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TMT Predictions 2023:

Canadian connections

Supercharged semiconductors, live sports and streaming wars, virtual reality's evolution, tech's climate commitment, and more.

Doing more with less: that's the theme of the 2023 Deloitte Technology, Media & Telecommunications (TMT) Predictions report.

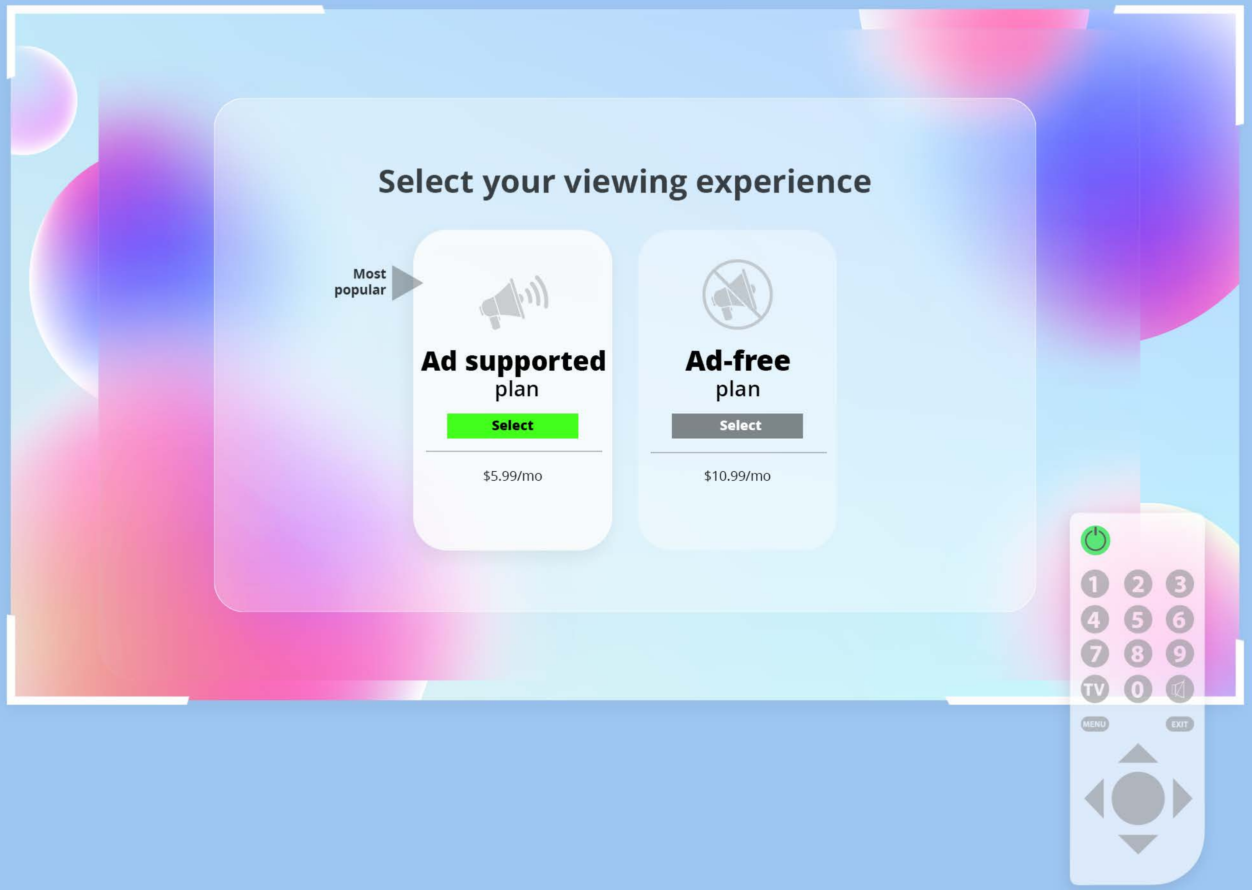
Innovation and exciting new technologies are taking a backseat as the world heads into a new year that has a subdued outlook: rising interest rates, falling TMT company valuations, high inflation, and low consumer confidence. These macroeconomic factors driving the TMT agenda for the next 12 months have everyone keeping an eye on the bottom line rather than aiming solely for the heady heights of invention and advancement.

But new things will, of course, keep happening. Of Deloitte's 15 prediction topics for the coming year, eight are especially relevant for Canadian consumers and enterprises. We'll explore those here, supplementing some of them with findings from our Digital Consumer Trends (DCT) survey of 2,000 Canadians conducted last summer.

The predictions are...

1

Everyone's watching: AVOD finds an increasingly receptive audience



Everyone's watching: AVOD finds an increasingly receptive audience

The appeal of ad-supported video on demand (AVOD) surges as price-conscious viewers become more willing to watch ads in exchange for discounted or free streaming video. Deloitte Global predicts that by the end of 2023, two-thirds of consumers in developed countries will use at least one AVOD service monthly, a **5%** increase over 2022. We also predict that all major subscription video on demand (SVOD) services in developed markets will have launched an ad-funded tier to complement ad-free options and slow the number of cost-conscious customers cancelling their subscriptions. By the end of 2024, half of these providers will also have launched a free ad-supported streaming TV (FAST) service.

The connection

According to our DCT survey,

71%

of Canadians have access to at least one subscription; the average resident has more than three.

Everyone's watching: AVOD finds an increasingly receptive audience

The connection continued

Critically, as SVOD services crack down on password-sharing, one-third of Canadians said they share an account with someone outside their household—and a whopping

50%

of those aged **18 to 34** do so.

Coupled with spending concerns, the crackdown on sharing may accelerate the pace at which Canadians are cancelling their SVOD services. More than **20%** have axed at least one SVOD service in the last 12 months, with almost a third of younger citizens (**18 to 34**) stopping a subscription.

Why are they cancelling?
Of those who have quit a service in the last past year,

28%

said it was too expensive, another **22%** said they're spending too much money on subscriptions overall, and another **21%** said they're cutting back on subscriptions because of rising costs in other areas.

Across the various SVOD services,

30-50%

of Canadians say they're either already considering cancelling or would consider it in the future.

Everyone's watching: AVOD finds an increasingly receptive audience

The connection continued

Streamers looking to hang on to customers need a solution. Offering discounted or free tiers that have ads may be one answer. When asked about a hypothetical new streaming video service, **35%** of Canadians who want to subscribe said they're willing to pay full price for the ad-free version, but a **quarter** were willing to watch **five minutes** of ads per hour in exchange for **50% off** the subscription price—and a full **40%** were willing to watch **10 minutes** ads per hour **if they didn't have to pay at all**.

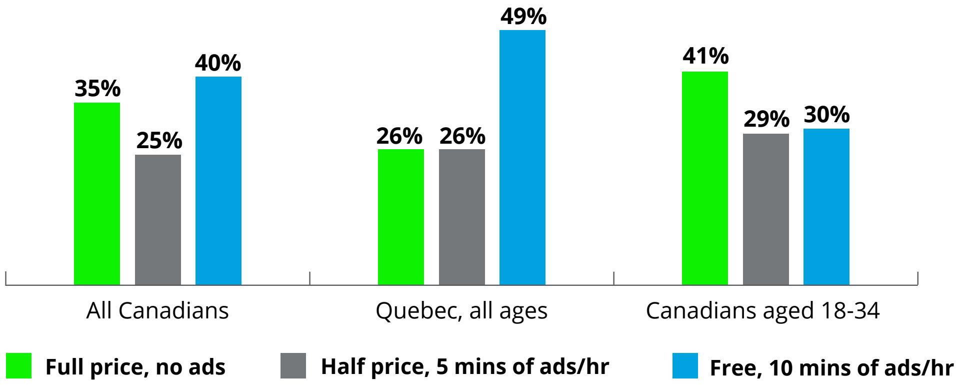
Younger Canadians were the most "adlergic" (a term we coined in a 2018 Predictions Canada report) to SVOD:

41%

of those aged **18 to 34** preferred the ad-free version. Quebeckers were the most ad-tolerant: almost half of those willing to subscribe preferred the free version, the one with the most ads.

It may take a few years, but we predict that although a solid third of Canadian streaming video subscribers stay on the ad-free version, the rest will migrate over time to AVOD and FAST versions.

For a hypothetical new streaming service, what pricing model would you prefer? (of those who would subscribe and had a preference)



Source: Deloitte Canada, 2023 Digital Consumer Trends survey (forthcoming in 2023)

2

Live sports: the next arena for the streaming wars

Live sports: the next arena for the streaming wars

Deloitte Global predicts that in 2023, streamers will spend more than **US$6 billion** on major sports rights in the largest global markets. Their spending is small but significant, representing almost **10%** of their annual spend on content and rights globally, underscoring the increasing interdependence between streamers and the largest sports leagues. Entertainment companies, regional sports networks, streaming providers, and tech companies are all looking to reach and retain audiences through sports offerings. This varied landscape could help to grow global audiences for a sport, but could also make it difficult for fans to access what they want to watch.

The connection

Canadians watch a lot of live sports but not much of it so far has been via streaming. Our 2022 DCT survey revealed that only **14%** of men and **6%** of women have access to a sports streaming service—that's just

10%

of all Canadians.

And are they satisfied enough with that service? **Three-quarters (74%)** of of those Canadians who manage a subscription to one well-known sports streaming service indicated they are unlikely to cancel in the future, but for all other sports streaming services, that number is only **53%**—more than 20 percentage points lower. Streaming services have got to give it their all if they want to keep their viewers and fans.

Live sports: the next arena for the streaming wars

The connection continued

One solution may be digital engagement, which can create new forms of partner activations and potentially retain customers. One example: the NFL has partnered with the Canadian company Enthusiast Gaming for *Tuesday Night Gaming* on YouTube.[1] Another solution may be offering a more personalized broadcast experience across multiple channels: imagine, for example, a multi-channel viewing experience where you have the traditional broadcast on the main channel (or linear TV), player commentary on stream two, and a betting-focused production on stream three. The integration of the betting-specific feed into the live broadcast is something to consider, given the recent change in Canadian legislation (Bill C-218 and single-event sports betting) and Ontario's establishment of a competitive and regulated iGaming market.

3

Virtual production gets real: bringing real-time visual effects onto the set

Virtual production gets real: bringing real-time visual effects onto the set

Virtual production tools (giant high-resolution monitors, for example) can increase flexibility, shorten production times, and bring real-time computer-generated imagery and visual effects onto real-life production sets. Deloitte Global predicts that the market for virtual production tools will grow to **US$2.2 billion** in 2023—up **20%** from an estimated US$1.8 billion in 2022. Growth is being driven by audience demand for TV and movies with rich visual effects, and studios and streamers are embracing these genres to fill production slates while lowering costs compared to older green screen techniques. Growth is also buoyed by production teams shifting to more virtual work, and top game engines helping them transform workflows.

The connection

Two

major factors make this prediction relevant for Canada.

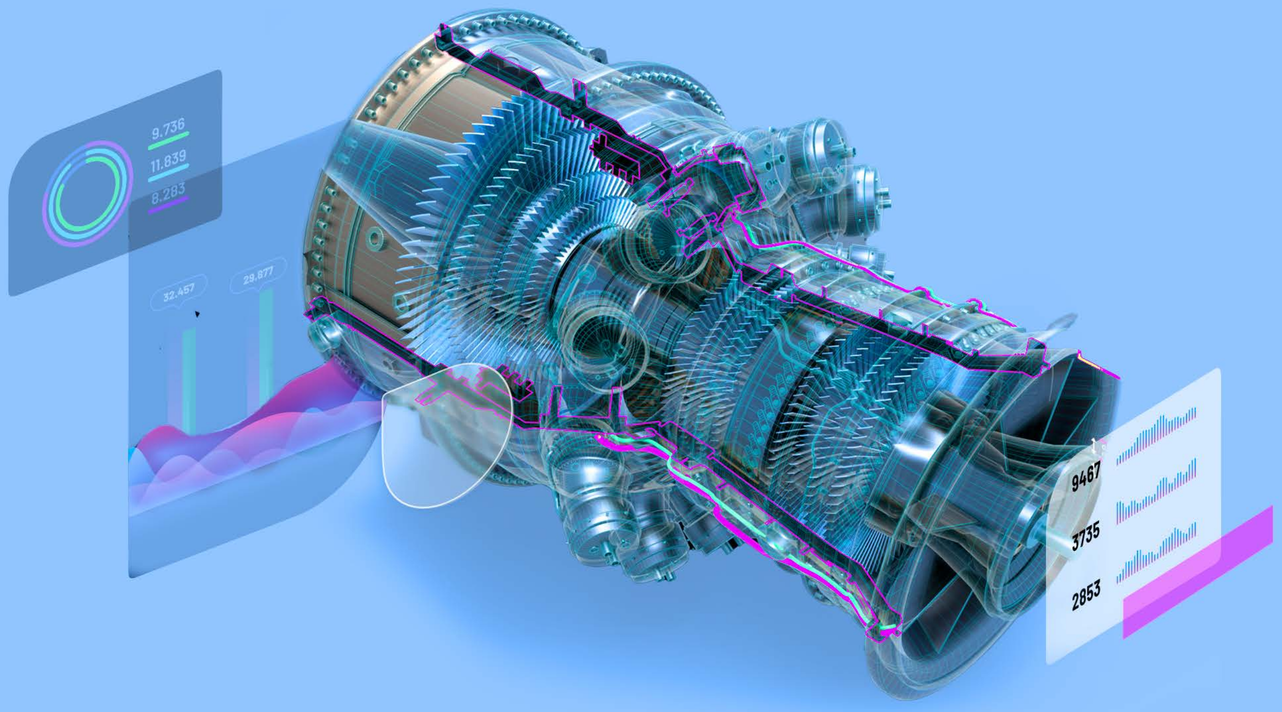
First: Hollywood North, eh? In 2021, the BC film and TV production industry was worth **$4.8 billion** in direct revenues[2] and Ontario's **$2.9 billion**,[3] while the industry in Quebec accounted for **$2.4 billion** in 2020.[4]

Second: Games on! In 2021, the Canadian video game industry was reported to have contributed an estimated **$5.5 billion** to the country's GDP.[5] Both Montreal and Vancouver are established centres of excellence, and gaming engines are some of the core technologies underpinning virtual production. Investing in training and upskilling, along with developing the technology to support a growing media and entertainment sector, will encourage more and better homegrown Canadian content. There are several virtual production studios across Canada, and they're already attracting US and domestic productions.[6]

4

Will VR go from niche to mainstream?

It may depend on compelling VR content



Will VR go from niche to mainstream? It may depend on compelling VR content

Deloitte Global predicts that the virtual reality (VR) market will generate **US$7 billion** in revenue globally in 2023, an impressive **50% increase** over 2022's estimated US$4.7 billion. The vast majority (**90%**) of that revenue (**US$6.3 billion**) will come from VR headset sales, of which 14 million units averaging US$450 each are expected to sell in 2023. VR content—mainly games, but also some enterprise applications—will see revenues of approximately **US$0.7 billion** in 2023. We predict that the installed base of actively used VR headsets will reach 22 million in 2023—almost 50% higher than that of mid-2022.

The connection

Canadian consumers aren't that different from those we see elsewhere: they're testing the waters, but not quite ready to take the plunge. According to our 2022 survey, only **6%** of Canadians have access to VR goggles (not counting the cardboard versions) and **14%** of those have used them within the last day, meaning that just

0.8%

of Canadians are regular VR users.

Meanwhile, some **20%** of Canadians have access to a smartwatch, of whom **65%** use them daily, meaning that

13%

of Canadians are regular smartwatch users. That's **16 times higher** than the VR gogglers.

Will VR go from niche to mainstream? It may depend on compelling VR content

The connection continued

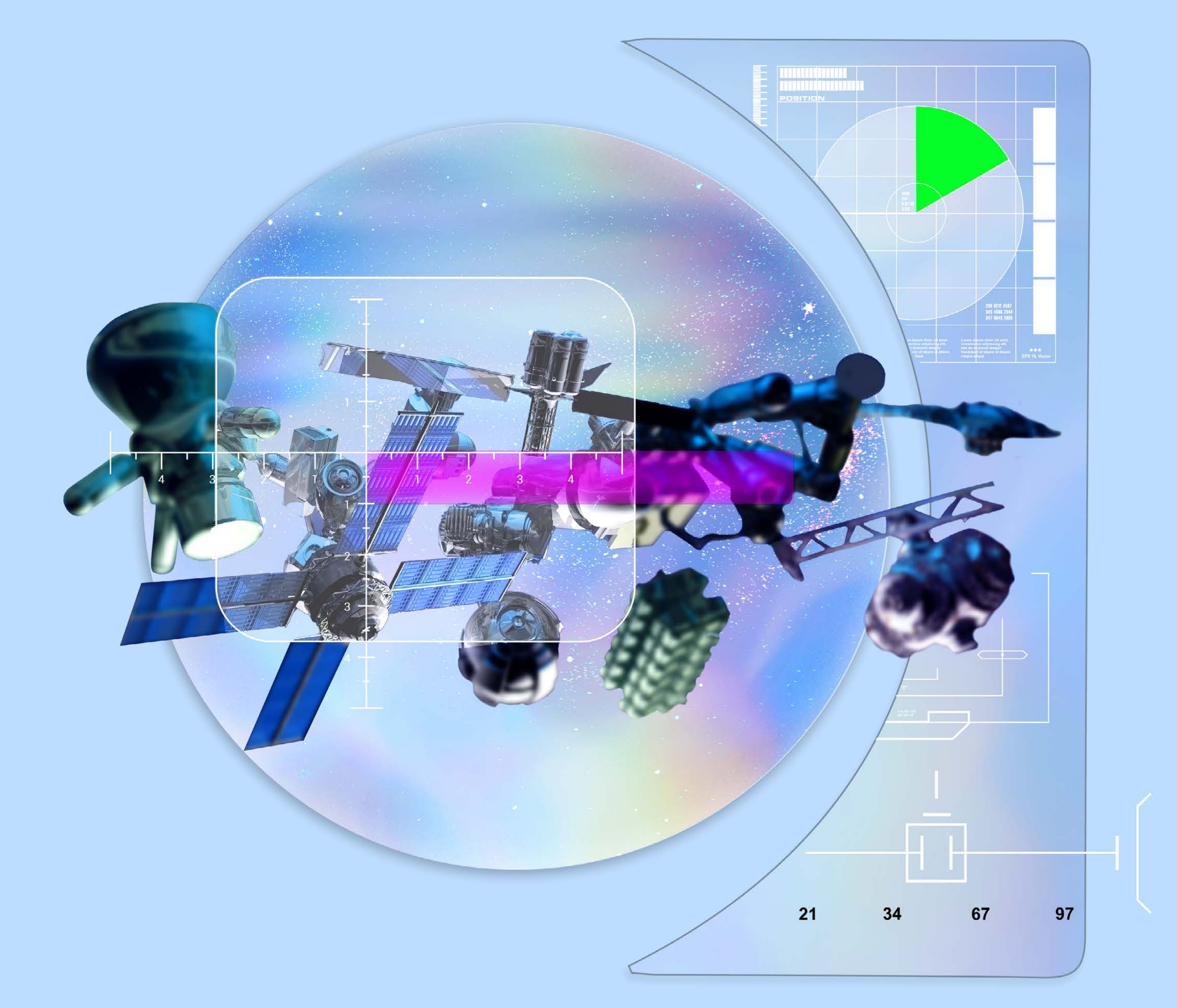
VR is still so niche because mass adoption has yet to take place. Facebook renaming itself to Meta and investing in the metaverse may have sparked some interest among consumers and enterprises, but we're still in the early stages. Some of the indifference is because it's still new technology; a significant **63%** said they're either not interested in VR or would prefer to interact with people in the real world.

And of those who do have access to the goggles, more than one Canadian in 10 cite lack of content, boring content, motion sickness, discomfort, preference for other devices, or lack of time for not using them more frequently. One factor that looks like it won't help increase interest in 2023 is price: VR headset manufacturers are raising prices, and some hotly anticipated potential new entrants are rumoured to have **C$1,500-plus price points**. That's not likely to drive adoption when **25%** who don't have a VR headset said they're already too expensive.

We're still waiting for that disruptive headset that will drive adoptability: something that's easy to wear, that we can incorporate into our daily lives, and helps us be productive—or at least amused.

5

Orbital congestion: broadband satellites will need to navigate a crowded sky



Orbital congestion: broadband satellites will need to navigate a crowded sky

Deloitte Global predicts that more than 5,000 broadband satellites will be in low-Earth orbit (LEO) by the end of 2023, providing high-speed internet to nearly a million subscribers in all parts of the planet. Longer term, seven to 10 networks could be in orbit by 2030, with a total of **40,000 to 50,000 satellites** serving more than 10 million people. A more crowded orbital environment raises the risk of collisions, requiring higher levels of cooperation and coordination. For this ecosystem to be viable in the long term, all involved should focus their attention and resources on protecting the commons of space.

The connection

Canadian companies have skin in the game: Ottawa's Telesat is proposing a Lightspeed constellation consisting of

188

satellites,[7] and Toronto's Kepler Communications already has **19 nanosatellites** in LEO.[8]

Orbital congestion: broadband satellites will need to navigate a crowded sky

The connection continued

A sustainable future isn't bound to Earth's surface. As we further invest in satellites and other space tech, we need to ensure we don't add to the thousands of pieces of debris already orbiting the planet by making sure satellites don't collide with each other or with that existing debris, which requires tracking everything in real time. Servicing satellites in orbit and removing space debris over time are opportunities for Canada to lead in. Companies such as MDA (offices in Ontario, Quebec, and British Columbia) are world leaders in satellite manufacturing that will likely be used,[9] while Calian (offices in Ontario and Saskatchewan) is a leader in the ground stations that are likely to be needed.[10]

6

That's just rad!

Radiation-hardened chips take space tech and nuclear energy to new heights

That's just rad! Radiation-hardened chips take space tech and nuclear energy to new heights

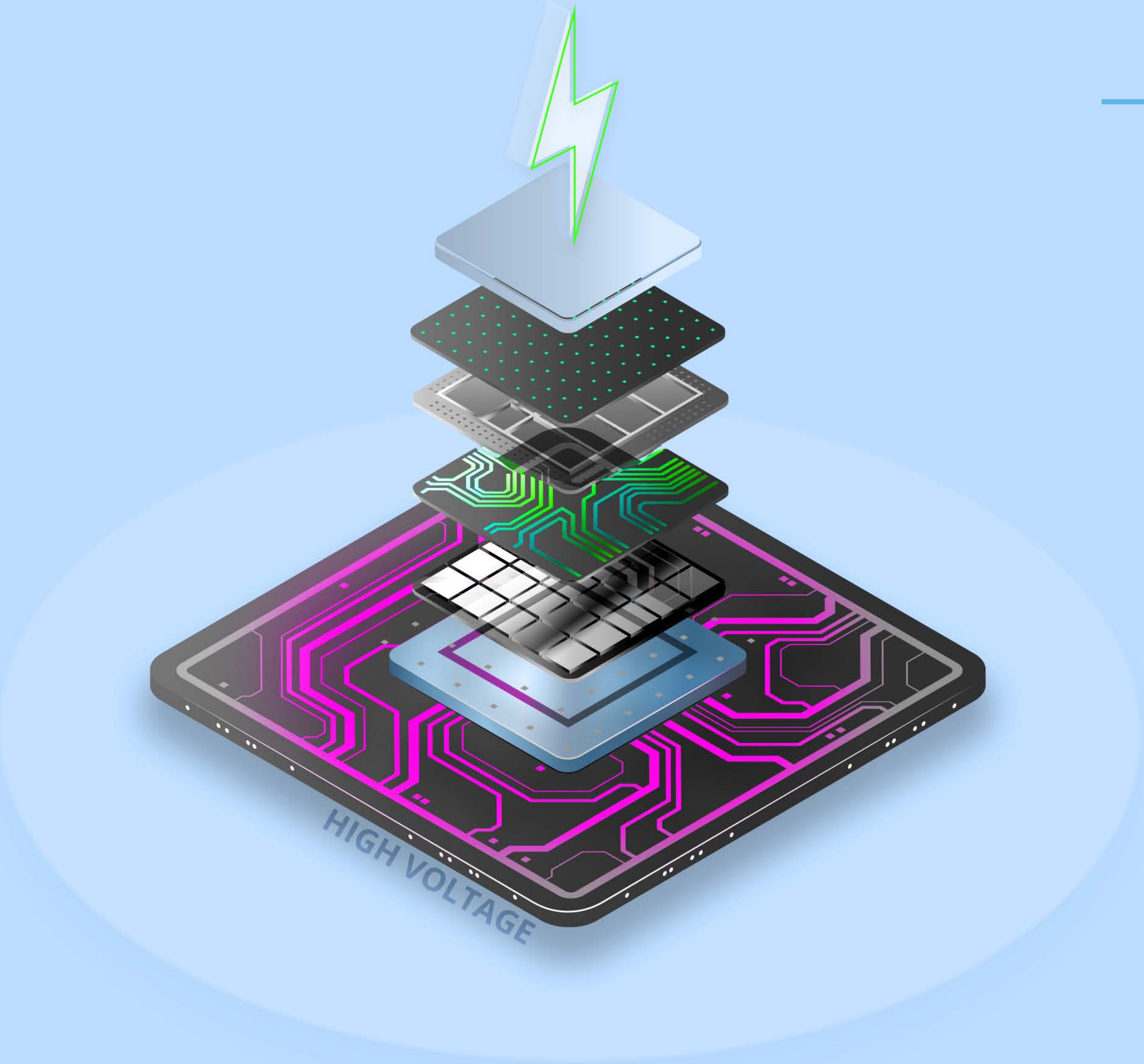
Deloitte Global predicts that the radiation-hardened electronics market will top **US$1.5 billion** in global sales in 2023. Ionizing radiation, either in space in medium or high orbits, or on Earth in nuclear reactors, is bad for chips. It can cause errors or degrade the chips over time. Because of this, before recent advancements in radiation hardening, chips in space were generations less powerful than found on even consumer devices. One way of making chips rad-hard is physical: this can rely on shielding, special silicon technologies, or gallium nitride (GaN) or silicon carbide (SiC) compound semis.

The connection

Canadian satellite and space companies (including Telesat, MDA, Calian, Kepler) will be interested in what new capabilities these powerful, rad-hard chips bring to their offerings. Space-based processors have in the past been older and less powerful. New chips could be game changers. Further, rad-hard chips could enable advances in nuclear energy—SNC-Lavalin can take note for its fission reactors[11]—for example, while Canada is the world's second-largest producer of uranium for nuclear reactors.[12] Any technology that makes reactors, especially new reactors, better, cheaper, and safer is a good thing for that industry. (Bonus fact: the world's largest uranium mine is located in northern Saskatchewan.)

7

Supercharged semiconductors: chips made of newer materials can handle the volts that would fry silicon chips



Supercharged semiconductors: chips made of newer materials can handle the volts that would fry silicon chips

Silicon is not well-suited for the higher voltages and power levels needed for battery electric vehicles (BEVs) or super-efficient consumer electronics chargers. Deloitte Global predicts that chips made of high-power semiconducting materials GaN and SiC *(see prediction 6)* will sell a combined **US$3.3 billion** in 2023, up almost **40%** from 2022. Growth is expected to accelerate to close to **60%** in 2024, with revenues of more than **US$5 billion**.

The connection

Canada has a fabless semiconductor company (it designs the chips but outsources fabrication), GaN Systems in Ottawa.[13] Meanwhile, the Canadian auto industry is also focused on expanding battery material mining, production, and electric vehicle production/assembly.

The industry's goal is to make over

400,000

BEVs in Ontario annually by 2030.[14] SiC power chips are smaller, can handle higher voltages, and are expected to dominate the inverter market for BEVs, potentially placing Canada in a pole position.

8

Tech's climate commitment: tech leaders are acting faster

Tech's climate commitment: tech leaders are acting faster

Achieving net-zero emissions is a priority for many organizations, and the technology industry is taking the imperative to heart. Deloitte Global predicts predict that in 2023, the tech industry will move faster on climate action than non-tech industries. According to a 2022 Deloitte CXO sustainability survey, tech companies are **13%** more likely than non-tech companies to target net-zero emissions by 2030. That's because tech leaders are both more concerned and more impacted by climate change than those in non-tech industries, therefore more likely to act.

The connection

Building on a strong policy framework and a national carbon pricing system, the Government of Canada has launched the **$15 billion Canada Growth Fund** to help attract private capital to its growing clean technology (cleantech) industry, and introduced new tax credits for cleantech worth up to

30%

of investment costs.

The provinces are mobilizing, including Alberta, which is in position to be a world-class technology and innovation hub, attracting global talent and investment and creating new jobs for the future economy.

Continued investment and support for Canadian cleantech startups and scale-ups allows the tech sector to lead in the deployment of climate solutions, while keeping the intellectual property in Canada.

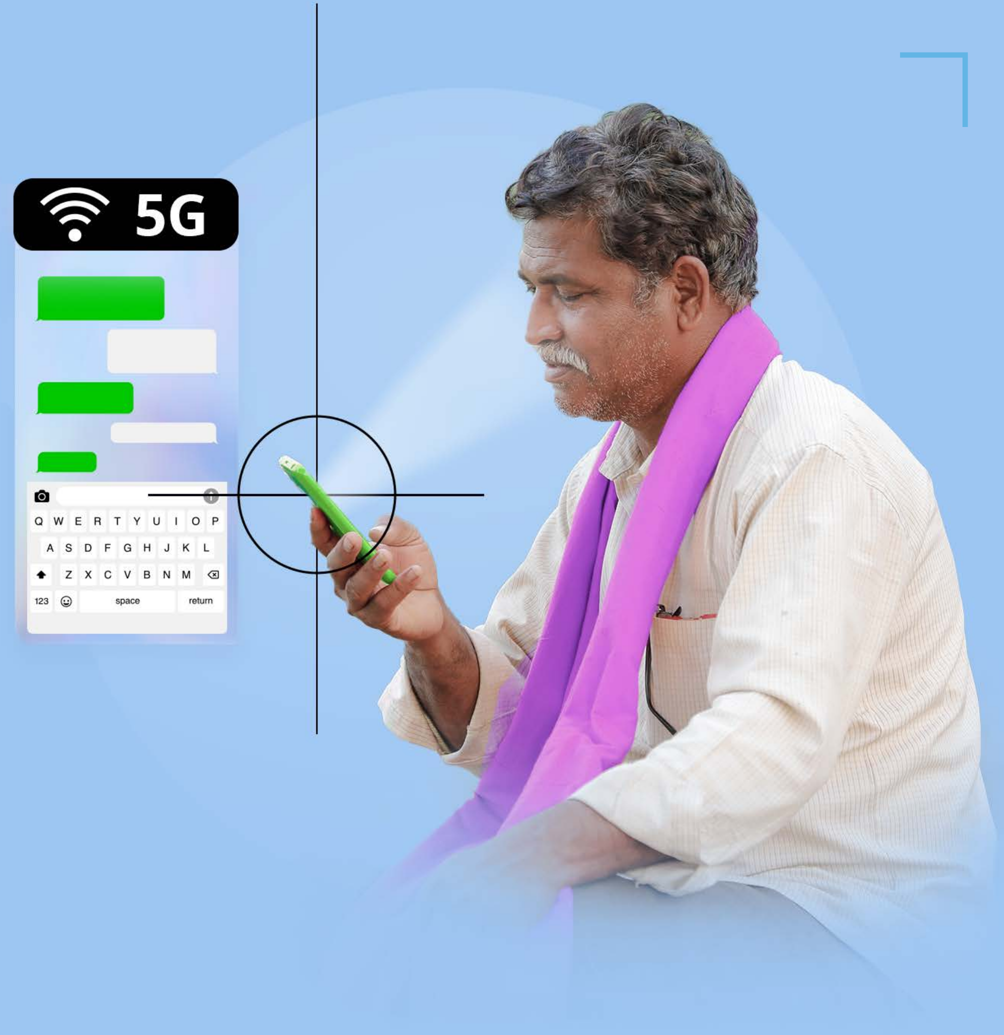
What else is happening around the world?

The rest of this year's TMT predictions will have an impact on a global scale and for certain countries, but we don't see them as having as much of an effect on Canada in the short term.

Accessible is possible:
introducing the US$99 5G smartphone

9

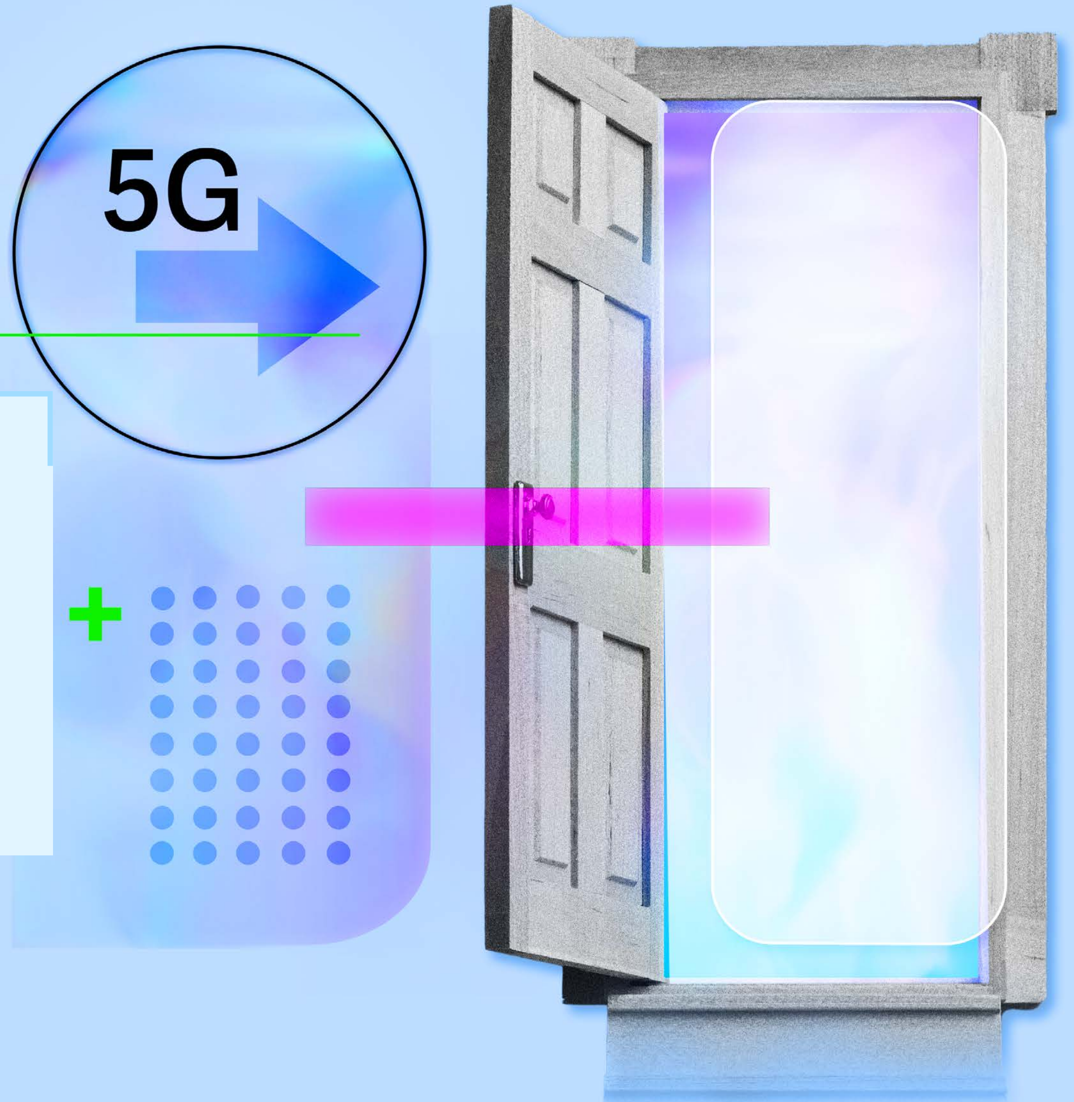
Well over a billion 5G phones have sold so far, but at prices that not everyone can afford. There's a market for smartphones **costing less than US$100** (about 100 million are sold each year) but until now, these have all been 3G and 4G. Deloitte analysis of smartphone component prices leads us to predict that the first sub-US$100 5G model will go on sale in 2023. Volumes will be low that year, but over time this will be important news in much of the developing world, bringing 5G to hundreds of millions more consumers.



5G's promised land finally arrives: 5G standalone networks can transform enterprise connectivity

10

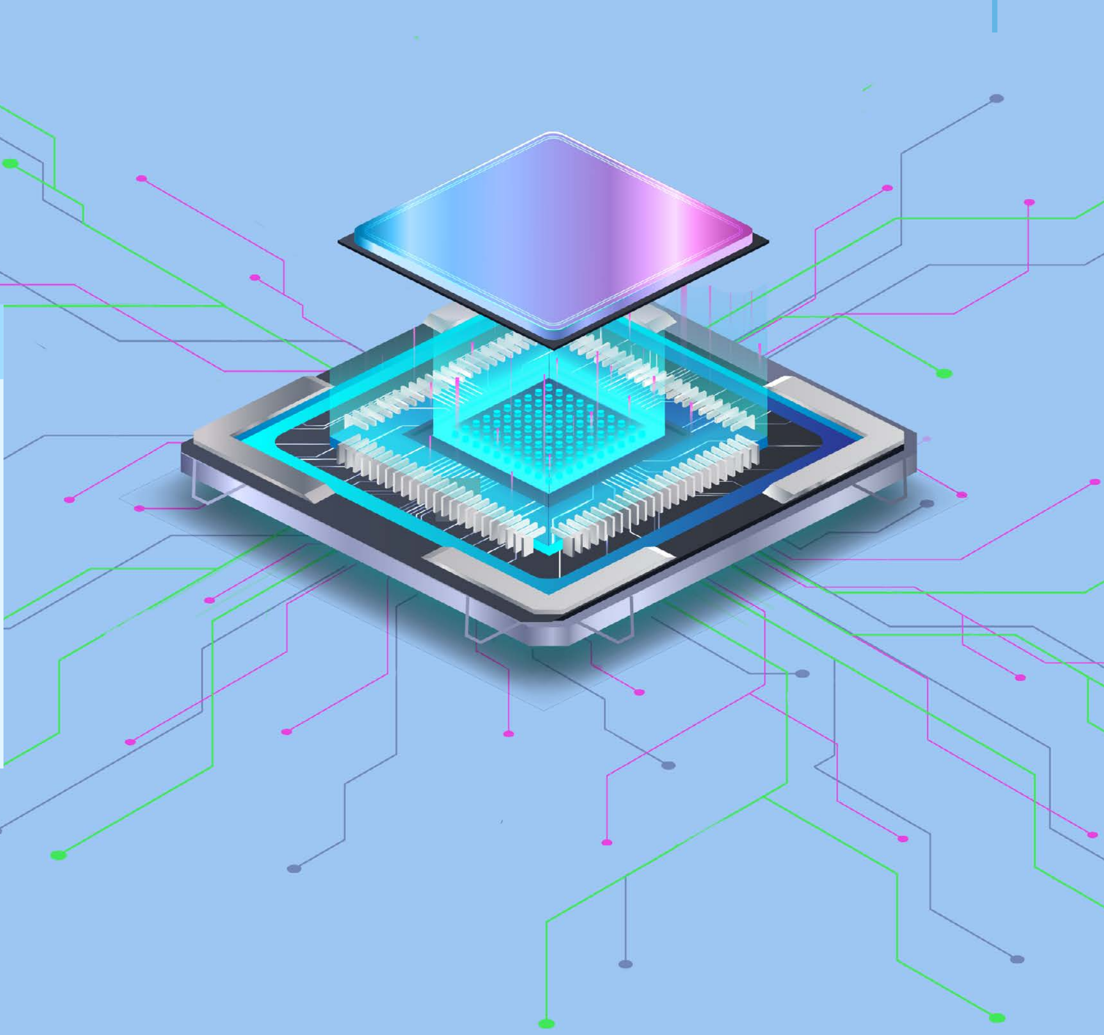
Most 5G wireless networks today are actually hybrids: 5G radio networks running on top of 4G/LTE cores. A standalone 5G network is 5G all the way through and, beyond higher speeds, enables new services for consumers. We predict the number of mobile network operators investing in 5G standalone networks—with trials, planned deployments, or actual rollouts—to **double from more than 100 operators** in 2022 to at least 200 by the end of 2023.



Using AI to design better chips faster, cheaper, and more efficiently

11

If you thought seeing AIs beat a human champion at chess and then Go was impressive, wait till you see them design chips, a problem thousands of times more complex. Deloitte Global predicts that chip companies will spend more than **US$300 million** in 2023 on external and internal AI chip design tools and that the number will grow at over **20%** annually to 2026. Although the tool dollar value is small, the chips designed with AI will be worth billions.



As seen in your feed: shopping goes social and stratospheric

12

Deloitte Global predicts that spending for goods and services on social media will surpass **US$1 trillion globally** in 2023, growing at **25%** annually, and with over two billion people worldwide shopping this way at least once. This contrasts with e-commerce sales, which are declining after the pandemic surge. In a 2022 Deloitte global survey, about half of Gen Zs and millennials said that social media influencers affect their buying decisions. That's double the level of Gen X respondents.

Battle for the enterprise edge: providers prepare to pounce on an emerging market

13

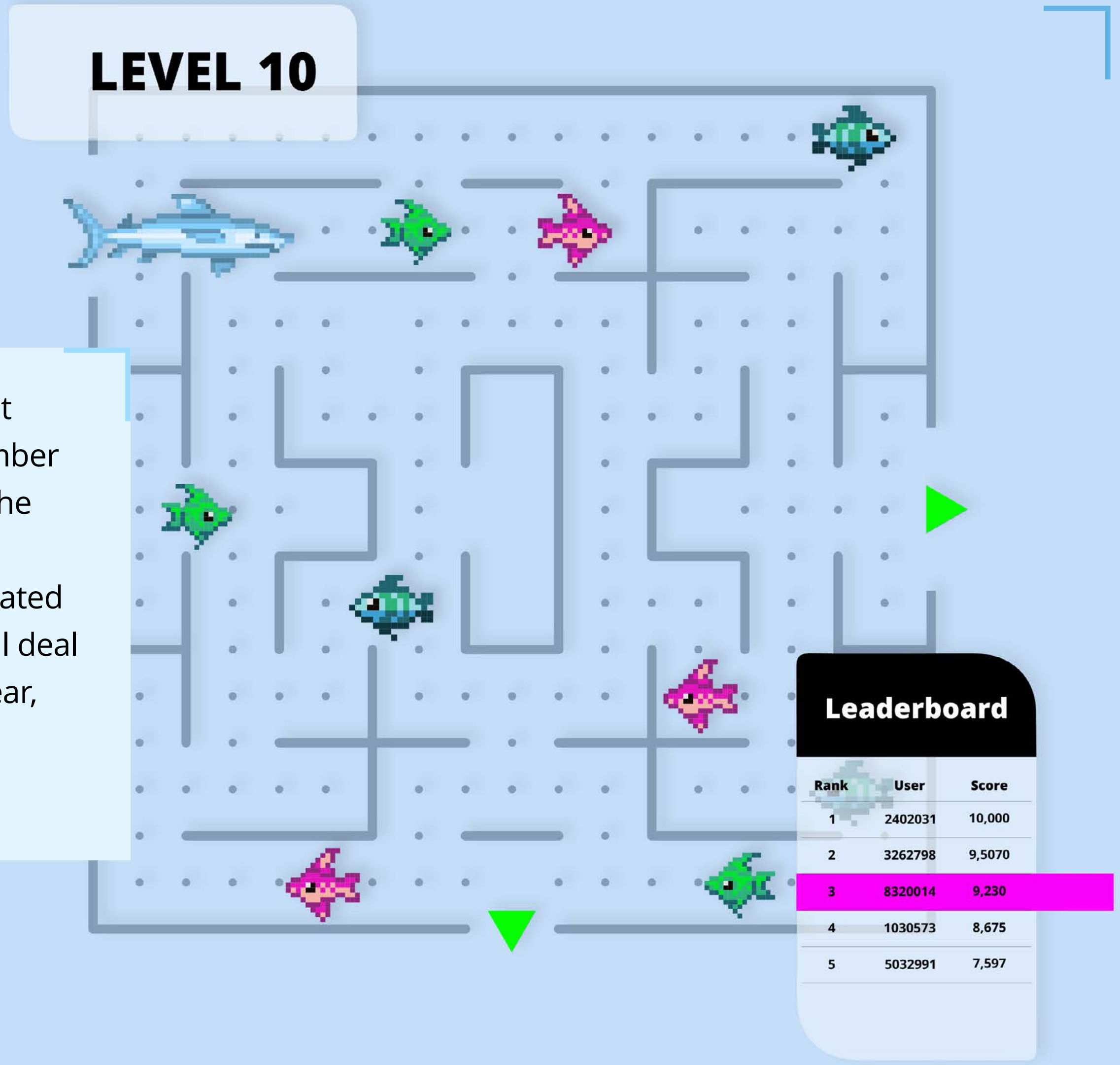
A lot of processing is done in the cloud, and a lot on end devices. In between lies the enterprise edge—and it's growing fast. We predict that the enterprise market for edge computing will grow at approximately **20%** in 2023, compared to 4% growth in spending on enterprise networking equipment and 6% on overall enterprise IT for the same year. Public cloud hyperscalers, communication service providers, infrastructure equipment manufacturers, management platform providers, and others are scrambling for a piece of the growing pie.

Let’s make a deal: gaming

M&A is growing with consolidation, portfolio plays, and game tech

14

Video game companies are thriving, and so is the market for buying and selling them. In 2022, deal flow—the number of gaming deals—accelerated. We predict that in 2023, the number of game company mergers and acquisitions will **increase by around 25%**, slightly slower than the estimated 30% quarterly growth in 2022. We further predict overall deal value in 2023 will likely decline considerably year over year, but only because of a few historically exceptional deals in 2022.



TMT divestitures make a comeback: 2023 deal values may bounce back strongly

15

Deloitte Global predicts that the total value of TMT divestitures in 2023 could expand by **25%** to **50%** year over year to range from **US$250** to **US$300 billion**, well above the US$244 billion average for the period 2016–2020. The increase in total value will likely come from a rise in both deal values and volumes as the business and investment environment improves and deal volume returns to historic levels.

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Looking for someone to speak to your team?

Contact

Duncan Stewart
Director of TMT Research
dunstewart@deloitte.ca
@dunstewart

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Endnotes

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