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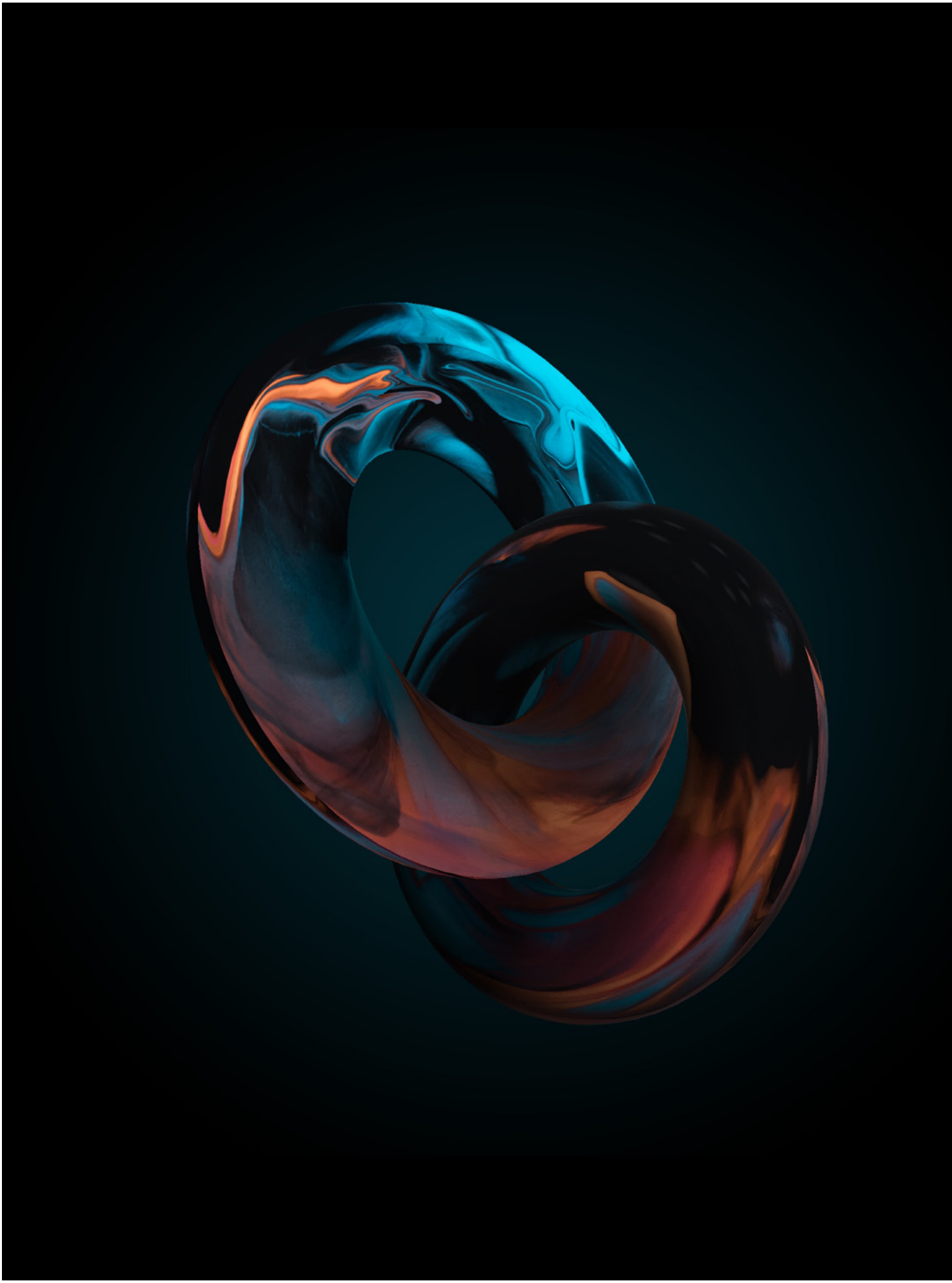
Future Forces 2023:

The megatrends shaping digital economy businesses

Outpacing change

Based on research by ECONOMIST IMPACT



Key takeaways

Ongoing **digitalisation** will be the paramount megatrend shaping the fortunes of digital economy businesses for the foreseeable future.

Technology companies' success in the next decade will be tied closely to their ability to leverage ongoing advances in artificial intelligence (AI), including generative AI.

The **net zero transition** is a double-edged sword for digital economy businesses, bringing significant challenges as well as myriad opportunities. Aside from having to boost their own energy efficiency, there is significant demand for smart, green technologies, especially in cities.

Changing consumer demographics will pose complex challenges for companies in this sector. These include meeting the accessibility demands of users with disabilities and catering to ageing consumers.

Leaders of **digital economy** businesses also expect to struggle with adapting to an evolving—and ageing—workforce. Securing and retaining talent will require great flexibility to accommodate increasingly diverse work regimes, benefits and other demands.

In the flagship report of this programme, *Future Forces 2023 Report: The megatrends shaping business over the next decade*[1], we explored the opportunities and challenges that six megatrends will present to businesses in the decade to come, presented in the table below.

In considering the megatrends' impacts across different sectors, digital economy businesses—technology producers and e-commerce companies—occupy a unique position, being major drivers of change in their own right as digital pacesetters and supporting other sectors in navigating the megatrends.

Judging by the survey's results, digital economy executives expect the megatrends to hold considerable growth opportunities for their businesses in the years ahead. Continued digitalisation will be a key source of that growth, as organisations across all sectors recognise gaps in technology capabilities and seek to embed digital technology ever more firmly in their foundations.[2] Another megatrend—worldwide efforts to reach net zero carbon emissions, including efforts by cities—will also do much to shape the fortunes of digital economy businesses.

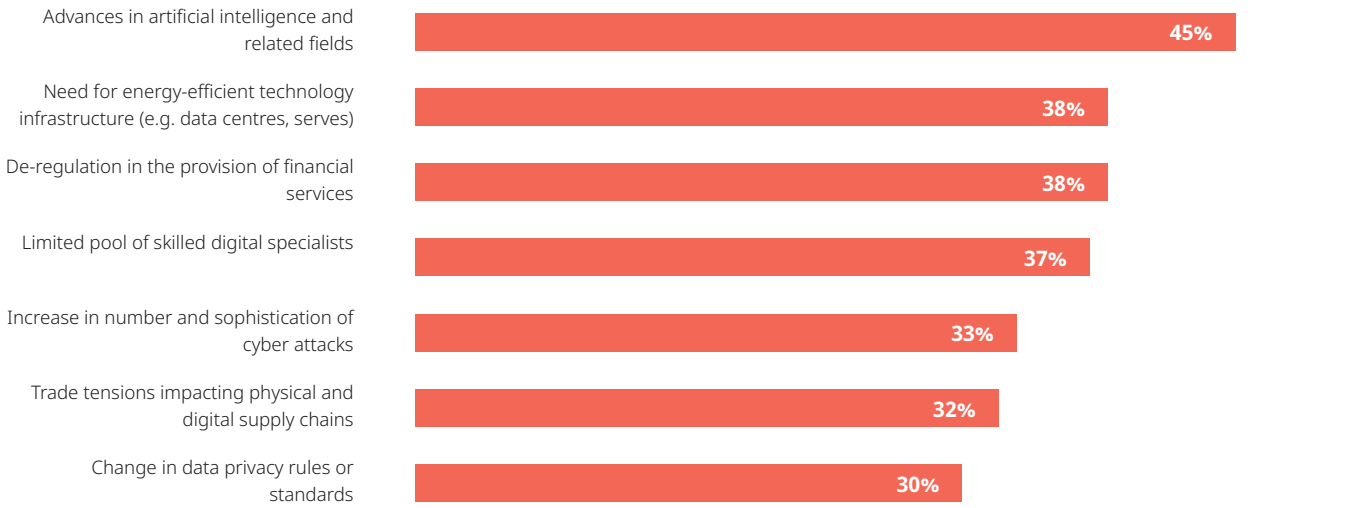
Megatrend	Implications for Business
Changing global dynamics	Organisations must develop their risk management capabilities and build resilience to adapt to the growing frequency of political, macroeconomic, public health and other shocks
Net zero transition	Organisations will need to decarbonise their operations and mitigate their climate risk
Digitalisation	Businesses will fall behind if they fail to derive greater value, efficiency and convenience from technological innovation and the digitalisation of their products and services
Demographic change	Remaining competitive requires businesses to adapt their products and services to meet the needs of diverse groups of customers, while accommodating workforce ageing, the younger generations' changing preferences, and a growing focus on social sustainability
Skills for the future	Amid workforce ageing and continued shortfalls of critical skills, organisations will need to prioritise reskilling and upskilling to fill the gaps
Resilient cities	When cities become denser, more congested and increasingly impacted by climate change, organisations can help them remain productive and able to cater to the community's diverse needs; cities must also be safe and affordable places for people to live and work

An acceleration of technology change

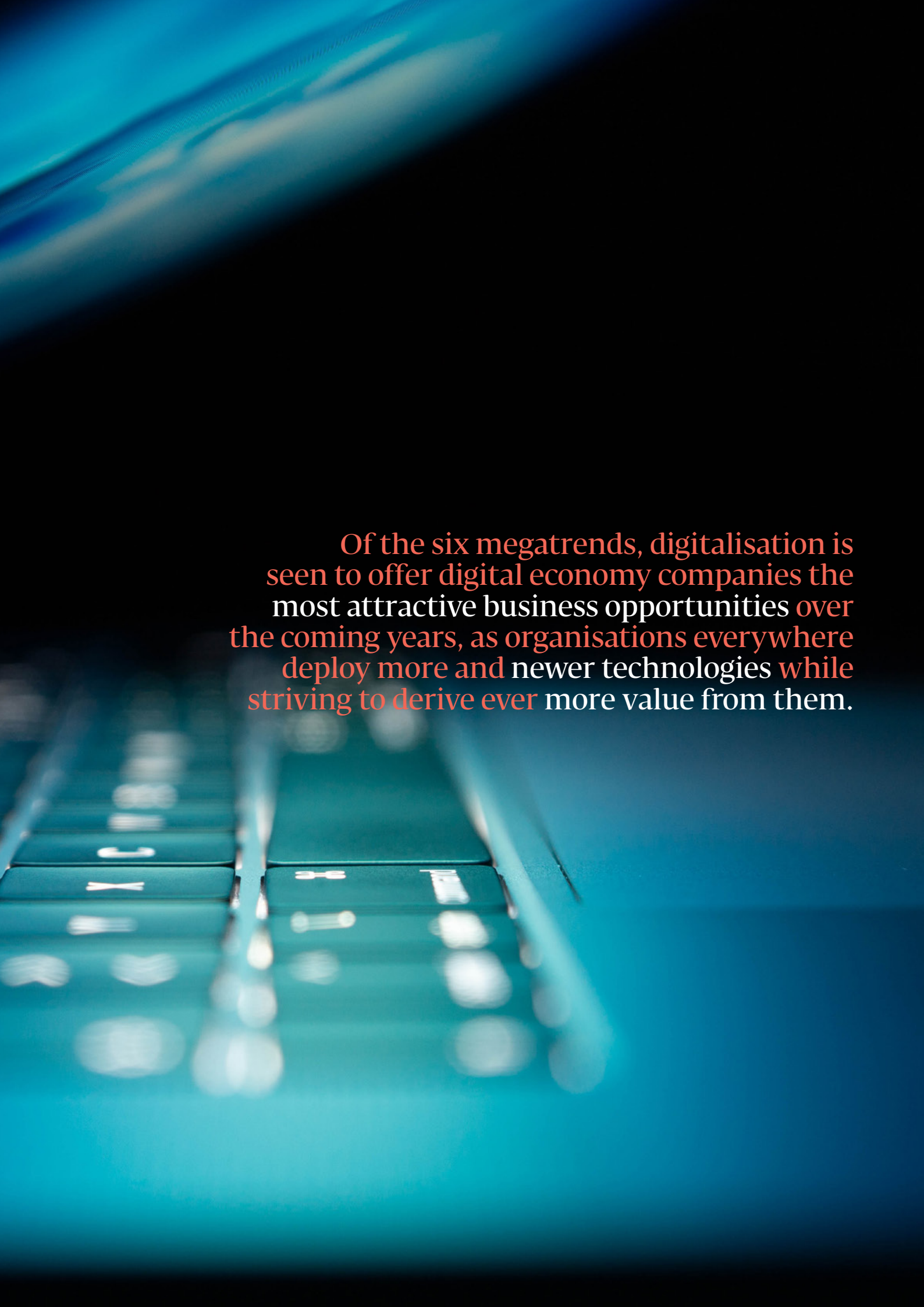
Of the six megatrends, digitalisation is seen to offer digital economy companies the most attractive business opportunities over the coming years, as organisations everywhere deploy more and newer technologies while striving to derive ever more value from them. Across sectors, 97% of the executives in the survey say their organisations' existing technology capabilities are not sufficient to capitalise on the opportunities that the megatrends offer. This, however, will present opportunities for digital economy companies, which will be called on to fill many of these existing and new gaps. Prominent among those is AI. Given a list of specific market developments that could impact their businesses over the next decade, digital economy respondents say advances in AI and related fields (for example, machine learning and natural language processing) are the most likely to do so.

Figure 1: AI's gathering force

Market developments likely to have the biggest impact on digital economy businesses over the next decade



Source: Economist Impact survey



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Accelerated technology change can pose difficulties to digital economy businesses. The potential risks arising from AI-related ethical hazards are one, as are the risks of falling afoul of data privacy rules.

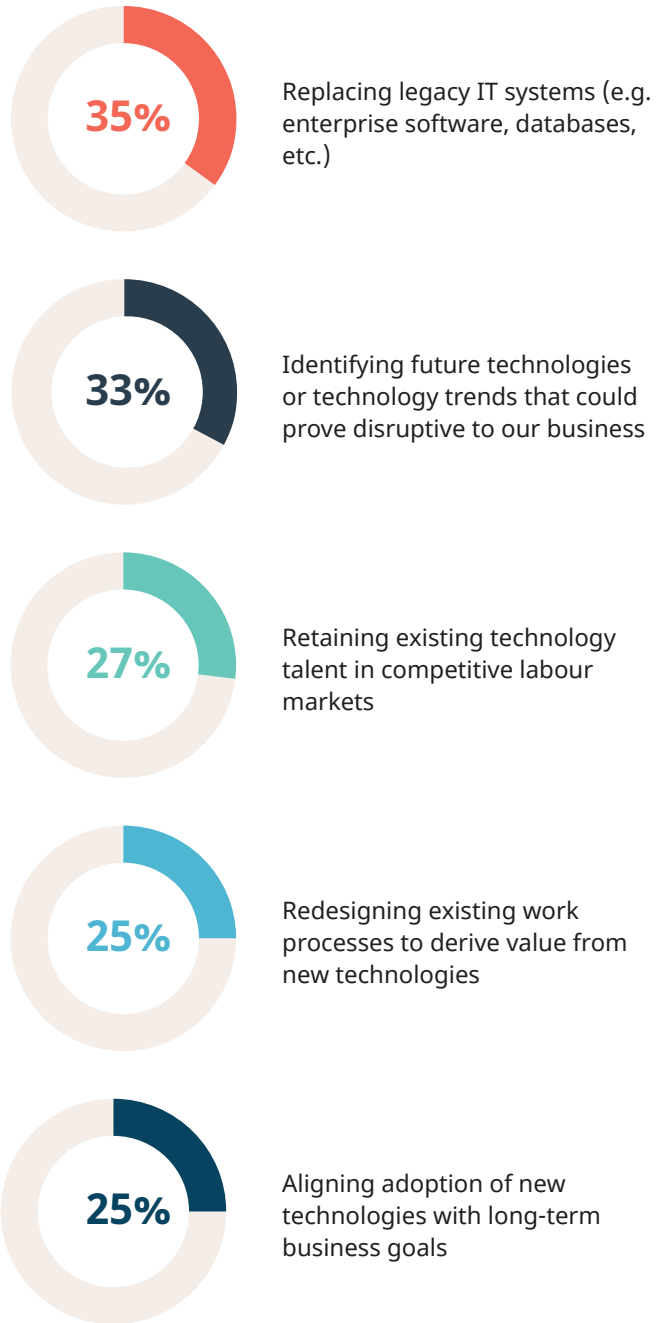
Illustrating such opportunities, recent reports indicate soaring demand for chips to support the large language models (LLMs) required to build generative AI capabilities.[3] "This is not just hype," says Sinan Aral, director of the MIT Initiative on the Digital Economy. "There's real innovation at work in the generative AI chatbots we're seeing today. They offer hints of exponential increases in LLM performance that I think are on the near horizon." Investments are already pouring into start-ups working in the area. NFX, a venture capital firm, counted over 500 generative-AI startups in 2022.[4]

At the same time, accelerated technology change can pose difficulties to digital economy businesses. The potential risks arising from AI-related ethical hazards are one, as are the risks of falling afoul of data privacy rules. As a result, organisations will be increasingly held accountable to new regulations aiming to put safeguards in place. For example, in 2022 alone, 37 AI-related bills were passed into law globally, as per Stanford University's 2023 AI Index.[5] These regulations focus on high-risk use-cases and discriminatory algorithms, among others.[6]

Another set of difficulties is internal: they may be purveyors of advanced digital solutions, but such companies are no strangers to problems with their own digitalisation. In particular, many industry respondents (35%) say their firms struggle to overcome problems posed by legacy IT systems, which pose a barrier to modernisation. This is especially problematic for larger and older firms, which rely on legacy applications, compared with companies at the forefront, especially in the tech sector, that are agile and can quickly adopt modern software architectures.[7] Technology leaders struggle with the same challenges as incumbents in other sectors, says Mr Aral. "Even industry innovators suffer from infrastructure inertia and mental inertia when it comes to legacy systems," he says. Maintaining legacy systems is also a costly endeavour, draining 60-80% of IT budgets on average.[8]

Figure 2: Digital difficulties

The toughest challenges that technology transformation and further digitalisation will pose to digital economy businesses



Source: Economist Impact survey

New horizons for technology: the net zero transition

When it comes to decarbonisation, the digital economy is a double-edged sword. "There is no skirting the reality", says Mr Aral, "that technology companies consume enormous amounts of energy to power their server farms and other infrastructure and are major emitters of carbon." Indeed, the surveyed digital economy executives expect the need for more energy efficient technology infrastructure (such as data centres and servers) to exert a heavy influence on their business in the coming years (Figure 1), and a third anticipate additional pressures to arise from climate-related reporting requirements.

But the net zero transition also figures prominently in those same executives' thinking about future growth opportunities. Chief among such opportunities are stimulating more energy-efficient ways of working, increasing their companies' attractiveness to both customers and talent by embracing net zero and developing new products and services, such as tools to monitor scope 3 emissions[9]. Digital economy firms are already looking for energy-efficient ways of working to reduce their 2.5% share of global greenhouse gas emissions.[10] Forty-two percent of digital economy respondents expect their firms' investments in energy-saving technologies to exert a major positive impact on their businesses in the decade to come. For example, crypto mining, an energy intensive activity, is increasingly being powered by renewable energy: as of 2022, 57% of energy for crypto mining came from renewable sources.[11]

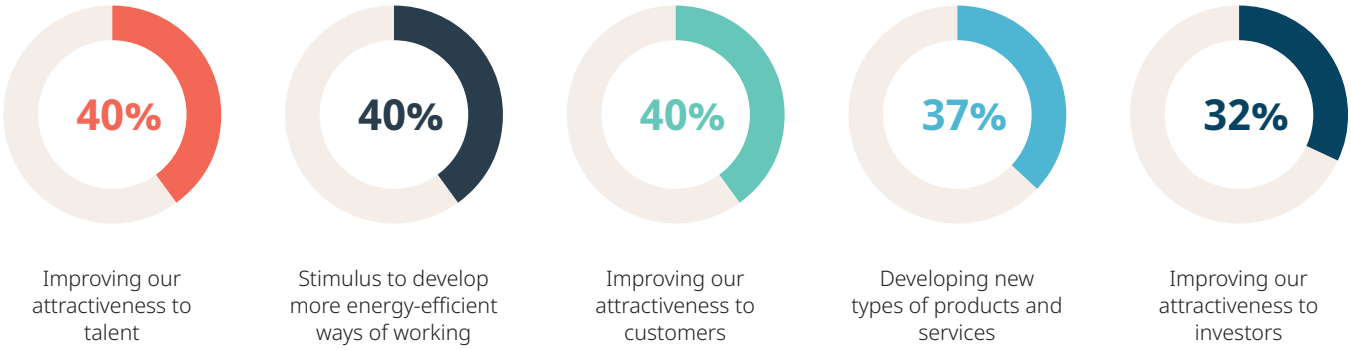
There is a strong impetus for digital economy businesses to not only combat their own rising energy costs and reduce direct emissions but to also support customers to measure, report on and reduce energy usage. According to Mr Aral, "the AI capabilities of such businesses could aid in the discovery and optimisation of new materials and new energy-processing technologies. And technology companies could eventually help others to manage their energy consumption more effectively." For example, data gathering technologies, like smart meters, enable data collection on energy use for further analysis through AI algorithms that can then offer consumption saving tips.[12]

In manufacturing, 3D printing improves energy efficiency by developing replaceable components quickly and preventing regular production shutdowns. It also allows precise material control due to the accurate nature of the technology when printing components, resulting in less material and energy waste.[13]

Moreover, cities will be the epicentre of many net zero transition opportunities: meeting urban demand for smart, green infrastructure, for example, is viewed as a major business opportunity by 42% of digital economy executives. Smart city spending—which includes incorporating a suite of frontier digital capabilities like AI, the Internet of Things (IoT) and cloud computing—is forecast to grow from US$221bn in 2019 to US$443bn in 2025, presenting large opportunities for digital economy businesses.[14]

Figure 3: Net zero ambitions

Digital economy respondents' views of the most attractive and realistic net zero opportunities for their businesses



Source: Economist Impact survey

Efforts to rein in carbon emissions will also affect the ability to attract and retain skilled talent. “Large parts of our workforce are demanding action by the organisation to reduce its carbon footprint,” says the head of digital at a large consumer products company interviewed for this article.

Demographics, the workforce and future skills

Judging by the survey, the implications of changing population demographics appear to be keeping executives at digital economy businesses up at night. For example, 45% of them see tough challenges ahead in meeting the accessibility demands of users with disabilities. Forty percent also expect challenges in tailoring their products and services to older customers as populations age. These concerns reflect the impacts of shifting demographics, and an increasing focus on digital inclusion by governments and regulators.

Population ageing also figures in respondents' concerns about their future workforce. Retaining older skilled talent, for example, will likely require more flexibility with regard to retirement age and benefits policies.

As they seek to secure the skills needed to ensure growth, digital economy companies will also need to find ways to accommodate new talent, such as a new generation of digital natives who are extremely comfortable with using new technologies and prefer hybrid work arrangements.[15] Businesses will need to reorganise existing processes and structures and meeting growing demands for work flexibility. It will also require efforts to align corporate values with those of the emerging workforce, in areas such as diversity and inclusion as well as commitments to decarbonise, as discussed in the previous section.

When asked about the types of skills their businesses will need most to meet their growth objectives, the respondents predominately cited cybersecurity (28%), cloud and IoT (27%), and emotional intelligence (25%). New policies on cybersecurity are increasingly assigning more responsibility to technology providers, for example, to bring only "secure-by-design" and "secure-by-default" digital products to market. This shift in policy stance will increase the pressure on technology providers to maintain and build cybersecurity capabilities, placing further demands on an already stretched and highly sought after cybersecurity workforce.[16]

Additionally, the inclusion of emotional intelligence in the top three skills underscores the importance of the human touch, which working with new technologies such as AI will require, as discussed in our main report.

Figure 4: Staying ahead in the competition for talent and skills

The toughest challenges digital economy businesses will face in securing the skills they will need over the next decade

1	Reorganising existing work processes and structures to accommodate new talent
2	Accommodating demands for work flexibility (eg, location, work hours) increasingly demanded by skilled employees and prospective new hires
3	Difficulty providing the types of non-salary benefits that skilled employees and prospective new hires are increasingly expecting

Source: Economist Impact survey

As businesses in this and other sectors address these challenges, they must also recognise that the types of skills sets they will need are likely to evolve. Mr Aral cites the example of data scientists: "Soon, the main skill these specialists require will not be coding but rather asking the right questions and then drawing conclusions and presenting them in ways that are useful for decision-makers. The data scientist role will shift to feature higher level skills than the role features today." According to a GitHub survey, 92% of the developers in the US are already using AI coding tools.[17]

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Summary

Digital economy businesses are arguably better placed to benefit from the impacts of the megatrends than those in any other sector.

Their evolving technology capabilities should keep them at the forefront of changes in business, and also help their customers to innovate. In particular, their success in meeting demand for AI-enabled applications, and using AI to build new capabilities of their own, should ensure ample opportunities for growth in the near and medium-term future. Governments and businesses will also look to digital economy businesses to provide solutions that build-in security and deliver a trustworthy online environment.

The same is true of their ability to provide smart, energy-saving and carbon-neutral technologies and solutions, particularly in cities, which could benefit organisations in all sectors.

But success is not guaranteed. Meeting the workforce and skills challenges facing this sector will require flexibility and creativity. As they develop ever more intelligent technologies, companies must give due consideration to the ethical and security issues they may give rise to or risk stakeholder backlash and regulatory intervention. And the sector must demonstrate that it can reduce its own carbon footprint. The challenges that the megatrends pose will evolve, and management of digital economy businesses must keep close sight of them.

Partner Perspective

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The impact of the trends on Digital Economy clients and how we are helping clients with these challenges and opportunities

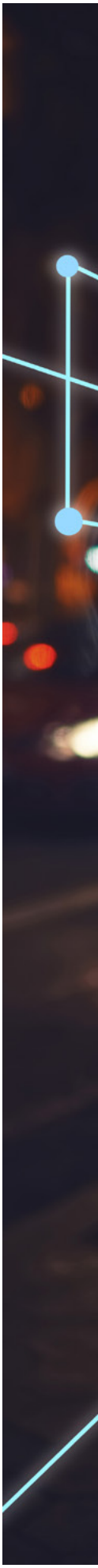
Technology and digitisation is front of mind for our clients. In fact, they are now at the core of most businesses and the economy in which all businesses operate is increasingly digital. Digital economy businesses need to understand the impact of megatrends on other sectors because they are increasingly relied upon to bring innovative solutions to the table.

The survey conducted for this programme (see *Future Forces Report 2023*) shows that executives in all sectors are well aware of coming challenges and opportunities, but are not confident that they have the right tools in place. Technology businesses are uniquely placed to innovate for the benefit of their own businesses, and leverage their success for the benefit of their customers – in particular, to help meet net zero ambitions.

Few of our clients would describe themselves as "bricks and mortar" businesses, even if that's where they started. We are helping our clients continue their transformation into data-driven technology businesses, optimising their traditional activities, and exploring adjacent and external opportunities.

Our clients create innovative solutions, working together to address challenges through strategic procurement, investment, partnership and acquisitions – more established clients are shoring up skills, technology and supply chains they will need by acting as anchor clients for investing in or acquiring small innovative players. Digitalisation presents unprecedented opportunities for deep collaboration and synergies.

Investment in technology must not only be impactful, but sustainable and adaptive in the longer term. We help our clients understand broader threats and opportunities than traditional legal risks–social licence, sustainability and corporate responsibility, as well as resilience and cybersecurity–all of which are essential for surviving and capitalising on the megatrends.



Endnotes

1 The megatrends are: the net zero transition, demographic change, digitalisation, skills for the future, resilient cities and changing global dynamics. See Future Forces 2023 Report: The megatrends shaping business over the next decade

2 This trend highlights the blurring of lines between traditional technology companies and all others, as digital increasingly underpins almost everything that organisations in any sector do.

3 See, for example, "Nvidia expects revenue boom as AI drives chip demand". Financial Times, May 24, 2023. https://www.ft.com/content/6b03dee3-ea79-48dd-b1eb-3df4f029d806

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5 "2023 State of AI in 14 Charts". HAI, April 3, 2023. https://hai.stanford.edu/news/2023-state-ai-14-charts

6 EIU analysis.

7 "Software Companies Still Need To Address Legacy Systems". Forbes, October 14, 2020. https://www.forbes.com/sites/forbestechcouncil/2020/10/14/software-companies-still-need-to-address-legacy-systems/?sh=6a9d6bb213be

8 Rashleigh, P. "The cost of legacy IT". Audacia, July 24, 2019. https://audacia.co.uk/blog/cost-of-legacy-systems

9 Scope 3 emissions are not produced by the company itself but are generated in their upstream and downstream activities.

10 "ICTs and Energy Efficiency". ITU. https://www.itu.int/en/action/environment-and-climate-change/Pages/energy_efficiency-BAK.aspx

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14 "Global smart cities spend to grow by 2025: Inside what it takes to build a smart city". Verdict, September 26, 2022. https://www.verdict.co.uk/global-smart-cities-spend-to-grow-by-2025-inside-what-it-takes-to-build-a-smart-city/

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