TORYS LLP

The Next Wave of Innovation in Canada

Contents

Executive Summary

Emerging out of the significant and widespread disruption of the pandemic, our growing innovation economy is offering Canadian companies, investors and governments new ideas and opportunities. In this report we explore how innovation—both in the form of technology as well as operations and governance—is driving entrepreneurial mandates, integrating into and transforming more traditional sectors—as well as raising new transactional and risk considerations for market participants looking at these areas of growth.

Pandemic as Accelerator

The systemic disruption of the pandemic "shook the trees" of innovation as businesses, researchers and policymakers pivoted to address resource, technology, health care, supply chain and socioeconomic crises. The variety and scale of these challenges have served to accelerate innovation, with some saying to the effect of five times the pace of innovation at a pre-pandemic cadence.[1] Canada's response to the COVID-19 pandemic was a reflection of rapid development of new technologies and other innovations that were already occurring in business and government.

The federal and provincial governments have been strategically supporting this momentum in Canadian innovation through a range of programs, funding resources and tax incentives. Among such programs is the federal government's Innovation Superclusters initiative which, in the next two years, plans to infuse investment into five superclusters earmarked as areas of global competitive advantage—digital technology, protein industries, advanced manufacturing, scale AI, and ocean—to drive innovation, advance research and attract top talent.[2]

[1] How covid-19 is boosting innovation. *The Economist*, video available **here** (timestamp: 4:53).

[2] Innovation in Canada. Internal research report, June 2021.

Areas to Watch

The technology sector in Canada has been on a years-long spike in growth, responsible for 27% of the increase to the national GDP over the last five years.[3] The industry is generating a wide range of advances—biotech, AI, and quantum technologies are a few examples—that are finding applications in everything from M&A transactions to healthcare patient data management. Another high-growth area is the life sciences, spurred by the pandemic, which is commercializing groundbreaking innovations and working with agricultural and biotech companies on cutting-edge agribusiness projects, including, for example, advances in plant-based proteins and medicinal properties of food.

As the tech sector expands, its outputs and results are finding more and more practical application in the innovation strategies of other sectors in Canada, including more established sectors. The financial services industry continues to transform through the integration of fintech solutions into their operations and long-term strategies. Another example is integrations of "smart" technology and innovations becoming points of competitive distinction across sectors like real estate and advanced manufacturing.

Beyond technology-driven advances, Canadian companies are also applying innovative ideas to matters of corporate governance, operations and processes. For example, as the ESG mandate rises across virtually all sectors, Canada's oil sands are global leaders in ESG innovation in the energy sector. Infrastructure—a key area slated for government investment in Canada's recovery from the pandemic—is adapting project and financing models for a more nimble approach to infrastructure projects and transactions. And as the COVID-19 crisis is shifting sentiments around globalization and domestic production, governments in Canada are recalibrating their approach to procurement and supply chain management.

As the sustained focus on innovation by business and government continues to yield new opportunities in Canada, business leaders will want to be agile in response to the natural ripple effects of innovation, considering new strategies and areas for risk mitigation in response to rapid change.

[3] Canadian ICT Sector Profile 2020. Government of Canada, available here.

Emerging Companies in Canada: Data and Technology and Digital Life Sciences

In the last several years, the growth of Canada's emerging company and tech sector has been on a path of acceleration. Last year, technology and life sciences companies accounted for more than 80% of all venture capital investment in Canada[4] and we are also seeing increased foreign investment into the industry, particularly from the United States.[5]

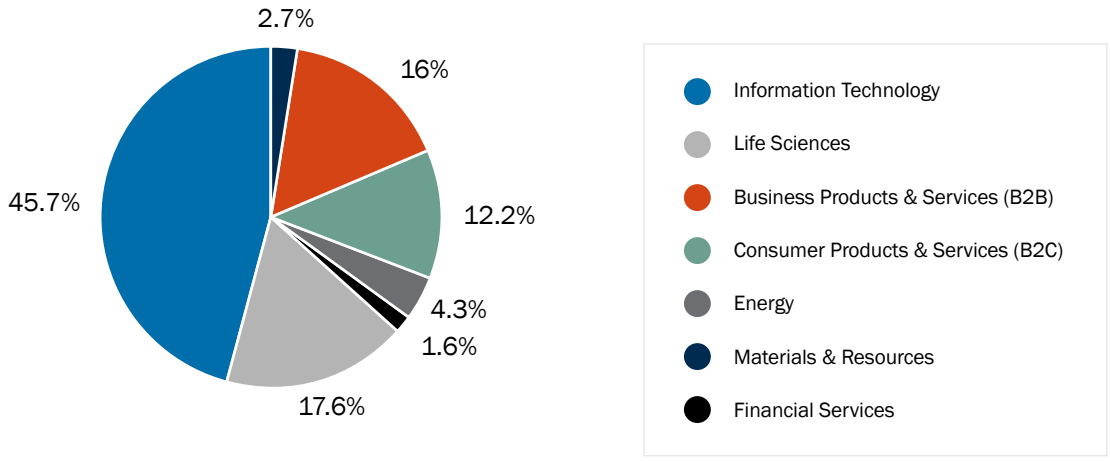
As the industry grows, Canada is attracting tech entrepreneurs and talent: four of the top 20 cities in North America for technology talent were in Canada (Toronto is #3).[6] The tech sector's presence, once concentrated in key research and commercial centres, is now being felt across the country. Alberta, a resource- and talent-rich region in economic transition as it seeks new balance after a longstanding focus on oil and gas, had its best year on record in 2020 for venture capital investment, largely in startups and emerging tech companies.[7]

[4] Canadian Venture Capital Market Overview, 2020 Year in Review. CVCA, available (PDF download) here.
[5] Venture Financing Report, available here.
[6] 2019 Scoring Tech Talent. CBRE research, available here.
[7] Venture Financing Report, available here.

Areas to Watch

Nationwide expansion is accompanied by the increasing scope of the Canadian tech sector as it diversifies in extending its innovations across industries and segments of the economy. See Figure 1 below for a sector breakdown of 2020 venture capital financings in emerging companies. This trend is also occurring as part of increasing integration of new technologies into more traditional industries, services, and assets.

Figure 1) Deal Activity by Industry Sector



Life sciences and biotech are other areas contributing to Canadian innovation and which have been growing for years, on everything from diagnostics to the personalization of healthcare. The pandemic has served as a catalyst for the building out of product portfolios and foundational platform work. The impact on M&A was the accelerated development of companies which have enjoyed ongoing premiums in pricing. A remarkable 84 initial public offerings for biotech companies in North America took place in 2020, raising a total of US$15 billion.[8] Persistent unmet clinical needs and an aging population will continue to be significant drivers for investment in the life sciences, and we will likely see more activity around AI and digital health, particularly in their application to drug development, patient identification and customized care.[9] The sector in Canada also continues to receive strong institutional

[8] The rise and rise of biotech. Torys Quarterly: M&A Trends 2021, available here.

[9] *Ibid*.

support, including from the federal government through its Strategic Innovation Fund, which will provide up to $792 million to support, among other things, research and development, clinical trials and manufacturing of vaccines.[10]

A remarkable *84 IPOs* for biotech companies in North America in 2020 raised a total of *US$15B*.

The Growing Influence of Data Assets

The pervasive effects of data are one such area of importance. From a business perspective, we are seeing the data assets of a company as a foundational driver of innovation, growth and competitive differentiation—for virtually all types of organizations and industries. This trend has become even more urgent as consumer-facing companies pivot their digital strategies to accommodate stay-at-home customers and other effects of the pandemic.[11] The scope of regulatory and judicial involvement in privacy, cybersecurity and other data governance matters is reflective of the scale of data's influence: a national privacy regime modernization in 2020,[12] and rising privacy enforcement actions and class actions are a few examples. The federal government has dedicated policy work to assist in the shaping of a data governance framework in Canada, launching in 2019 its Canadian Data Governance Standardization Collaborative[13] which has recently released its roadmap to a standardized data governance model with best practices around the many inter-related aspects of managing data.

Doing Deals and Investing

Seizing opportunities in emerging companies raises a number of considerations for both startups and investors, as dealmaking practices, IP and broader data

[10] Fall Economic Statement 2020. Department of Finance, available here.
[11] Data management: turning risk into opportunity. Torys Quarterly: Strategy for accelerated change, available here.
[12] Privacy modernization with a northern touch: the proposed *Digital Charter Implementation Act*, available here.
[13] Leading experts join SCC effort to transform data governance landscape, available here.

governance strategies are evolving, both in Canada and beyond, particularly as privacy and cybersecurity present growing risk areas.

Startups

For startup targets of acquisitions, the early stages of incorporating and establishing governance best practices will be key considerations, especially in preparation for any future kind of exit. For startups for whom IP plays a critical role to the business model, having a clear IP strategy in place will also be essential. Strategic buyers in particular will look for robust IP, cybersecurity, privacy and overall data strategies so they can assess how aligned these strategies are with their own objectives and systems.

Private Equity and VC Investment

Private equity and venture capital have long seen the tech sector as an attractive destination for investment. In 2020, that interest grew even stronger in light of the spike in demand for technology solutions and services caused by the pandemic. Investors in these areas are finding creative ways to invest in technology and other emerging companies, and we are seeing deal practices and terms aligning more with U.S. dealmaking, especially as investors from the more mature American tech sector look north for new opportunities outside of the U.S.[14] For more on deal practices in the emerging companies and venture capital ecosystem, read our full analysis in Torys Venture Financing Report.

Curbing Risk

While data assets are presenting new business opportunities and driving innovation across Canada's emerging company and tech sector, there are also associated risks to consider.

Intellectual Property

Very few organizations have focused on commercialization of data to create new products and services. This is not surprising because:

1. there is no universal "data ownership right"; and

[14] Torys Venture Financing Report 2021, available here.

2. regulatory and legal regimes governing ownership rights in data are still in flux.

Having a clear understanding of a target's IP and usage rights and overarching strategy is crucial to various elements of a transaction, from valuation to due diligence.

Privacy, Cybersecurity and Data Governance

As we see more investor class actions in response to cybersecurity and privacy breaches in the U.S. emerge,[15] dealmakers looking to invest or make an acquisition should ensure adequate reporting, practices and oversight are in place—or are ready to be put in place post-closing—to mitigate operational, litigation, reputational and other business-critical risk. Careful analysis of a target's privacy and cyber-security compliance history at the early stages of a transaction can often help identify red flags.

Competition and Foreign Investment Review

We are now seeing privacy issues being addressed by competition regulators as leveraging user data is increasingly becoming a point of market advantage. This is another area where alignment between buyers and sellers in their data governance regimes and the way their underlying business models leverage data will be a major consideration for dealmakers.

[15] Data governance and Canada's c-suite: are directors and officers liable for cybersecurity failures? *Litigation trends 2020*, available **here**.

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Accelerated Innovation of Canada's Financial Institutions

Well before the COVID-19 crisis, Canadian banks were on the path to digitization, automation and virtualization, but these efforts were accelerated significantly as a result of the pandemic. Canadian banks are now experiencing a surge in rapid integration of technology and digitization amid several developments currently underway that will revolutionize the financial services industry in the coming years.

In particular, the Canadian government has launched initiatives to modernize its payment systems and introduce a consumer-directed banking framework, all of which will further foster the growth of Canada's fintech ecosystem and increase Canada's competitiveness as a digital economy in the global landscape.

Areas to Watch

Modernization of Canada's Payments Systems

Alternative digital payment solution platforms have entered and expanded the market and niche offerings, ranging from independent online trading platforms to digital loans and new financing providers. To address the significant momentum for change taking place in the financial services industry, Payments Canada, responsible for the operation of the national clearing and settlement infrastructure, is undertaking a multi-year initiative to modernize the nation's payments ecosystem.[16]

[16] See Torys bulletin, 'How will Canada reinvent its payments framework for a post-pandemic digital reality", available here.

Payments Canada is currently implementing a new real-time payments system, referred to as Real-Time-Rail, or RTR, which will be comprised of:

1. RTR Exchange, to facilitate the real-time exchange of payment messages between participants; and

2. RTR Clearing and Settlement, to perform the real-time clearing and settlement of transactions between participants. Immediate benefits of this new system will include:

    i. 24/7 availability;

    ii. real-time message exchange, where payment and transaction processing and settlement will be fully completed within seconds (i.e., in "real time");

3. immediate payment finality for payors and payees; and

4. support for the ISO 20022 messaging standards (the data rich global messaging standard that will serve to harmonize payment messages both domestically and internationally).

The greater availability of secure payments data is arriving just in time to spur growth of fintechs in Canada by enabling new financial services, including through open banking APIs.

Open Banking

With an estimated 3.5 to 4 million Canadians already adopting open banking services, consumer-directed (or "open") banking—a system that allows customers to access personalized products and services that require the secure transfer of financial data from their bank to third parties such as fintechs—is increasingly being leveraged by Canadians.[17]

In August 2021, the Minister of Finance released the Advisory Committee on Open Banking's Final Report which recommends that the government implement a hybrid, made-in-Canada approach which recognizes the important and distinct roles of government and industry. Under this hybrid approach, the government will establish the policy objectives, oversee the consultation process, set the

[17] Consumer-directed finance: the future of financial services. The report finds that the term "open banking" is often misunderstood and that "consumer-directed finance" more accurately reflects what is intended, providing better control over and protection of their financial data.

framework and timelines, while the industry will manage the implementation and administration of the system. The recommended hybrid, made-in-Canada open banking system would have the following core elements: common rules for all participants; an accreditation framework for third-party service providers to enter the system; and technical specifications to ensure data security.

The Committee suggests a two-staged open banking implementation plan:

1. an initial low-risk open banking system to be designed and implemented by January 2023, followed by

2. a period of ongoing evolution and administration of the system.

Retail Payments

In the latest federal budget, the government is proposing to introduce legislation to implement a new retail payments oversight framework (RPOF) to continue to promote growth and innovation in digital payment services, such as digital wallets, while ensuring that these payments services are safer and more secure. It will require non-financial institution payment service providers (PSPs) to establish sound operational risk management practices and protect users' funds against losses. The RPOF will include a public registry of regulated PSPs maintained by the Bank of Canada to ensure their compliance with operational and financial requirements.[18]

Canadian Central Bank Digital Currency

As central banks around the world contemplate the adoption of digital reserve currencies, the Bank of Canada is exploring a Central Bank Digital Currency for use in everyday retail payments.[19] The Bank of Canada has not committed to the issuance of a CBDC and has stated the importance of working with the private sector to create the system. While it has yet to define a process for doing so, this presents a significant opportunity for the industry and stakeholders to work with government in order to establish a robust framework.

As part of this initiative, the Bank of Canada is working alongside the Bank of England, the Bank of Japan, the European Central Bank, the Federal Reserve, Sveriges Riksbank, the Swiss National Bank and the BIS to consider the key features that would be needed for a workable CBDC system.

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[18] See Torys bulletin, "Budget 2021's impact on the Canadian financial sector", available here.

[19] Bank of Canada report 2021. See also Torys bulletin, "Digital dollars: central banks, cyber space and your cash", available here.

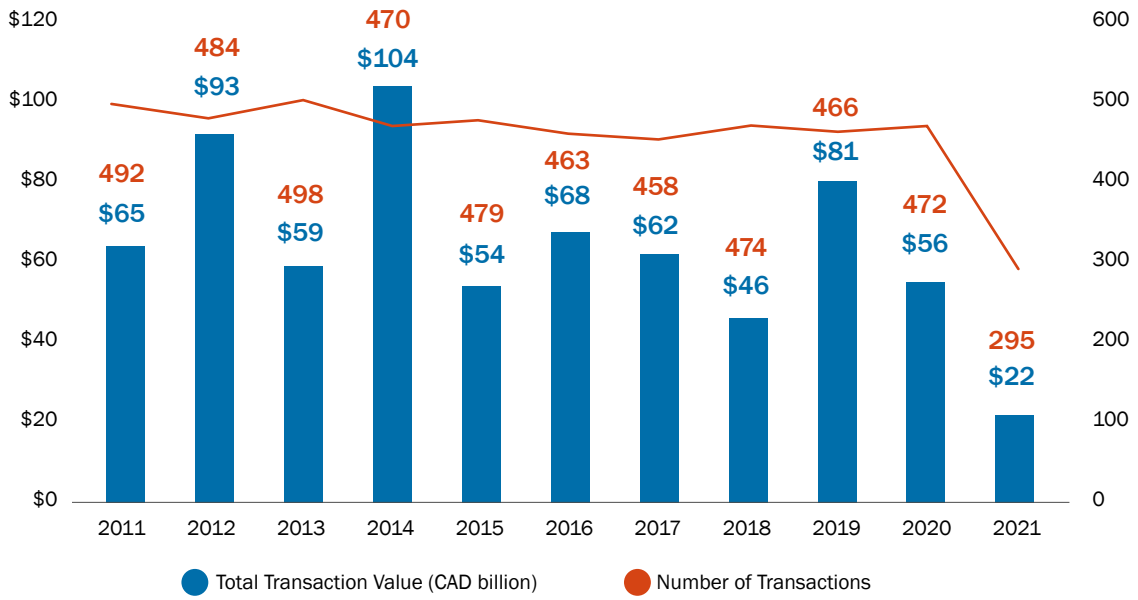
Doing Deals and Investing

The financial services industry is showing the active pursuit of M&A opportunities; however, as regulatory regimes continue to evolve in alignment with technology and other innovations, dealmakers in the sector will want to keep watch on changes to regulatory approach, new frameworks and guidance, and changing industry best practices to help mitigate risk.

Strategic M&A

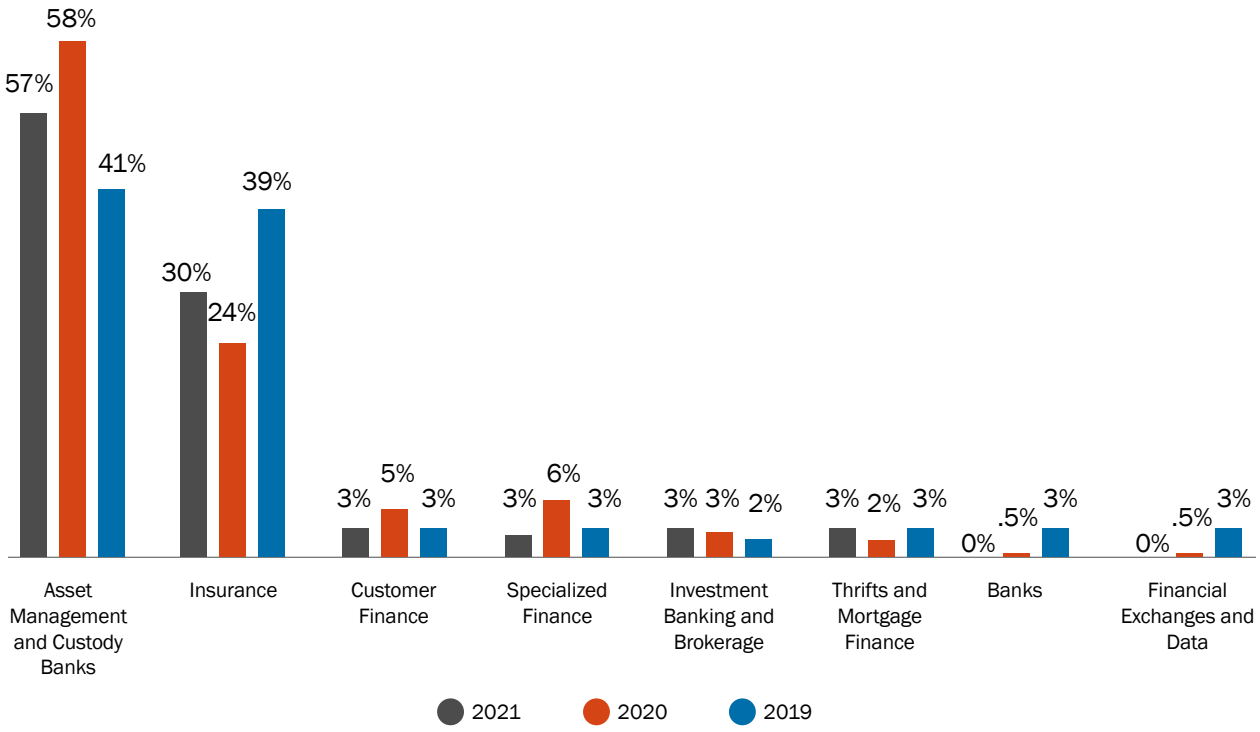
The momentum in financial services M&A activity is continuing, with notable deal-making across asset management, fintech, insurance, banks and related loyalty partnerships, and international bancassurance (see figure 2 below and figure 3 on the next page).

Figure 2) Financial Services M&A Deals



In recent years, the industry has attracted a broader group of investors—including asset managers, pension plans, private equity groups and even retail companies—interested in the opportunities presented by financial services businesses where fees and income streams can produce strong returns and an increased customer base over time. Auction processes involving the sale of insurance, fintech and asset management businesses have been particularly competitive as a result. Opportunities for scale remain ongoing, and we anticipate further consolidation activity in the industry along with sales of non-core assets.

Figure 3) M&A Deals with FS Targets: Sub-Sector Classification



Curbing Risk

Data Governance and Regulatory Risk

As industry players accelerate their adoption of digital technologies and focus on harnessing the vast and rich transaction and consumer behavioral data they hold, they need to ensure that they collect, use, share, and safeguard such data in compliance with regulatory and contractual obligations as well as industry standards. In addition to privacy and competition law obligations, organizations need to be mindful of whether they are required to comply with industry-based regulations such as the Payment Card Industry Data Security Standard, and/or contractual obligations by financial institutions, payment card networks etc.

Privacy and Cybersecurity

While customer engagement in digital banking continues to gain ground, it is accompanied by a rising risk of privacy breaches and cyber attacks. From an M&A perspective, it is vital that acquirors fully comprehend the privacy and cybersecurity

risks associated with their targets. Financial services players must also be mindful of the Canadian privacy law reform presently underway. Canadian governments at the federal and provincial levels have announced their intentions to enhance the Canadian privacy law framework by moving private sector privacy laws towards an *EU General Data Protection Regulation* model, a model that empowers individuals by providing more control over their personal information. Given the patchwork of federal and provincial private sector laws in place and on the horizon, financial institutions operating across Canada will need to anticipate the extent to which these updated and new privacy laws apply to them. Much of this will be driven by a constitutional division of powers analysis, the outcome of which may have significant operational and regulatory consequences on the financial sector.[20]

From an M&A perspective, it is vital that acquirors fully comprehend the *privacy and cybersecurity risks* associated with their targets.

Consumer Protection

More than two years ago, the government introduced in Bill C-86 (Bill), legislative amendments to the *Bank Act* and the *Financial Consumer Agency of Canada Act* to strengthen the Financial Consumer Agency of Canada's mandate and powers, and to introduce the new Financial Consumer Protection Framework (Framework) to further advance consumers' rights and interests when dealing with their banks. While the amendments to the *Financial Consumer Agency of Canada Act* came into force in April 2020, the *Bank Act* amendments introducing the Framework will come into force on June 30, 2022. Applicable to banks and authorized foreign banks, the Framework consolidated existing consumer provisions and regulations and strengthened consumer provisions that apply to banks and authorized foreign banks under the *Bank Act*. The Framework provides for a wide range of new requirements intended to encourage responsible business conduct and the fair treatment

[20] See Torys bulletin, "Cross-border privacy and cybersecurity considerations for M&A", available here.

of consumers, including the obligation to establish and implement policies and procedures to ensure that products sold to consumers are appropriate to the for the person having regard to their circumstances, including their financial needs. Particularly onerous are the new complaint management requirements which require comprehensive records to be made of all complaints.

Financial institutions should be mindful of this expanded role of the FCAC and its powers to sanction by enhancing their compliance with financial consumer protection requirements, particularly the more onerous market conduct obligations that are forthcoming in the new framework.[21]

Enforcement Activity and Litigation

Organizations are also increasingly facing civil liability for failing to comply with their regulatory obligations, predominantly in the form of privacy and data breach class actions. Compliance violations associated with sensitive consumer payments data are particularly likely to attract civil litigation. More attention is also being paid by class action counsel and regulators to the relationship between financial institutions and their clients, especially with regard to the duties owed by financial institutions.

Sources of potential litigation include consumer protection matters, with potential risk areas covering adequate and clear disclosure of fees, conflicts of interest, and exclusions of liability for specific events in standard consumer contracts. Canada's anti-money laundering regulator, the Financial Transactions and Reports Analysis Centre of Canada (FINTRAC), has, after a temporary pause during the pandemic crisis, resumed its examinations of industry players' potential breaches of anti-money laundering and countering terrorist financing legislation. This will further lead to heightened regulatory scrutiny in the financial services industry.[22]

[21] See Torys bulletin, "Roadmap for the new financial consumer protection framework", available **here**.

[22] For detail, see Torys' bulletin, "Mitigating litigation risks, enforcement actions for financial institutions", available **here**.

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Advanced Manufacturing and Supply Chains

The risks associated with a globally integrated supply chain were realized during the pandemic, as health crises forced a prioritizing of domestic concerns for governments around the world. For many countries, including Canada, a new domestic focus for both governments and manufacturers has emerged in response.[23]

For manufacturers, the increased prioritizing of domestic capacity comes at a time when the sector in Canada—largely comprised of small- and medium-sized businesses—was already focused on progressing advanced manufacturing practices, digitization and intelligent supply chain mandates. According to a recent report from REMAP, a government-backed refined manufacturing association, "[t]he global competitive landscape that was responsive to digitally-enabled SME manufacturers before the worldwide pandemic has only intensified Canadian SMEs' need to invest in adopting transformational technologies."[24]

Areas to Watch

Growth areas include vaccine production, PPE, 3D printing, robotics, manufacturing transformation (further automation), and rapid prototyping. 3D printing in particular is moving well past its early days, creating equipment for the oil and gas industry,

[23] Rewiring the supply chain: how the pandemic is shaping government procurement. Torys Quarterly: Rethinking cross-border business, available here.

[24] Smart manufacturing for a connected world. Refined Manufacturing Association Process, available here.

medical implants and a host of other life sciences applications.[25] As companies upscale their technologies, systems and processes, they are also impacting the workforce as new skills and training are required—in Ontario alone, advanced manufacturing is responsible for over half of the more than 45,000 new factory jobs created in the province since 2010."[26]

To help spur innovation in the sector, the federal government's Advanced Manufacturing Supercluster (NGen) is building up and encouraging the adoption of next-generation manufacturing capabilities, such as advanced robotics and 3D printing.[27] The Supercluster is seeking to position Canadian companies to pursue industrial digitalization, maximizing competitiveness and participation in global markets. NGen ended 2020 having approved 23 industry-led collaborative innovation projects valued at $76.8 million. NGen's projects will engage 61 industry partners, including 53 SMEs, along with 15 colleges, universities, and innovation centers across Canada.

Over half of the *45,000+ new factory jobs* created in Ontario since 2010 were a result of advanced manufacturing.

New Procurement Strategies

Many long-standing presumptions underlying government procurement were challenged during the crisis: the strong presumption in favour of competitive procurement and against sole source contracts; the presumption in favour of advance notice and of transparency in costing; and the built-in assumption that leverage would in most circumstances be with the government buyers and not with suppliers. Looking forward, the achievement of the broader policy objectives for future government procurement will require careful planning within the context of Canada's international trade commitments to ensure a thoughtful approach to procurement in the context of a global supply chain that is evolving in response to rapid and systemic disruption.

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[25] Digital Transformation in Manufacturing. *The Globe and Mail*, available **here**.

[26] Five reasons for optimism from Canada's resilient tech sector. The Toronto Star, available **here**.

[27] Innovation in Canada. Internal research report. June 2021.

Doing Deals and Investing

M&A practices in manufacturing are set to be informed by newly infused technologies and innovations, which dealmakers will want to audit and align in their seeking of opportunities. As supply chains rewire around innovations, and alongside an evolving approach to government procurement, contract management and the regulation of competition and foreign investment will be areas of transactional risk consideration.

Tech Due Diligence

Start the tech due diligence process early in a transaction and enlist the assistance of your integration team to plan the integration well before signing.[28] Seek their input on the cost and timeline, which could greatly affect the overall economics of the deal. Study the target's IT, not just as a supporting asset, but as part of the value proposition of the company. Has the target developed systems and processes that enhance the value of the company, or has the target simply made use of standard technologies in a way that fits its business needs?

Procurement

Have an IT procurement strategy that anticipates M&A scenarios. Make sure your IT service providers are obligated to assist you in tech due diligence, and that there is a mechanism in your service agreements to support the operations of the target.

Data Governance

The "data readiness" of a manufacturing company is an influential factor in the application of any technology solution, particularly with respect to technologies such as machine learning where the importance of having appropriately structured data that a computer can understand is paramount to the tool's success."[29]

Employment and Upscaling

To keep pace with the integration of technology, it is estimated that 50% of workers in manufacturing will need to learn new skills. A careful assessment of the skills and training of a target's employees alongside your data and technology diligence will be important to synthesize and understand for valuation and future operations and strategy.

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[28] Tech issues in M&A will keep dealmakers in the cloud, Torys M&A Trends, available here.

[29] Digital Transformation in Manufacturing. *The Globe and Mail*, available here.

Curbing Risk

Contractual Risk

We are seeing renewed focus on business continuity/disaster recovery (BC/DR) provisions as a consequence of the pandemic. As with force majeure clauses, the importance of prompt communication about incidents and business interruption has been brought to the fore. Suppliers who have had to communicate their activities to multiple clients are likely seeing some value in setting up more standardized processes under their contractual arrangements.

Competition and Foreign Investment Review

In part in light of the public dollars being invested in procurement, laws on procurement, transparency in the procurement process and procurement contracts are now scrutinized with new perspective. Tensions between Canada's trade and international obligations and "step-in" rights in national laws, to protect Canada's citizens, have reared their heads, with stakeholders consistently reaching out for support on legal issues in an area that is now highly charged.

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Innovations in Resources, Energy and Infrastructure

Drivers both longstanding and unexpected are putting pressure on traditional segments of the Canadian economy to innovate and remain competitive amid changing global markets. Natural resources, energy and infrastructure players in Canada are embarking on transformational innovations to their operations and systems as technology entrenches itself more and more into their industries. This industrial transformation is also buttressed by sectoral transformation support from the federal government, which in October 2020 announced its Growth Plan, under which $10 billion of the Canada Infrastructure Bank's (CIB) allocated $35 billion in funds will be made available for projects related to five priority infrastructure sectors: clean energy generation, storage, and transmission; increasing broadband connectivity in under-served communities; large-scale building retrofits to increase energy efficiency; agricultural irrigation; and zero-emission buses and electric vehicle charging.[30] Funds are also available for project acceleration and Indigenous infrastructure across these sectors.

Areas to Watch

Energy Systems

Distributed energy resources (including renewable microgrids and battery storage) are increasingly being considered a viable solution to enhance energy security for

[30] Getting projects built during the pandemic: The continued importance of relationships with Indigenous peoples, Torys bulletin, available here.

remote, and in particular Indigenous communities—as a result, energy storage facility development is on the rise. In recent years, technologies related to energy storage and other distributed energy resources have significantly improved and become more economical. While the cost of energy storage itself has fallen, the integration of energy storage systems with renewable generation remains complex, requiring expensive technologies as well as operation and maintenance costs over the project lifecycle. This has led some utility proponents and Indigenous independent power producers (IPPs) to explore alternative ownership and operational models, including a split between utility-control of storage/control systems and IPP-control of generation assets.[31]

Renewables

Renewables are strengthening their presence in Canada's energy mix, with wind and solar power seeing significant growth and advances in technology and processes that are lowering costs and making the area more competitive.[32] Financial buyers and other institutional investors are showing continued interest in the renewables space, and as environmental and climate change concerns persist alongside the evolution of ESG as a growing part of business strategy and governance, renewable and other clean energy assets in Canada are set to be increasingly attractive targets for investment.

Oil and Gas

The oil and gas industry is playing a role in progressing the technology mandate in Alberta. While the industry has placed significant importance on HSE performance and sustainability for many years, the increased focus on environmental and social governance (ESG and decarbonization) issues is accelerating the narrative on energy production. This changing mindset has resulted in diversification and is inviting the redirection of capital and resources toward new technology, with important advances being made in hydrogen, carbon capture usage and storage (CCUS) and other emissions reduction technologies. Alberta's energy industry has been breaking ground in this area: the province's oil sands companies are leaders in research and development—the industry ranks third nationally for R&D spending, behind the technology and life sciences sectors —investing over $1 billion every year since 2012.[34]

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[31] Energy storage development: opportunities for remote Indigenous communities. Torys bulletin, available **here**.

[32] Renewables will stay strong. *Lexpert*, with commentary from Torys energy and infrastructure partners Krista Hill and Valerie Helbronner, available **here**.

[33] Another record year for oil sands research spending to reduce GHGs, costs. Canadian Energy Centre, available **here**.

[34] ESG leadership in the Canadian energy sector. Torys Quarterly: ESG's turning point, available **here**.

Agribusiness

Canada's agricultural industry is another growing sector, with its Protein Supercluster identified by the federal government in its Superclusters initiative, supporting leadership in plant genomics that improve nutrition, novel processing technology and digital solutions.[35]

The federal government is committing another *$750M over the next five years* to the Unversal Broadband Fund.

Infrastructure

Infrastructure projects are set to be a critical source of government investment in the coming years. Under the 'Investing in Canada Plan', launched in 2016, the Government of Canada has committed in excess of $180 billion to support infrastructure projects with the goals of creating long-term economic growth, and supporting the resilience and social inclusivity of communities, and transition to a clean growth economy.[36] A number of infrastructure sectors have been earmarked for government investment, including broadband networks, energy systems, social infrastructure, public transit and trading ports. Technological advances will be key to many facets of these modern infrastructure projects.

Broadband Networks

The pandemic has highlighted the digital divide between urban and rural areas, with many remote and indigenous communities having limited or no broadband access. The federal government is committing another $750 million over the next five years to the Universal Broadband Fund for a total of $1.75 billion in the next seven years, with the long-term goal of 98% of Canadians being connected by 2026.[37] The provinces, territories and municipalities also have significant programs. For example, the Government of Ontario has committed nearly $4 billion to connect every region in Ontario to reliable, highspeed internet by the end of 2025 through an innovative

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[35] Innovation in Canada. Internal research report, June 2021.

[36] Investing in Canada Plan – Building a Better Canada. Government of Canada, available here.

[37] Fall Economic Statement 2020. Department of Finance, available here.

procurement process.[38] As governments look to close this broadband infrastructure gap, public-private hybrid delivery models are emerging as a way encourage ISPs to invest in broadband infrastructure in rural and remote communities.[39]

Social Infrastructure

With the overall ambition of improving the quality of life for all Canadians, the federal government is investing across a variety of social infrastructure projects, including in Indigenous communities, early learning and childcare, affordable housing, home care, and cultural and recreational infrastructure.[40] Through its Smart Cities Challenge, the federal government is encouraging communities to adopt a smart cities approach to improve the lives of their residents through innovation, data and connected technology.[41]

Oceans Supercluster

Another one of the federal government's five Innovation Superclusters, the Ocean Supercluster has been identified as a source of innovation with widespread application to everything from marine transportation infrastructure and offshore oil and gas to shipbuilding and fisheries.

Doing Projects and Investing

As investment in resources, energy and infrastructure rises, creative project proponents and dealmakers are innovating with new project models, some of which will also help to address important factors such as ESG considerations, Indigenous consultation and environmental approvals.

Project Strategy

As governments embark on ambitious initiatives across a variety of sectors, the way they are engaging with infrastructure projects is evolving. In particular, we are seeing governments at all levels increasingly look to advance projects with the private sector, through different structures and interfaces than may have been historically considered. For example, the traditional project delivery model, Design-Bid-Build

[38] Infrastructure Ontario, PDF available **here**.
[39] Solving the broadband infrastructure gap. Torys Quarterly: Canadian sector report, available **here**.
[40] Investing in Canada plan funding stream: Social infrastructure. Government of Canada, available **here**.
[41] Smart Cities Challenge. Infrastructure Canada, available **here**.

(DBB), may not be ideally suited to large or complex projects, particularly linear projects which are presenting new risk profiles, many of which are being undertaken in highly developed urban environments where interfaces with existing buildings, utilities and infrastructure create additional and often unquantifiable risks.

In addition to the challenging risk profiles of these new types of projects, there is also a growing desire to bring projects to market faster than ever as governments rely on infrastructure as a means of fiscal stimulus to spur economic activity. As the priority placed on the development of infrastructure by various levels of government increases, we expect to see a further evolution of the conventional P3 model in response to these trends. By extension, conventional project financing—which has often relied on a strong sovereign or corporate credit as the feedstock for the project financing—may also be evolving, and we may see creative structures, such as tolled projects, congestion pricing, concessions, other user pay or demand risk projects and hybrid structures emerge to support this market evolution.[42]

Curbing Risk

ESG Driving Innovation

The increased focus on ESG issues is changing the narrative in energy production, and this changing mindset is inviting a redirection toward new technology. Demand from investors and shareholders—including through new initiatives like the Say on Climate vote movement—appears set to rise further, and so ensuring appropriate auditing of targets' governance of ESG factors will be key to diligence processes.[43]

Indigenous Engagement

Over the last decade, Indigenous consultation and participation have become vital to successful infrastructure development in Canada. Whenever a government permit or other measure may impact aboriginal or rights, the duty to consult arises. Project proponents will need to budget time in the development schedule for the consultation process as early as possible and on an ongoing basis to ensure a meaningful two-way dialogue. We are also increasingly seeing Indigenous communities more centrally involved in the successful development, construction

[42] Innovating to meet challenges: the projects ecosystem in Canada. Torys bulletin, available here.

[43] Say on Climate votes: will this global initiative take off? Torys Quarterly: Rethinking cross-border business, available here.

and operation of infrastructure projects. A key corollary to successful consultation and engagement can be ensuring that Indigenous peoples share in the economic benefits of infrastructure projects—what is referred to by some as economic reconciliation. There are various means by which this can be achieved, including equity participation and employment, training and procurement opportunities as well as the more traditional means of benefits and royalty agreements. These measures may serve to align interests in a manner that minimizes risk and accelerates project development on a path to successful completion and operation.[44]

Environmental Approvals

Recent changes to Canada's environmental regulatory landscape pose new challenges and opportunities for major projects. Under the *Impact Assessment Act*, the federal government assesses the impact of large projects on the environment, with a wide-ranging scope of focus that encompasses climate change, broad socio-economic benefits, and greater collaboration with stakeholders and Indigenous groups.[45] Early planning with a focus on ensuring appropriate consultation as well as rigour around identifying the positive impacts of a project (e.g., employment, innovation) will help keep projects on track from a regulatory perspective.

[44] Getting projects built during the pandemic: The continued importance of relationships with Indigenous peoples. Torys bulletin, available **here**.
[45] Getting projects built under Canada's new impact assessment regime. Torys Quarterly, Canadian sector report, available **here**.

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Real Estate and Technology

The impact of COVID-19 has caused great disruption in real estate, while also accelerating the use of technology across the industry. As people have begun re-imagining how physical spaces will look and operate in a post-pandemic era, technology has emerged as a key factor in this re-imagining process. Many large institutional landlords, property owners, investors and lenders are innovating to disrupt processes that are often antiquated, complex and slow; with a view to increasing revenues and reducing costs, improving customer service, and optimizing operations. With these changes, a host of legal and operational considerations have emerged.

In addition to the adoption of in-house technology, startups are increasingly being engaged across various sectors of commercial real estate—from investment, development and construction to asset and property management. Some examples of how technology is transforming the real estate industry are below.

Areas to Watch

Investment

VCs, traditional real estate investors and real estate corporations are increasingly investing in startups that are focused on changing the face of the property industry. The participation of real estate corporations (i.e., not professional investors) is a particularly noteworthy development as corporations are increasingly deciding to join startups in the march towards disruption. This increase in available capital will continue, powered by internal innovation, strategic partnerships, third-party investment and direct investment.

Construction Technology

While digital solutions in construction have been utilized for many years, the pandemic pushed the industry even more towards project management platforms, digital collaboration, robotics, and automated functions around building, shipping and delivery.

Smart building and city solutions will continue to rise as ESG considerations and efficiencies increase. Sensors, biometric technology, touchless solutions, and air quality monitoring will become standard features across commercial properties. There will also be continued growth around the “Internet of Things” (IoT) solutions to make residential properties smart; by using sensors to monitor things like utility usage, lighting, property access, landscaping and security. Smart systems and applications will aggregate a lot of valuable data which owners and operators can use to improve building performance and end-user experience. As regulators increasingly expect higher levels of accountability for those using and collecting this data, startups will be presented with further opportunities to provide data management, security and analysis to the real estate industry.

Property Search and Imagery

Technology touches on every point of a property search—from using drones to capture aerial images to utilizing big data to compile marketplaces that showcase insights on home value trends. Innovation in property viewing and imagery will see a continued prevalence of virtual tours, an increase in computer-aided design to showcase space configurations, and the optimization of AI to provide more refined search results.

Evaluating and Financing Properties

The evaluation and financing of properties has also gone digital, through online appraisals, lending technology, digital brokers, and transaction management/ due diligence. The integration of technology in these processes has allowed for a decrease in labour, cost and time and has provided less room for human error. The use of diligence platforms will continue to rise, with further adoption of software for lease abstraction, contract and estoppel reviews, and automation services to isolate key provisions.

Managing Assets and Properties

Many are utilizing proptech to reduce, automate, or in some cases, eliminate, routine and time-consuming tasks. This has led to the adoption of cloud-based platforms to

track workflow and processes. As the use of cloud-based services and the sharing of information rises, it presents concerns around data privacy and operational cybersecurity issues. Real estate companies, and those who invest in them, will further look to blockchain-based applications to manage the financial aspects of real estate transactions. There will also be a continued integration of backup systems and increased IT capacity to mitigate risk around cyberattacks.

Sensors, biometric technology, touchless solutions, and air quality monitoring will become *standard features* across commercial properties.

Office

The COVID-19 pandemic has forced office developers and landlords to reconceptualize space, including access, density and operational safety, such as indoor air quality levels and effectiveness of HVAC systems. The safety of these spaces, and how they are used, will continue to be impacted by how people now work, including the impact of a work-from-home and hybrid workforce. Many properties will be including co-working and adaptable office space, moveable floor plates, and smarter storage as ways to adapt to changing demands of the workforce from both a tenant and landlord perspective.

Housing

As with office space, working from home has also impacted the multifamily sector, creating several additional needs and changes, such as increased internet connectivity and the re-imagining of the layout and functionality of units, concierge services and delivery models.

Those in student housing are focused on how to safely bring students back using portfolio analytics, transformation of physical spaces, sensor-based security systems, and increased digital interaction between student residents and housing managers. Community housing, in particular, will see an increase in the use of smart locks, tenant smartphone applications and web portals.

Hospitality

As hotels and resorts re-open, they must navigate the balance between service and physical distancing requirements. This focus on safety standards and the overall guest experience will greatly increase sanitation, digital based service experiences, and air quality considerations. The addition of technological offerings will lead to ongoing and increased competition amongst hotels and resorts.

Healthcare

The healthcare sector has always presented unique real estate challenges—many of which have increased since the onset of the pandemic. These include new layout designs to provide physical distancing, and additional sanitation points in lab spaces, hospitals, long-term care and seniors' homes. The level of investment in startups serving these spaces signals a continual appetite for innovation in these areas, both in terms of space configuration and improved processes and efficiencies.

Industrial

In industrial, the trend for functional and high-tech space continued throughout the pandemic. There was an increased focus on supply chain logistics technology, with a continuing increased demand on industrial condos to help fulfill the demand for greater industrial space and innovative options. Many investors and end-users are now looking for smart warehousing—where distribution and fulfillment spaces can be customized to tenant needs. These factors, in addition to technological services that allow tenants to fulfil next day delivery demands, will continue to have a profound impact on lease negotiations and pricing in this space.

Doing Deals and Investing

From a legal and operational standpoint, there are so many factors for parties in this space to think about, including:

- data, privacy and confidentiality of information, including the collection and aggregation of data from owners and operators of smart buildings;
- in terms of digital security, the use of cloud-based services and the sharing of information raises operational cybersecurity issues since any entity that connects to an electronic or technical system can be subject to a cyber-attack if compromised;

- reliability and backup systems and plans; and
- regulation around accountability for those who are in charge of smart systems and the data that is being collected in connection with those systems.

Curbing Risk

There are a variety of ways to mitigate the risks involved with the considerations set out above, such as:

- increasing your organization's information technology capacity;
- obtaining cyber-risk insurance to compensate for business losses that may occur if there is a cyberattack;
- putting focus on reliability considerations, business continuity plans and backup systems—business continuity considerations are paramount, including the importance of having a business continuity plan in place and updating those plans regularly;
- ensuring regular and detailed and effective messaging and communication with team members is another factor—job roles may be changing, some functions may be automated or greatly reduced due to new efficiencies and it is important to let team members know the objectives behind these changes;
- thinking about your organization's staffing needs and think about what different skills sets, training and perspectives you may need to round out your prop tech team, including real estate teams having individuals with technology or software engineering backgrounds; and
- being mindful of employment law considerations when changing job titles, roles and position.

The overarching consideration is how to balance the need vs. cost and ensure adequate protection and safeguards without compromising or impeding the innovation itself. Make sure to engage your trust advisors, including your legal consultants, as you embark on embracing the new normal.

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Torys is a respected international business law firm with a reputation for quality, innovation and teamwork. Clients look to us for their largest and most complex transactions, as well as for ongoing matters in which strategic advice is key.