microsoft 365 – the vast majority (84%) of companies utilize, or plan to utilize, a cloud computing solution. So, what exactly are the benefits of moving to the cloud?

This year's study found that most respondents anticipated a reduction in costs from their cloud solution, however this response may not align with reality. The cloud is not inherently cheaper or more expensive than on-premises solutions. For example, if a company must retain seven years' worth of information, would it be more expensive to have that data backed up in the cloud or put on paper and stored in a warehouse? Companies must decide what is best for their needs.

Al comes into conversations on the cloud – if you have a tool that classifies your data automatically, it is easier to make a decision on where that data should go.

FRANCOIS MORIN, Senior Technology Partner Specialist, IBM CANADA



The benefits of migrating to the cloud, including hybrid cloud, are many and varied, including increased flexibility, better scalability, potential savings on infrastructure costs, and ease of managing IT resources.

DARRIN WINEBERG Channel Systems Engineer, NUTANIX

Cloud Computing

Respondents also identified productivity, reduction in human error, and offsetting the labour shortage as reasons to invest in cloud. Security is an additional benefit, especially for smaller businesses, as cloud solvn managed by large companies that have greater resources to prevent and address cyber threats.

From less on-premises hardware and fewer in-house technical staff, to the ability to scale up and down as needed, there are clear benefits in moving to a fully-cloud or hybrid solution. However, while there are significant benefits in cloud solutions, cost-savings may not be one of them.



RISKS

- + **Misdirected Technological Investments:** Risk of financial waste and resource allocation on projects that fail to deliver expected benefits, potentially leading to costly failures.
- + Lack of Knowledge Among Non-Technical Staff: Non-technical staff may not grasp the risks associated with Al tools, including the risk of accidental sharing of sensitive data.
- + **Dependency on Data Quality:** Without accurate and robust data, the company risks making decisions based on flawed analyses, leading to ineffective strategies and loss of competitiveness.
- + Inadequate Understanding of Cloud Computing: By incorrectly assuming cost savings through cloud computing, the company risks encountering unforeseen costs and performance issues that could impact its operations.

OPPORTUNITIES

- + **Strategic Technology Investments:** These investments, in collaboration with IT experts, not only increase productivity but also reduce operational costs, providing significant return on investment and a sustainable competitive advantage.
- + **Training and Education on AI for Staff:** Well-informed and personnel skilled in AI will be better equipped to increase productivity and innovation while safeguarding sensitive company data against potential security breaches.
- + Advanced Data Analysis with Good Data: Using high-quality data for advanced data analysis optimizes operational efficiency, reduces errors, and enhances strategic decision-making, resulting in better resource allocation and increased profits.
- + Adoption of Cloud Computing: Transitioning to cloud computing can alleviate constraints related to hardware maintenance, security, and expansion planning. This frees up resources that can be reallocated to more innovative and profitable initiatives.



THE BIG QUESTION

ON A SCALE OF 1 TO 10, HOW PREPARED IS YOUR ORGANIZATION FOR GREATER INTEGRATION OF CLOUD COMPUTING , AI, AND ADVANCED DATA ANALYTICS?

- + What are you waiting for?
- The time is now to invest in tech solutions. Has your business strategically planned when and how to invest in Al, advanced data analytics, and the cloud?
- + Are you actively preparing the infrastructure to facilitate the success of these investments?
- On a scale of 1 to 10, how prepared is your organization for this transition?



CYBER SECURITY

The Convergence of Law and Cybersecurity: **A Framework** for Businesses

The convergence between law and engineering is transforming companies' approach to cybersecurity. Legislation on data governance, privacy protection, and critical infrastructure security, such as Bills C-26 and C-27, are redefining the issues. In the United States and Mexico, similar laws are progressing, signaling North America's legislative catch-up with Europe. What are the consequences for businesses? Three salient points require attention.

REDUCTION AND CONTROL OF THE ATTACK SURFACE

Asset inventory, long neglected in cybersecurity, is becoming crucial. Companies, driven by new legislation, are now seeking to keep these inventories up to date to better understand their attack surface. This approach is reinforced by the need for rigorous risk classification.

The strategy to reduce the attack surface is intensifying, notably through more rigorous supplier management programs, directly influencing the companies' commercial potential. In the United States, requiring a Software Bill of Materials (SBOM) for software, detailing each component, is becoming a standard for working with the government. This approach, promoting transparency and security, is emerging as a dominant trend, highlighting the importance of proactive management of information assets.

GOVERNANCE AND COMPLIANCE

The proliferation of legislation governing cybersecurity highlights the growing importance of regulatory compliance. We are seeing Boards of Directors becoming more aware of their responsibilities in the event of non-compliance with the law. This often results in concerns among cybersecurity managers who wish to avoid incurring personal responsibilities, as certain legal precedents demonstrate in the United States. In order to retain talent, companies must put in place collective decision-making systems that hold stakeholders accountable. Conversely, leaders need transparency in management and decisions, which requires the adoption of assessment technologies and automated digitalizations.

THE ROLE OF AUTOMATION IN CYBERSECURITY

For effective risk management, governance, and compliance, companies must refine their processes and integrate automation and artificial intelligence. These tools refine monitoring and responsiveness to threats, essential given the constraints of reporting incidents within 24 hours. Automation also frees up resources for critical tasks that cannot be automated, such as developing security policies.

Automation can also play a role during product development, by helping to align resources with security. Faced with new regulations affecting product configurations, companies must adapt their methods to meet the required quality and compliance standards. The fusion of law, engineering and ethics in cybersecurity requires organizations to adapt their strategies. Data and systems security has become a technical and legal issue that requires attention from operations staff and Boards of Directors. Canadian companies must move beyond legal compliance and integrate cybersecurity into their operational strategy. Companies with robust cybersecurity strategies and measures in place can differentiate themselves from the competition and pave the way to a more secure and profitable future.

JEAN LOUP P. G. LE ROUX

Cyber Security Leader & Law Firm Founder

Jean Loup Le Roux is a highly regarded global expert in cybersecurity and privacy. With over 15 years of experience in the field and multiple industry certifications including CISSP, CCSP, and ISO 27001 Lead Auditor, he provides strategic advice and consulting expertise to top-tier companies worldwide. As an entrepreneur and CEO, Jean Loup leverages his experience to drive his own companies while currently focusing on international consulting activities, particularly in the areas of cloud security and privacy protection.

VANESSA HENRI

Co-founder at Henri & Wolf Cybersecurity and Data Governance Lawyer Among the top 20 women in cybersecurity in Canada and ranked top 3 globally.

Vanessa is a co-founder of Henri & Wolf, a boutique multidisciplinary law firm dedicated to data governance and cybersecurity. She practices cybersecurity commercial law in the fields of emerging technologies and critical infrastructure, and teaches the subject at St-Thomas University in Miami. Recognized as one of the most influential women in cybersecurity by IT World Canada, she has also received the Woman in Leadership award from Canadian Women in Cybersecurity.



CYBERSECURITY



PERCEPTION



HIGHER PROPORTION AMONG

- + Companies with 500 employees or more (98%)
- Companies who have implemented a business continuity plan (98%)
- ÷ Companies in which the IT department is involved in company's strategies (95%)

Respondents had different ideas of the elements contained in a business continuity plan; responses diverged, particularly between IT and non-IT decision makers.



On a scale of 1 to 10, how prepared is your 61% organization for greater integration of cloud computing , Al, and advanced data analytics?

incluent Recovery Plan	
31%	Non IT
51%	IT
Risk and Impact Analysis	
40%	
50%	
IT Disaster Recovery Plan	
30%	

65%

COMMON GOALS OF DATA GOVERNANCE

68%

have or are considering implementing a data governance process

Strengthening data security and access control	25%
Ensuring legal compliance, traceability taxations, etc.	14%
Eliminating data silos and centralizing data	11%
Standardizing data sources	10%

HIGHER PROPORTION AMONG

- Companies in financial services (84%) ÷
- Companies in technology, media and ÷ telecommunications services (78%)
- + Companies with cutting edge technological infrastructure (84%)

CYBERSECURITY



CURRENT STATE



CYBERSECURITY TRANING OFFERED IN THE PAST YEAR

- 43% Yes, and I plan to offer training next year
- 25% Yes, but I don't know if I'll repeat the experience
- 11% No, but I intent to offer training next year
- 16% No, and I don't intent to offer training next year
- 5% Don't know

SOURCES OF COMPUTER SECURITY THREATS



87% OF CANADIAN COMPANIES HAVE IMPLEMENTED AT LEAST ONE MEASURE TO PROTECT THEMSELVES AGAINST DATA BREACHES

Malware protection	44%
Backup management	37%
Advanced e-mail protection	35%
Data encryption	34%

57%

of respondents have implemented a business continuity plan

53%

of respondents have tested that plan within the last year

- 21% of companies indicated that they have been victim of a computer threat.
- + 29% of respondents have cyber insurance.
- 50% of plans cover both clients' and employees' confidential information.

DASHBOARD

CYBERSECURITY



INVESTMENT

of companies plan to invest in cybersecurity

74%

32% Security awareness

25% Cyber resilience

25% Vulnerabilities detection

24% Data loss prevention

21% Identity management

24%

OF SUCCESSFUL ATTACKS OR BREACHES WERE ESTIMATED TO HAVE COSTED MORE THAN

\$500,000

30%

of respondents are unaware of Québec's Law 25, which acts to modernize legislative provisions in regards to the protection of personal information and data breach notifications for customers in Québec.



Express concerns about aspects such as data security, information management, and consent in data collection.

28%

of respondents are unaware of Canada's Bill C-27, which contains proposed legislation related to consumer privacy, data protection, and Al.



Have concerns about some aspect of Bill C-27 such as data security, individual rights and legal ramifications.

Cyber**security** Data Interpretation

It's difficult to live in today's world and not be aware of the threat of cyberattack. This year's results reflect that awareness, with news reports of data breaches prompting 61% of respondents to review their data security practices.

21% of respondents reported that their company had been the victim of a cyber threat. While still a significant number, it is possible that 21% is an under-representation as cyberattacks pose such a reputational risk that even anonymous survey respondents are likely to under-report their occurrence. Furthermore, companies may not be aware of breaches, which can and have gone undetected for extended periods of time.

FALSE CONFIDENCE?

91% of respondents indicated confidence in their IT teams when it comes to security, despite generally low opinions of IT departments. While IT teams are no doubt working hard to address security threats with the resources available, respondents should perhaps not be so confident in their preparedness given overall lack of investment in cybersecurity training, solutions, and insurance.

It is important for companies to also be aware of cyber threats from within their organization, as 40% of cyberattacks were reported to come from malicious internal actors. Organizations need to monitor what has become a growing source of attacks, as disgruntled employees – or those looking to earn fast money from the sale of confidential data – can put your company at risk.

While most companies had implemented at least some measures to protect against a data breach, 13% either had not or were not aware of their company's measures. This indicates at best a lack of knowledge about existing measures, and at worst a lack of action on this pressing issue.



ACROSS MULTIPLE DATA POINTS, THE FOLLOWING COMPANIES WERE LIKELY TO HAVE IMPLEMENTED A HIGHER LEVEL OF CYBERSECURITY TOOLS, TRAINING, AND INSURANCE: Larger companies (500+ employees). Companies that had been a victim of a computer threat in the past. Companies in which the IT department is involved in corporate strategy. Financial services companies. This suggests that understanding of existing threats plays an important role in cybersecurity investment, alongside budget and resources.

We have seen clients delay cybersecurity measures by a few months, and in that time they suffered from a cyberattack. Delays increase risk exposure, and the implications can be catastrophic.

BLAKE REILLY

Senior Account Executive, BLAIR TECHNOLOGY SOLUTIONS PART OF NOVIPRO GROUP

Cyber Security Training

The number of respondents who had carried out cybersecurity training rose significantly over 2023 (from 59% to 68%), but has still not returned to pre-pandemic levels (74% in 2019).

With respondents indicating budget as the primary concern facing their business this year, lack of investment in cybersecurity measures is very likely fueled by budgetary constraints.



ASSESS YOUR SECURITY ASSETS Take a proactive approach to cybersecurity by investing in employee awareness and training, as well as tools to validate your security controls.

The Cost of **Protection**

Despite widespread awareness of security threats:



of respondents indicated that their company does not have cyber insurance



one soon

This surprising gap in coverage for such an imminent threat can perhaps once again be explained by budgetary constraints. Not only is cyber insurance another line item on the budget, but insurance companies often require specific measures to qualify (such as Multi-Factor Authentication or an Incident Response Plan).

With these increasing requirements, it is perhaps unsurprising that companies with more than 100 employees are far more likely to have obtained cyber insurance. Smaller companies may wish to purchase insurance but are unable to take on the double burden of insurance costs and required investments in security measures.

Increasing insurance requirements may also explain why fewer companies have cyber insurance in 2024 vs. 2023, despite rising cybersecurity concerns.

Insurance policies are driving investments in security measures; every year insurers add new measures that companies must meet in order to qualify for cybersecurity insurance.

DARRYN NAFZIGER, Vice President of IT, THE ERB GROUP OF COMPANIES



Not only business are not aware of the bill, for those who are, a lot of them are late in the implementation of it. They often do not realize all the implication, legal, policies, training, data classification, risk assessment just to name a few. This is business project that implicates most business units in an enterprise.

> **ROGER OUELLET** Director of Security Practice, NOVIPRO PART OF NOVIPRO GROUP

The Laws on **Data Privacy:**

An Overview of Canadian and Québec Government Initiatives Across the globe, governments are forcing the hand of private business by implementing legislation to address data privacy concerns. In Canada, Quebec has already passed Law 25, which addresses data protection and data breach notification. At the federal level, the Government of Canada has introduced Bill C-27. While not yet law, the legislation proposes a suite of changes impacting consumer privacy, data protection, and Al.

Despite their wide-ranging, nearly a third of respondents were unaware of Law 25 and Bill C-27 this lack of awareness is particularly concerning with regards to Law 25, which is already in effect and governs all companies with customers in Quebec (regardless of the company's base of operations). Even within Quebec, 17% of respondents were not familiar with Law 25, a number that rose to an average of 28% in the rest of the country.

More awareness is sorely needed to ensure that companies adhere to Law 25 and are ready for Bill C-27 should it become law. For those who are aware, both pieces of legislation are driving concerns about data security.



RISKS

- + **Constant Rise in Cyber Threats:** Companies that fail to bolster their security measures expose themselves to significant financial losses and reputational damage in the event of an attack.
- + **Deferred Security Investments:** Neglecting security updates can leave companies vulnerable to data breaches, resulting in high recovery costs and loss of customer trust.
- Overconfidence in Current Measures: Incorrectly believing that existing security devices are sufficient can render companies susceptible to sophisticated attacks.
- + Increasing Cost of Cyber Insurance: Premiums are rising, yet the financial consequences of an attack on uninsured businesses can be devastating.
- + Ignorance of Legal Obligations: Being unaware of or failing to comply with recent laws such as Law 25 or Bill C-27 can lead to severe penalties and fines.

OPPORTUNITIES

- + **Growing Awareness of Cyber Threats:** Higher awareness leads to companies investing more in advanced security tools and training, thereby reducing the risk of cyberattacks.
- Legislative Pressure for Enhanced Data Protection: Enforcement of Law 25 and Bill C-27 compels companies to adopt stricter data privacy and security practices, strengthening their compliance and competitiveness.
- Post-Attack Experience Sharing: Companies that have experienced cyberattacks and share their lessons contribute to better sectoral preparedness, there by increasing collective resilience against future threats.

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THE BIG QUESTION

HAVE YOU WEIGHED THE COST OF CYBER ATTACKS?

- Are you prepared for cyberattacks? It's not a question of if, it's a question of when; most companies will be subject to multiple cyberattacks in the coming months and years.
- + Have you evaluated the investments your company must make to prepare for an inevitable attack?
- + Have you weighed the cost of these investments vs. the potential loss of revenues and reputation resulting from an attack?



HUMAN RESOURCES

Navigating Diversity and Skill-Based IT Hiring Trends: Insights for HR Leaders

In today's fast-paced digital landscape, the demand for skilled IT professionals continues to soar. As organizations strive to stay ahead of the curve, Human Resources (HR) departments find themselves at the forefront of IT hiring, navigating through evolving trends and challenges. And in 2024, we are continuing to see one significant aspect shaping this landscape is the emphasis on Diversity, Equity, and Inclusion (DEI).

JEFF LAZENBY President and CEO, CareerEdge

With a career spanning over thirty years, Jeff Lazenby serves as President and CEO of Career Edge Organization, leading a dedicated team in transforming lives by assisting underserved communities in overcoming barriers to launch their careers successfully. Jeff's responsibilities encompass overall leadership, strategy, and management of the organization. In recent years, the IT industry has recognized the invaluable contributions of its diverse talent pool. A diverse team brings fresh perspectives, innovative ideas, and fosters a culture of creativity and inclusion within teams and organizations.

One notable trend in IT hiring is the shift towards skills-based assessments over traditional credentials. HR professionals are recognizing that talent comes in various forms and are placing a greater emphasis on practical skills, problem-solving abilities, and adaptability. This trend aligns well with DEI initiatives, as it offers a more equitable playing field for candidates from diverse backgrounds who may have gained skills through non-traditional pathways.

Remote work has also become a significant factor influencing IT hiring practices. With the rise of distributed teams, HR professionals are expanding their talent pool beyond geographic boundaries, tapping into diverse talent pools from different regions and demographics. Remote work not only enhances DEI efforts by accommodating candidates with various needs, but also promotes a more inclusive work environment by breaking down physical barriers. Work-from-home flexibility is increasingly enticing to potential hires, presenting a recruitment challenge for positions that cannot accommodate hybrid or fully-remote work.

Moreover, the last few months have seen HR departments increasingly leverage technologies, such as AI-powered tools and data analytics, to streamline the hiring process and mitigate biases. By anonymizing resumes and using algorithms to assess candidates based on skills and qualifications, organizations are fostering fairness and transparency throughout the hiring journey, furthering DEI objectives.

In conclusion, navigating IT hiring trends from an HR perspective requires a multifaceted approach that integrates DEI principles at its core. It is important for HR leaders to embrace inclusive hiring practices to not only meet the demands of the evolving IT landscape, but to also foster a more diverse, equitable, and inclusive workforce for the future.

HUMAN RESOURCES

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PERCEPTION MOST COMMON HR ISSUES ENCOUNTERED IN IT



INVESTMENT TOP THREE AREAS

Investments that respondents plan to make to develop the expertise needed to transform their business in the following areas



Lack of training and 30% skills development Departure of employees who 28% want to change jobs or careers Difficulty in 26% attracting your key resources Retaining key ÷ resources 25% ÷

 Issues regarding communication and information sharing



CURRENT STATE

Of Canadian companies collaborate with an external IT firm

The expected IT role

Technological advisor role (keeping you informed of new technological trends)	34%
Expert advisor role (participating in developing technological solutions for your projects)	26%
Partner role (participating in positioning and developing technological solutions based on business needs)	19%



Of respondents use a Temporary it resource

For using temporary IT resources top reason

Lack of available resources	28%
Duration of the mandate is short or ad hoc	22%
Looking to outsource IT services	21%
Financial reasons / cost savings	20%

Human Resources

Data Interpretation

STAFFING STRUGGLES

In the fast-paced world of IT, securing the human resources to support technological solutions can be challenging. This year's data, supported by additional inputs from business leaders, suggests persistent challenges with attraction, training, and retention of quality talent.

The #1 human resources concern for IT departments this year was lack of training and skills development; perhaps unsurprising in a sector that requires specific and fast-changing skills.

The next three challenges all relate to attraction and retention of skilled employees. In Québec, the primary challenge was identified as attraction of key resources, while in other provinces across Canada the more pressing challenge was retention. Between lower salaries compared to other provinces, and a smaller IT talent pool, Québec has long struggled with attraction.

IT is moving so fast that there is no longer a feeling of belonging. People tend to stay in one job only 3-5 years.

DENIS LEFEBVRE, Vice President of IT, HUMANIA ASSURANCE INC.

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For other provinces, a myriad of factors affect retention, including employees looking to work from home, tempting offers from larger or American companies, and real estate costs pulling employees away from major urban areas.

Retention challenges result in frequent turnover, an expensive and risky process. Companies must constantly invest in training of new staff, and must have strong policies in place to manage onboarding/offboarding and address orphan accounts that pose a risk to data security.

On the positive side, employees are looking for training and development, and restless employees are able to grow new skillsets through experience with multiple companies and sectors, which they bring to their next position.



Attraction and retention of talent in IT goes beyond material benefits; it requires, among other things, an investment in employee training and skill development. By prioritizing professional growth, companies foster a culture of engagement, thereby enhancing their competitiveness. Continuously valuing and developing teams is essential to ensure the growth.

> MARTIN LARIVIÈRE MBA, M.Sc., CRHA VP RH NOVIPRO Group Vice President Human Resources, NOVIPRO PART OF NOVIPRO GROUP

External **Support**

Many companies supplement their internal IT capacity by hiring temporary resources (72%) and/or partnering with an external IT firm (80%). In some cases, this may be a band-aid solution to HR challenges; 28% of companies pointed to lack of resources as their reason for using temporary resources. For others, external partners or temporary resources can provide expert knowledge that the company does not need to retain in-house on a permanent basis; 21% percent of companies use temporary resources because they are actively looking to outsource IT services.

The use of temporary resources varies by sector and company size. Mid-sized companies were most likely to use temporary resources (82%), while the public administration sector was both the most likely sector to use temporary resources (84%), and the most likely to list "lack of available resources" as their primary rationale (63%).



Employees don't necessarily have a problem or dissatisfation with their company, they just want to develop their career, seek for new challenges and work with new people and technologies.

NADINE GUÉRIN, Director IT Transformation & Strategy, DOMTAR

RISKS

- + **Reduced Sense of Belonging:** Deterioration of company culture and loss of employee engagement, can lead to a decline in overall performance and difficulties in internal collaboration.
- Cost and Productivity Impact of Employee Turnover: Increased expenses related to recruitment and ongoing training, as well as loss of operational continuity and institutional memory, impairs operational efficiency.
- + Security Risks From High Employee Turnover: Frequent turnover increases security risks, particularly concerning access management and information protection.
- + **Skills Gap in an Evolving Sector:** Keeping employees' skills up to date is crucial in a fast-paced technological sector; inadequate training can severely impact company performance.
- + International Salary Competition: Canadian SMEs' inability to compete with salaries offered by large American companies can result in loss of qualified talent.
- Dependence on External Resources: Loss of control over critical aspects of the business, such as service quality or industry standards compliance, can affect both public reputation and customer trust.

OPPORTUNITIES

- + Skill Development Through Mobility: Employees who regularly change positions within or between companies can bring new and diversified skills, increasing the team's knowledge base while fostering innovation.
- + Investment in Training and Retention: By investing in ongoing training and implementing retention strategies, the company can reduce its turnover rate, maintain its internal expertise, and ensure better long-term performance.
- Strategic Collaboration with External Firms: Accessing specialized expertise from external firms helps fill internal skills gaps, strengthens IT strategy, and results in better decision-making, thereby enhancing market competitiveness.
- + Al-Induced Productivity: Integrating artificial intelligence into processes can automate repetitive tasks, optimize workflows, and free up employees for higher-value tasks, thereby increasing overall efficiency and reducing costs.



THE BIG QUESTION

HAVE YOU STRATEGICALLY EVALUATED WHICH IT RESOURCES COULD BE EFFECTIVELY OUTSOURCED?

- What do you need to do to secure the IT talent you need?
- What approaches have you adopted to address talent acquisition, development, and retention within your organization?
- + Have you strategically evaluated which IT resources should be maintained internally and which can be effectively outsourced?



MODERNIZATION

Driving Digital Transformation: Strategies for Modernizing Information Systems and Overcoming Challenges in Today's Turbulent **Business Environment** Companies of all sizes have experienced a turbulent business environment over the last few years. To successfully navigate an uncertain, complex, and opaque digital landscape while propelling your organization forward, you need a strategy and roadmap that will guide you towards the modernization of your information systems. This transformation will require the complete overhaul of your enterprise architecture, as well as leveraging modern technologies, such as artificial intelligence (AI) and quantum computing, to help get you there.

Now more than ever, the goal of organizations is to optimize operational efficiency, create consistent experiences, minimize expenses, and increase safety. Through this transformative process, human resources, ways of working, governance and data management will all be modernized.

In 2024, journey will be marked by challenges such as: bridging the skills gap, change management, pre-existing (legacy) systems, compatibility with suppliers, and, of course, budget limitations. Overcoming these barriers requires informed planning, a rigorous and transparent assessment of the current internal environment, setting clear and actionable objectives, selecting the appropriate technologies, effective change management, adequate training to improve digital literacy, and the continuous optimization of modernized systems.

Flexing the proverbial 'muscle of innovation' within your company will become an indispensable element in today's digital landscape. At the end of the day, the heart of this transformation will be strategic intelligence and experimentation with emerging technologies.

ALAIN FORTIER

Senior Lecturer - Department of management information system (MIS) Université Laval

Alain specializes in digital governance, transformation, and strategy. Holding an EMBA and specializing in digital matters, his expertise and knowledge are recognized across Canada, where he frequently delivers keynote speeches and lectures.

MODERNIZATION APPLICATIONS



PERCEPTION TOP FOUR

CRITERIA CONSIDERED WHEN SELECTING TECHNOLOGIES TO MODERNIZE

Security and Compliance Requirements	38%
Return on Investment (ROI) and Cost-effectiveness	30%
Compatibilty with Existing Systems * Scalability and Future Growth Potential	29%
User Experience & Adoption Ease & Alignment with Business Goals and Strategy	26%



CURRENT STATE STAGE OF APPLICATION MODERNIZATION:

DEPLOYMENT IS INCREASINGLY TAKING CENTER STAGE



IN LARGE ENTERPRISES WITH OVER 500 EMPLOYEES, APPLICATION DEPLOYMENT REACHES 24%.



INVESTMENT



OF CANADIAN COMPANIES PLAN ON MAKING AT LEAST ONE INVESTMENT TO PRIORITIZE MODERNIZATION IN THE NEXT YEAR.



Modernization

Data Interpretation

The Drive to Modernize

Companies continue to move towards modernization of their applications. 34% are currently implementing modernization, while 16% have deployed their modernized applications. This 16% is up significantly from 10% last year, and is even higher (24%) among large companies (500+ employees).

Even greater, 8 in 10 companies plan to make at least one investment to prioritize modernization in the coming year. Companies in British Columbia (BC) were the most likely to have planned at least one investment; Quebec was the least likely.




Percentage of respondents who have planned

at least one investment to prioritize modernization by region



71

Security Threats **Prompt** Modernization

Much of this drive to modernize appears to be prompted by security threats. Security and compliance requirements were reported as the #1 consideration when selecting technologies for modernization; this holds true for the complete dataset as well as in each region across the country.

When the data was broken down regionally, cybersecurity was also the #1 prioritized area for modernization investment across the country (33% in Ontario, 38% in Quebec, 41% in BC, and 38% in the remaining provinces combined).

As this data reinforces, companies are often forced to modernize by either the threat of attacks on outdated and therefore vulnerable applications, or by the increasing requirements enforced by cybersecurity insurance providers.



Keeping Up With the Times

In addition to security concerns, increased modernization may also be explained by an incoming generation of IT professionals; applications must be updated to keep up with the skillsets of younger employees. While a majority of companies are moving to modernize, their priorities differ based on size. These differences align with the relative resources available to companies depending on scale. Larger companies are able to invest proactively in security, while smaller companies are focused on day-to-day concerns such as user experience.

Modernization is likely to continue to increase as older employees retire, cyber threats become more pressing, and more resources come to market to assist companies in the transition.

Modernization priorities by company size.



The pandemic also impacted modernization; companies had to invest quickly to ensure that employees could work remotely. Now that companies have taken that step, they will slowly begin, or return to, investments in modernization.

> IAN CHRISTENSEN, Cloud Channel Manager, ARROW ENTERPRISE COMPUTING SOLUTIONS FOR MICROSOFT

RISKS

- + Increased Vulnerability to Cyberattacks: Companies that do not modernize expose themselves to a higher risk of data breaches, which can result in significant financial losses, reputational damage, and loss of customer trust.
- + **Resource Constraints:** Modernization requires significant financial and human investments. For SMEs, this may mean pressure on their limited budgets and difficulty allocating necessary resources without compromising other aspects of their operation.

OPPORTUNITIES

- Workforce Renewal: Replacing older employees with younger workers who have been trained in the latest technologies fosters innovation and adaptability. This positions the company to better respond to market trends and consumer expectations.
- + Sectoral Growth and Competitiveness: As modernization becomes a standard, companies who leverage it effectively will be more competitive, gaining access to new resources, technologies, and skills.

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THE BIG QUESTION

WHAT SPECIFIC TOOLS OR PROCESSES ARE YOU EMPLOYING TO ADDRESS THESE CHALLENGES?

- Is failure to modernize your IT resources putting you at a competitive disadvantage?
- + With IT resources becoming increasingly integrated across all organizational levels, there is increasing urgency to modernize applications.
- + How does your company identify and prioritize modernization projects?
- + Have you established a strategic plan to guide ongoing investments in modernization?
- + Have you assessed the potential risks to competitiveness, security, and productivity associated with the failure to modernize certain tools?
- + What specific tools or processes are you employing to address these challenges?



CONCLUSION

The 2024 IT Trends Report underscores a pivotal moment for Canadian enterprises. As the findings make clear, strategic IT investments are not just beneficial but essential for staying competitive in a rapidly evolving digital landscape. This report highlights the undeniable value of integrating IT into the broader corporate vision. It also outlines the risks that budgetary constraints and miscommunication between the IT department and non-IT decision-makers can pose to such integration.

While it is often more difficult for small and medium-sized businesses to make proactive investments in IT, doing so can catalyze a cycle of innovation, efficiency, and growth, as well as protect against growing cybersecurity threats.

Canadian companies are in competition not only with each other, but with companies around the world. Well-informed decisions and visionary investments will be necessary to both gain a competitive upper-hand and compete globally.

With tools like this report, decision-makers have an opportunity to take the lead in their industry. Those who learn about emerging tools and trends can perceive value and leverage tools early. Those who fail to learn or to make the investments will be left behind.



Confidence Within the Executive Body: **The New Top Priority**

Marked by the advancement of generative artificial intelligence and deep tech, we have noticed a common thread throughout the technological landscape of 2024: **trust**. Something that proves essential for the successful adoption and deployment of technological innovations in a rapidly changing environment.

TRUST AS A PILLAR OF TECHNOLOGICAL INNOVATION

Emerging technology, like generative artificial intelligence, presents opportunities and challenges regarding security, legislation, and ethics. The reliability of tools, data security, and especially data management are at the heart of consumer concerns that has been gradually fostering a climate of distrust toward companies. To counter this trend, it's imperative for businesses to establish robust governance frameworks and opt for impeccable transparency and ethics. Regulators also play a crucial role in restoring confidence by creating clear regulatory frameworks for the responsible use of emerging technologies. For example, an increasing number of Canadian universities are beginning to regulate the use of generative AI for students in their assignments. This approach contributes to the gradual restoration of trust between the teaching staff and students.

TRUST AND ITS IMPACT ON THE LABOUR MARKET AND OPERATIONAL MODELS

The integration of artificial intelligence into the professional environment is gradually redefining the roles and responsibilities and fostering increased collaboration between humans and machines. This new work dynamic requires mutual trust between employees and these new technologies. At the same time, companies' operational models are evolving towards more flexible schemes that can quickly adapt to market changes and disruptions. Organizations that succeed in establishing this trust and adaptability are better positioned to effectively respond to future challenges.

TRUST AT THE HEART OF BUSINESS ECOSYSTEMS

Trust is a cornerstone of today's increasingly interconnected business ecosystems, facilitating interactions while stimulating innovation and growth. Companies capable of establishing and maintaining trusted relationships within their ecosystem will benefit from a significant competitive advantage, enabling shared value creation, increased responsiveness to market opportunities, and enhanced profitability.

TRUST FOR A PROMISING TECHNOLOGICAL FUTURE

The year 2024 highlights the vital importance of trust in the IT sector. Faced with the expanding possibilities offered by generative artificial intelligence and other innovations, establishing a climate of trust becomes a strategic priority for companies to continue their operations smoothly. By integrating trust into the core of their operations, culture, and ecosystems, companies are preparing for success in the technological landscape of tomorrow. Trust transcends ethical issues to become the catalyst for technological adoption, innovation, and ultimately, business success in the digital era.



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