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# CIONET UK COMMUNITY PROGRAMME SUMMARIES

## The 2024 edition

Discussion Summary                    January 24

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Community Programme 2023 – A summary of events

# Introduction

A warm welcome to all CIONET UK members and business partners. We are pleased to present a concise summary of the six events that we held in the UK during 2023. We hope this summary of key findings will inspire you as you plan your business and technology strategies for 2024.

Last year marked the first time since the coronavirus pandemic that we have run a complete set of physical events. It was great to network again in-person at a range of world-class venues, including HMS Belfast, The Institute of Directors, and at Bleeding Heart, The Crypt of St Etheldreda's.

The 2023 programme covered our community's main topics of interest, which were confirmed by our UK Advisory Board of senior IT leaders. The six events were Emerging Technologies in January, Data Strategies in March, Sustainability in April, Leadership for a Digital World in June, Collaborating Across Boundaries in September, and Cyber Wars in November. Each event was attended by an audience of more than 100 digital leaders and the content was highly rated.

We were especially fortunate to hear keynote speeches from world-leading CIOs, such as Cindy Hoots of Astra Zeneca, Robbert Van Rutten of Shell, Breno Gentil of Heineken, Charlotte Baldwin of Costa Coffee, and Charlie Forte of the Ministry of Defence. We also received sponsorship from some of our key business partners, including EY, Infogain, CloudBees, Entelect, Hitachi Vantara and Thoughtworks.

Thanks must go to our CIONET UK team for their brilliant efforts across the year, including Isabel David, Candice Baptiste, and Fiona O'Keeffe for their planning and execution of the events, Mark Samuels and Sebastian Hartland for editing and designing our event reports, and Roger Camrass for hosting and moderating our events.

We hope you enjoy the following event summaries, and we're keen to hear any feedback on the content. We also look forward to welcoming you to our 2024 Community Programme, which will include events focused on Applying Generative AI (January), Developing Digital Leadership (March), New Business Models (May), Human-Centric Approaches to Transformation (September), and Organisational Agility (November).

As ever, we appreciate the support of our many CIONET UK community members. We will endeavour to be your trusted guide as we help you fulfil your digital leadership ambitions this year and long into the future.

**Sean Foley**

**CEO of CIONET UK**

# Data Sovereignty: Taking back control

Our digital footprint is now as precious as our physical identity and integrity. This high value is as true for us as individuals as it is for companies or even countries. Data and digital flows are the foundations of societies and the primary source of value in the digital economy.

However, the importance of this data also brings inherent risk. A handful of mega-powerful Big Tech companies have extracted, monopolised and monetised our data during the past two decades. More than 90% of data connected to Western individuals and organisations is hosted in the US. Geopolitical actors increasingly use digital technology and data as tools of power. Legal initiatives, such as the US CLOUD Act and the Chinese National Intelligence Law, give foreign powers unlimited access to our data.

European organisations and governments are responding to this power grab and re-evaluating their external exposure. They are launching digital sovereignty-related initiatives to maintain or acquire physical and digital control over strategic assets, including data, algorithms, and critical hardware and software.

With this context in mind, let's consider both the challenges that CIOs face and the practical steps they can take to protect and then exploit their data assets.



## Big data keeps getting bigger

Analysts anticipate there will be up to a trillion connected machines and devices in use globally within the coming decade. WhatsApp users, meanwhile, send 40 million messages every minute. This data-generation process across continues to intensify. Estimates suggest the volume of stored data globally could multiply by a factor of 23 times this decade.

The bad news is that most organisations have not been as successful as they had hoped in exploiting these data resources. Big data has been an important management topic for more than a decade, but its potential is yet to be fully realised.

Analysts estimate that up to

**80%** of large data programmes fail to meet their return-on-investment targets.

Data is often referred to as the 'new oil', yet it has little value unless it is refined to provide practical insights that help businesses improve their performance. A great deal of effort has been directed towards assembling data into formal structures, such as data lakes. Far less effort has been focused on the specific elements that are required to provide clear business outcomes from the collection of data.

Large data programmes often lack a clarity of purpose. The key challenge facing digital leaders is how to integrate data sources into workflows and applications. Managers must start mapping insights and outcomes to specific data sets if they want to generate successful results from big data programmes.

Hope comes via technological innovation. We are reaching an inflection point where high-quality tools that can tackle data issues are becoming widely available. The rapid growth in the use of generative artificial intelligence (AI) tools during the past year is illustrative of a new level of access to data-led technologies. At the same time, the continuing shift to the cloud enables vast amounts of data to be stored and processed.

Increased use of AI means there will be an explosion in data volumes during the next few years. However, storing this data requires an inordinate amount of power. We must collect and analyse data more intelligently to help avoid a data storage and sustainability crisis. Blockchain and AI could allow us to control data volumes more effectively, but this automation will have consequences for employment.

# Changing mindsets and exchanging insights

Technological innovation can help us to manage our data more effectively, yet it is only part of the story. There are significant cultural barriers to overcome. Employees can be unwilling to change how they operate, especially within large, mature organisations. Our research suggests there is often a "missing ingredient", where people suffer from a lack of imagination about how data can transform the business for the better.

The upshot of this cultural barrier is that changing mindsets is often far harder than upgrading technologies. CIOs must engage with their executive peers to close the gap between technological innovations and cultural norms. There are two main priorities for IT executives.

**1** Link discussions on data to specific outcomes, such as using insight to solve business problems. Focusing on this priority allows digital leaders to clarify what types of data are mission-critical and what tools will yield business value from data.

**2** Promote the practice of 'imagineering', which encourages people to step out of their current environments and use data to identify new opportunities, such as product developments, or improvements to customer journeys and back-office workflows.

Something to bear in mind is that the young, modern workforce has grown up using technology, unlike many executives, who were often brought up in a pre-digital native era. We must learn to accept that different generations have varying levels of digital skills. Senior managers must work with digital natives to combine their knowledge and experiences. Reverse-mentoring techniques can encourage inter-generational skills exchange.

Innovation in all its forms will also be crucial for CIOs looking to help the businesses make the most of its data. Our organisations must create safe spaces for staff to experiment and learn digital techniques. This space can be used to encourage innovation and create a learning culture that is conducive to our new data-rich environment.

What's clear is that the data obstacles our businesses face are complex, but they don't have to be unsurmountable. Conversations with our CIO community suggest there are practical steps we can take to manage our ever-increasing but commercially valuable data resources:

- Data management is a process that includes the collection, curation and contextualisation of information. There are no shortcuts.
- Businesses need an effective infrastructure for data storage and processing. Modern cloud platforms provide the capacity and tooling to address this challenge.
- Emerging developments, such as edge computing, can help to solve the data-overload problem.
- The democratisation of data is the best way to engage people within an organisation and to overcome cultural barriers.

## Conclusion:
## Getting to grips with data

Our CIO community recognises data management is in its infancy, although new techniques are emerging rapidly. As the amount of data we produce continues to grow, we believe CIOs should focus on the following areas as they build their data management strategies:

**1** Data is not valuable on its own. It needs to be refined. The comparison of data with oil is a meaningful one.

**2** Managers should start with specific business issues and then think about the data that is required to solve these challenges. The desired outcome is the best place to start.

**3** The most valuable element of data is the insight that it can deliver to humans. Experienced managers need to acquire data skills to generate insight.

**4** Intergenerational differences exist between employees in today's workforce. These differences need to be addressed if we are to move forwards successfully.

# Emerging technologies: Grasping the opportunities ahead

As business leaders, we recognise that just four technologies – cloud, mobility, social media, big data – have created immense structural changes to our social and working habits during the past two decades. These technologies have also fuelled the development of Big Tech, a small number of innovative and fast-moving digital behemoths that now dominate global equity markets. But if you think the scale of that transformation has been remarkable, it's our contention that 'you ain't seen nothing yet!'

We anticipate a second wave of technological advances during the coming decade that will create even more fundamental change. This wave will include the continued rise of quantum and edge computing, artificial intelligence (AI) and machine learning (ML), the Internet of Things, blockchain, 3D printing, and augmented and virtual reality.



## Understanding the scale of change

The second wave of emerging technologies has been prefaced by some crucial developments. The move to cloud offers businesses the flexibility and agility to respond to world events. Today, we can switch on compute capacity in seconds that would have taken months historically. Data analytics has become increasingly influential during the past decade, providing senior managers with crucial insights into research and business performance.

However, at the same time as these advances, it's also true to say that no sector is yet in a good place. A great deal of effort is now being directed to building solid data foundations for modern businesses that will enable powerful new tools, such as AI, to be deployed.

### Emerging technologies will support a radical change in business models

The world's most prominent digital leaders tell CIONET that AI is now at the cusp of full-scale commercialisation. However, these data-led advances also raise ethical questions that the CIO community must strive to answer. Trust is a critical factor in any discussion about AI. CIOs and their C-suite peers must think about how to build trust with external parties.

Digital leaders should help their organisations monitor and deploy emerging technologies, especially in their nascent phases. Every business should look to employ a carefully orchestrated process to monitor, apply and scale new technologies. Identify potential new techniques that can be incorporated into your enterprise architecture. Use these potential solutions to deal with ongoing business problems or as routes to new opportunities.

Looking beyond the two-to-five-year timeframe, our research suggests immersive technologies will play a transformational role. We see a new era emerging, where the fast-developing capabilities of augmented and virtual reality could enable us to be in two places at once. This blend of physical and virtual environments would be a game-changer for business and society.

### The role of CIOs in harnessing the power of emerging technologies

The ever-expanding pipeline of technologies means now is the perfect time to innovate. In this fast-changing environment, CIOs must be more entrepreneurial. We need to recognise that technology has become the business and digital leaders stand at the forefront of change.

One of our obligations as CIOs is to ensure the C-suite is fully informed about technological possibilities. Many line-of-business executives have risen through the ranks without sufficient exposure to technology. This is an area where we can make a big difference; mentorship must be a key component of our roles as digital leaders.

# Welcome to the Intelligent Era

We are entering a new Intelligent Era of interconnected devices. This machine-to-machine network of more than one trillion intelligent devices will be capable of predicting events and taking action.

In 2012, we generated **1** zettabyte of data annually.

By 2025, this total is likely to exceed **175** zettabytes due to an explosion in the number of intelligent devices.

This data explosion means we will need new tools to exploit our information resources.

## Improving risk management and operational resilience

Think about the supply chain. The uninterrupted supply of goods and services is now simply table stakes for successful supply chain management. Delivering this minimum acceptable offering requires real-time oversite of the complex ecosystems that comprise modern physical and digital supply chains. Our research suggests pioneering developments in AI and ML will mean we could potentially engineer self-healing supply chains within a few years.

However, the rise of emerging technologies also brings challenges. The ever-growing rise in connectivity means potential attack surfaces continue to grow, especially across cloud-based services. The monitoring of cyber activity is a complex and mundane task. The challenging and repetitive nature of this work has led to an exodus of cyber workers in recent years. Yet emerging technologies can also provide answers. AI could help to automate some of the repetitive tasks of cybersecurity, leaving staff to focus on creative, value-adding activities.

As well as high-profile AI technologies, such as generative AI services, the rise of quantum computing presents a challenge and an opportunity. While quantum will help us to protect future information assets, the technology could also be used to break modern encryption standards. The continued rise of intellectual property theft by bad actors means data protection will continue to be a big concern for commerce and government.

## An expanded role for the CIO

The CIO should act as the orchestrator of tomorrow's complex ecosystems. There are several dimensions to this expanded role, including protecting customer and employee privacy in the emerging era of AI. The EU is already introducing The AI Act to help regulate the use of new and powerful technologies, such as ML.

While only 3% of CIOs occupied board positions in 2003, the figure today is close to 40%. CIOs will continue to move away from back-office responsibilities and towards front-line activities, and then beyond into the external environment. CIOs must be curious and entrepreneurial in their day-to-day tasks. In the future, digital leaders will spend more of their time informing the rest of the C-suite about technology and business developments.
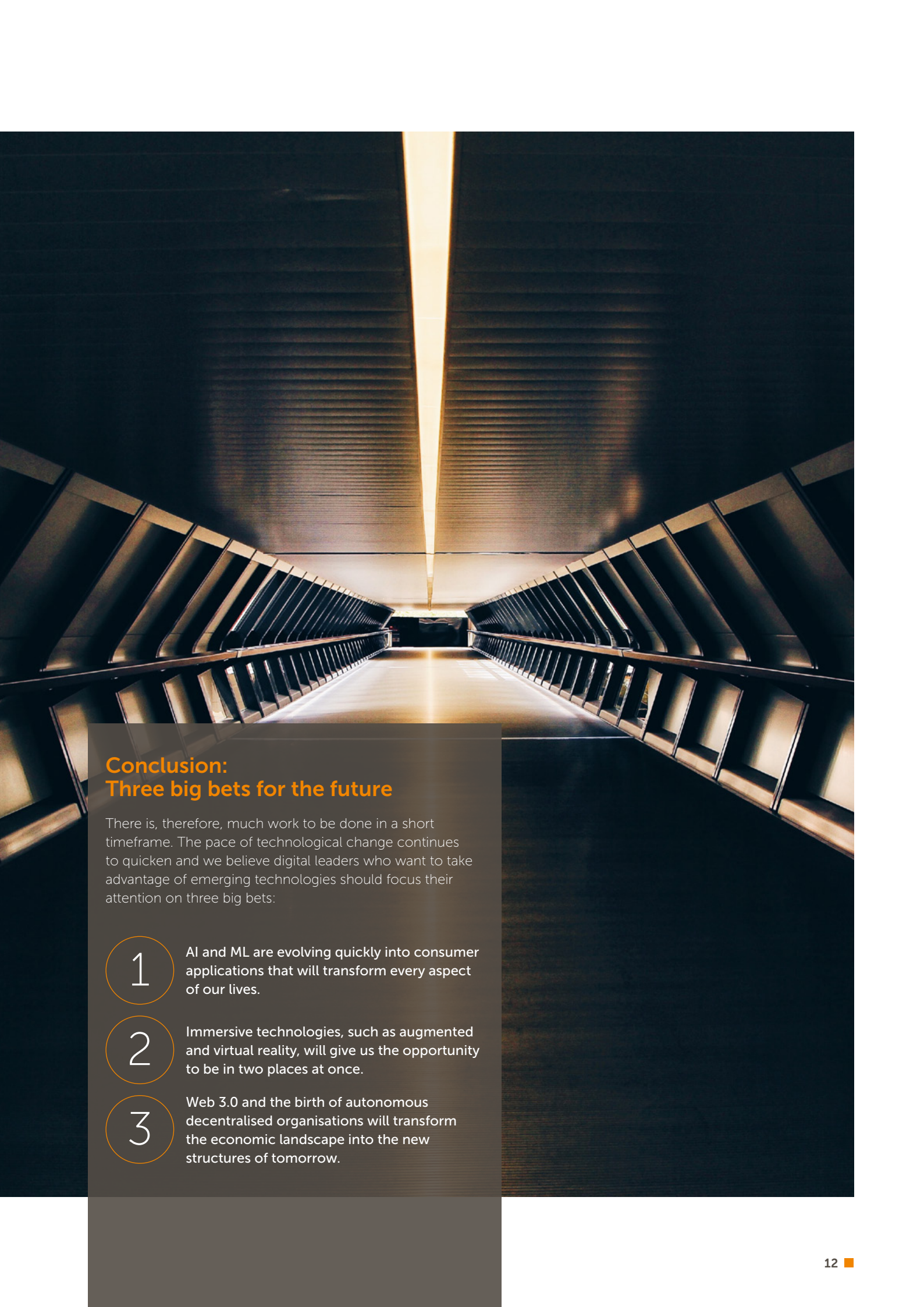
## Conclusion:
## Three big bets for the future

There is, therefore, much work to be done in a short timeframe. The pace of technological change continues to quicken and we believe digital leaders who want to take advantage of emerging technologies should focus their attention on three big bets:

**1** AI and ML are evolving quickly into consumer applications that will transform every aspect of our lives.

**2** Immersive technologies, such as augmented and virtual reality, will give us the opportunity to be in two places at once.

**3** Web 3.0 and the birth of autonomous decentralised organisations will transform the economic landscape into the new structures of tomorrow.

# Leadership: How to lead as a CIO in the digital world

The pace of change across the technology landscape continues to quicken. Innovation comes in many forms, whether it's the adoption of the Internet of Things (IoT), the implementation of immersive technologies or the exploitation of generative artificial intelligence (AI).

CIOs will be expected to help their organisations shape a business strategy that places these innovations front and centre. Yet as they're executing innovation, CIOs will still be required to ensure day-to-day IT systems are secure, resilient and operational. We believe this dual role of innovation and operation calls for new digital leadership capabilities.

## Defining the modern CIO

The key role of the modern CIO is to focus on business and people leadership rather than being limited to technical responsibilities. Success is about bridging the gap between the business operating model and the power of technology. Technology should be used to help reimagine the business, providing greater efficiencies and accelerated revenue growth.

### Building on the foundations for change

The good news for CIOs is they have ample experience to deliver change. CIOs operate across the organisation, which allows them to identify and remove functional silos that impede performance. IT extends to every business area, from product development and manufacturing to supply chain and customer service.

By using process and system thinking, CIOs can identify blockages and implement workarounds. Process automation, for example, can be applied to create an organisation that is agile and responsive to the marketplace. Master Chefs have also adopted public cloud platforms to replace on-premises hardware.



Yet more fundamental change is afoot and we believe the opportunity to deploy AI and other emerging technologies will be a game-changer. Investing in modern technology can be expensive, but modern platforms are crucial for sustainable, long-term growth. All CIOs must argue the case for modernising core infrastructure and re-platforming applications.

### Fulfilling your leadership role successfully

Our research suggests several guiding principles will help you succeed as a digital leader. First, inform your IT and business organisation about the purpose of technology-driven growth and innovation. Until people buy into your end goal, transformation will often fail to deliver the promised results. Successful digital leaders are outstanding storytellers.

Second, trust and empower your teams and then hold people accountable for their actions. In an agile organisation, people operate in semi-autonomous teams. The CIO sets direction and gives each team a high level of autonomy. As organisations become more agile and adaptive, the teams that work on projects spread beyond IT and encompass every business function. Empowerment then becomes the mantra of an effective, modern organisation.

As a CIO, you also must believe in yourself and the leadership tasks you undertake. CIO is a demanding role and there's many distractions that can interfere with your day job. These diversions can create noise that disrupts you from your purpose. Great leaders have the self-confidence to overcome obstacles that can deflect them from their chosen path.

Finally, be open and learn from others. It's crucial you find strong mentors throughout your career. CIOs should also pass on the things they learn. Constant feedback is essential in helping you and your teams to develop professionally.

# How to play a strategic role in your organisation

The strategies that have supported heritage companies for decades and sometimes centuries will no longer work. Business strategies in the digital world should reach beyond sector boundaries and engage various ecosystem partners in all industries to deliver new value.

## Influencing the board

While the creation of these business strategies in a digital world is a far from straightforward task, board members in all sectors are aware of how technology helped the business cope during the coronavirus pandemic. Now, in the post-COVID era, the board has a heightened interest in how digitalisation can be used to help the business respond to new demands.

Digital leaders must provide a convincing case to boards to modernise core infrastructures and applications. Making this case isn't easy in a cost-constrained environment. However, a strong case is a necessary first step in a longer journey towards the delivery of an agile and responsive digital business structure.

Clarity of purpose is key for CIOs who want to influence their board members. Think about conducting short one- or two-day experiments, which deliver 'clickable' prototypes that demonstrate the benefits of digitalisation. If the board shows interest, the next step is to find a paying client to take the idea forwards.

Digital leaders should focus their attention on a few individuals on the board who can act as influencers in selling technology-led proposals. That concentration will be nothing new to smart CIOs, who now spend most of their time on business rather than technical matters. Business-savvy CIOs will expand their responsibilities into areas such as transformation, which they will often fulfil alongside their CIO roles.

## Delivering business transformation

Despite the gains of the past few years, long-standing perceptions of CIOs as techies continue to persist in some organisations. In an ideal world, CIOs who prove their abilities are given the opportunity to rise to the upper echelons of the business. However, the road to a CEO position is frequently blocked by the CFO, who is seen as a safe pair of hands.

In some ways, CIOs don't help themselves. Digital leadership comes in many forms and there is growing confusion over the range of titles, which includes CIO, CDO, CTO, CISO, and more. This lack of consistency complicates the role and hinders prospects for promotion. CIOs must demystify these titles to acquire the authority to transform their organisations.

For CIOs who are given the reigns to transform the business, empathetic leadership will be a crucial success factor. All business leaders have a personality that draws on a spectrum of capabilities, such as empathy (EQ) and intelligence (IQ). Successful CIOs are people who are willing to experiment and think big, while also remaining grounded in the current business.

Finally, we suggest inclusivity is the secret sauce for successful transformations. This inclusiveness should include diverse teams within the organisation and a broad range of external partners drawn from wide ecosystems. Effective digital transformation reaches beyond sector boundaries and involves non-traditional partners.
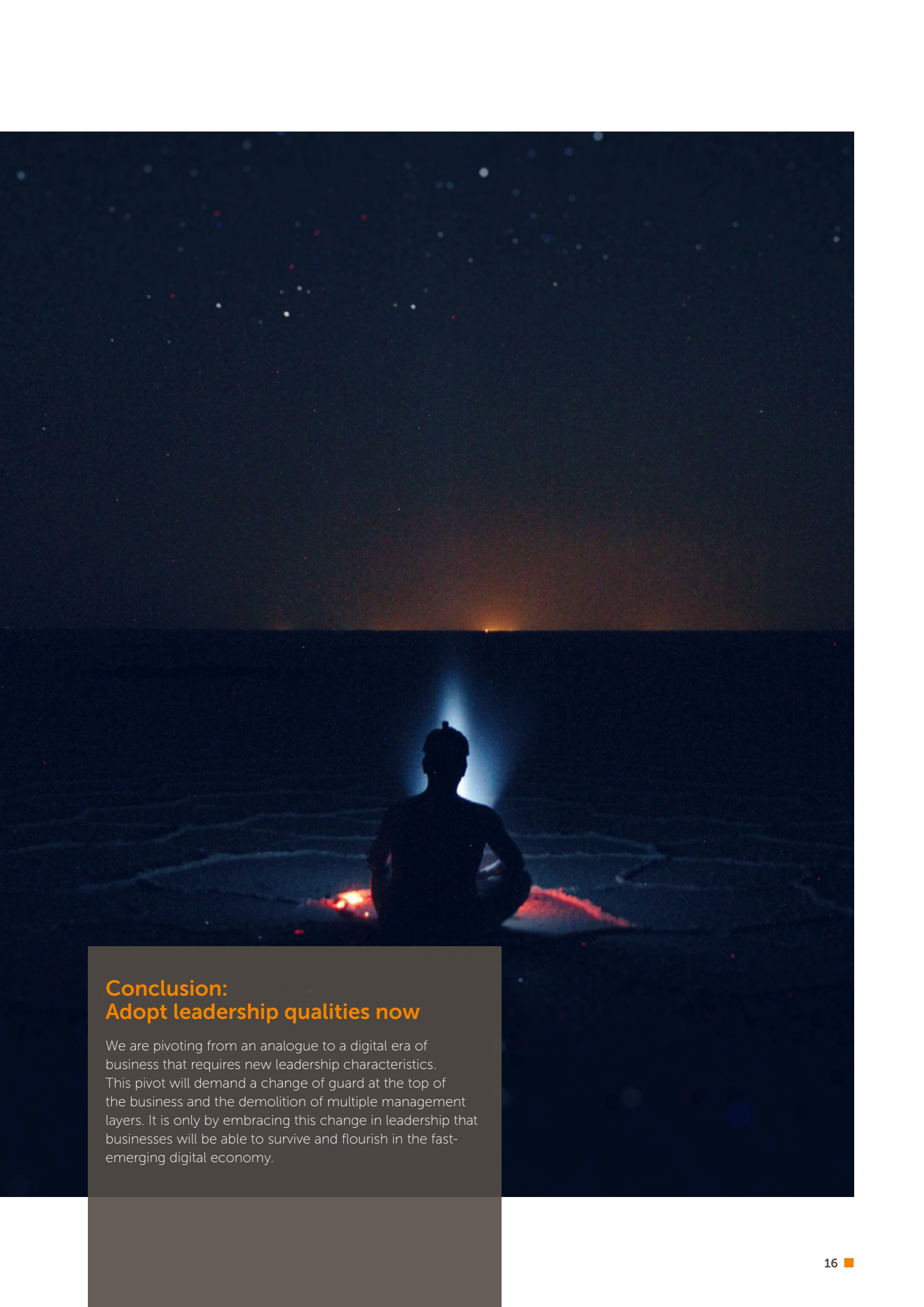
## Conclusion:
## Adopt leadership qualities now

We are pivoting from an analogue to a digital era of business that requires new leadership characteristics. This pivot will demand a change of guard at the top of the business and the demolition of multiple management layers. It is only by embracing this change in leadership that businesses will be able to survive and flourish in the fast-emerging digital economy.

# Solving our Sustainability Issues

Sustainability is essential for the future of the planet and humankind. But in recent years, politicians and industry leaders have indulged in lots of talk and little action. We are already in danger of missing the Paris Climate Agreement targets that limit temperature rises to under two degrees centigrade by 2050.

CIONET UK held a public event on sustainability last year and we were disappointed by the low attendance. We also conducted a survey with recruiter Harvey Nash that revealed sustainability was not in the top 10 strategic issues for European CIOs.

However, the healthy debate on sustainability at CIONET events during 2023 suggests there has been a big shift in direction. Suddenly, the gravitas of the impending environmental crisis is becoming clear and digital leaders recognise the need for urgent action.

## Understanding the scale of the challenge

Digital technologies are an important enabler in helping Master Chefs to achieve their strategic sustainability goals. Many of the technologies required to deliver net-zero targets might not have been invented yet, so CIOs must look out for new innovations (what CIONET calls "weak signals") and they should be prepared to undertake proof-of-concept trials.

Technology cannot eliminate carbon emissions in isolation. However, technology can play an enabling role in helping businesses and their customers to redesign their operational processes to become net zero. Our research suggests IT has much to offer its business partners when it comes to reducing carbon emissions.

Data from the Internet of Things and predictive analytics can be used to reduce asset maintenance times and produce operational efficiencies. The deployment of artificial intelligence (AI) and low-code tools to frontline workers will also be key. These kinds of data-led innovations lean heavily on the effective management of information and the implementation of standards, including the use of open sourcing.

However, while innovative solutions to sustainability challenges could emerge, CIOs cannot afford to sit back and wait for change. Estimates suggest IT contributes at least:

**3%** of global carbon emissions currently.

This proportion will increase as AI becomes more prevalent. IBM research suggests 80% of all data globally has been generated during the past two years. What's more, we will likely use more data to provide businesses with valuable insights going forwards. This increasing use of data will require more processing and storage capacity.

Our CIO community recognises that IT must get its own house in order by making the right choices in a sustainable world. IT departments should work closely with vendors, such as cloud hyper-scalers, to help reduce the environmental impact of technology. IT vendors have ambitious targets and can be effective partners in co-developing sustainable solutions. However, each partner must understand its objectives before making strategic choices.

Evidence suggests hyper-scalers are taking a proactive role in tackling sustainability, but they must provide metrics to demonstrate their competence. Governments and auditors need tangible proof that vendors and IT organisations meet requisite standards. The introduction of regulations across Europe will hasten the need to manage carbon emissions. All technology parties, whether internal or external, share this carbon-reporting responsibility. While governments are active in enforcing such standards, private industry can move faster.

Another consideration: a large proportion of hardware can be upgraded and recycled. IT vendors, such as IBM and Oracle, are recycling

**90%+** of their products by re-conditioning hardware and software.
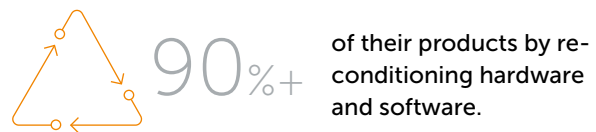
Consumers also need to be more conscious about the processing power required for their devices and applications, and the waste of materials when these devices are disposed unsustainably. We must all work towards net-zero targets.

## Putting sustainability at the heart of the business

To ensure technology plays a role in sustainability strategies, CIOs must talk constantly with their C-suite peers and other business partners. The good news from our research is that Master Chefs are at the forefront of strategy formulation and execution, not the back end. However, all CIOs should continue to educate their peers about the potential of technology to solve key business challenges, including sustainability.

Conversations with our Master Chef suggests these conversations are increasing in regularity and velocity, with digital leaders placing sustainability at the top of their IT agendas for 2023 and 2024. Our research suggests there are several techniques that CIOs can use to ensure technology-enabled sustainability is a business imperative:

As CIOs look to drive the sustainability conversations in their businesses during the next decade, our research suggests there are five key ways we can work to reduce waste (with the potential to save between 30% and 50% in costs and carbon footprint):

- Migrate infrastructure and applications to public cloud platforms as these provide the best environmental, social and governance option.

- Exploit differences between geographic regions to achieve optimal energy and water sources

- Follow the sun to ensure spare processing capacity is used.

- Use robotic process automation to remove unwanted data, especially information that has exceeded the regulatory lifecycle.

- Adopt the most efficient storage processes and procedures, including limitations on multiple email copies.

**1** **Make sure you're in the room when strategies are developed** – This position will enable you to gain top-down commitment to plans that include technology deployments. To take on this core role successfully, CIOs must educate their business partners about how technology can solve challenges. A crucial component here is the data needed to address business problems – where it sits, how much work will be required to clean it up, and who should own it.

**2** **Consider the entire ecosystem within which your business operates** – It's important that one party in the ecosystem takes responsibility for data integration and related processes. The ownership of intellectual property (IP) is often a secondary consideration in ecosystems, as the resulting IP often belongs to the entire industry.

**3** **Adopt open standards to enable common data formats and models** – Openness helps to solve the problem of ecosystem integration and simplifies supply chain connectivity. Open standards and platforms can also help to eliminate waste in programming and operations. Remember that our companies do not compete on the applications we use, but on the data sets we employ.

## Conclusion:
## No time to waste

Let's be clear: time is running out on net-zero initiatives. IT must play a central role in setting the pace for change and providing tangible solutions to sustainability challenges. CIONET research suggests sustainability has moved to the top of the CIO's agenda. Now is the time to demonstrate business leadership in reducing carbon emissions through active dialogue and collaboration upwards and outwards.

# The Cyber War: Facing off rogue nations

Cybersecurity is a top CIO priority – and it's not hard to see why. Technological advances and changes to the political landscape mean cyber is a crucial area of risk for modern businesses. Add in the potential for rogue nations to use artificial intelligence (AI) and quantum computing to disrupt services in the future and the scale of risk is clear.

However, do our boards and employees understand the scale of cyber risk? What are the likely sources of cyber activity and how can IT organisations use data analytics to track these risks? What information does the board need to evaluate operational risks and how might emerging technologies, such as AI and quantum, change the security landscape?

With these questions in mind, let's consider the kind of cyber challenges that modern businesses face and the practical steps that CIOs can take to keep their organisations safe.



## Learning lessons from the frontline

Today, modern warfare is as much about exploiting software and data insights as it is about traditional military campaigns. Integrated cyber capabilities across space, sea, land and air can mean the difference between winning and losing a battle. So far, Western nations have for the most part been protected from major cyber disruptions.

However, the political situation has changed dramatically during the past two years due to wars in Eastern Europe and the Middle East. While the UK and its Western allies remain below the threshold for war, continuing geopolitical tensions around the world mean those kinds of assessments can change quickly.

Organisations must refresh their understanding of where risks might emerge. Help is at hand. The UK's National Cyber Security Centre (NCSC), for example, should be considered as an essential partner in risk assessment endeavours. The CIO community should also listen to lectures on YouTube by MI5 Director General, Ken McCallum.

Western organisations should think carefully about which strategic IT partners they rely upon. Continuing geopolitical tensions are likely to create a political bifurcation that will affect which technology partners our businesses can use.

China's Belt and Road initiative, which is a global infrastructure development strategy, is providing economic leverage in certain regions, especially across the Global South. This strategy could place China in a more advantageous position in the future. China is also betting heavily on the success of its native technology partners, such as Huawei, whereas the West supports its digital pioneers, such as Nvidia and Microsoft.

CIOs must work to boost digital awareness within the board and across the management layers of the business. Senior executives should also monitor critical infrastructure, such as power stations and telecommunications networks. Rogue states can implant viruses in these critical assets that can be activated at any time. The safest approach is to assume cyberattacks will happen to your organisation and to take preventative measures now

The modern nature of data-driven business operations means organisations are exposed to a much higher risk of cyber disruption. CIOs should make a special effort to recruit skilled cyber professionals who can address these risks. High-quality cyber skills are at a premium, so look to develop in-house training and development programmes.



## Taking a strategic approach to the cyber threat

Cyber remains in the top three CIO priorities, despite the rise of new challenges, such as dealing with generative AI. Recent high-profile cyberattacks have also helped to pique the interest of CEOs, who recognise successful attacks can halt or shut down operations.

Take business process outsourcing specialist Capita, which was attacked by the Black Basta ransomware group during 2023. The attack impacted Capita's clients, including the NHS, local councils, and government pension schemes. The attacked affected Capita's Microsoft Office 365 software and the hackers accessed the personal data of staff working for the company and its clients. This attack will likely cost Capita as much as £25 million.

CIOs must consider the ever-growing scale of the cyber threat. The migration of legacy systems onto public cloud platforms has expanded attack surfaces and increased cyber risks. Cyber attackers, meanwhile, often operate as federated businesses that benefit from joined-up help desks that assist with payment.

While the nature of the external cyber threat continues to evolve, there is still little clarity around how AI or even quantum technologies might assist in both assisting and preventing cyberattacks. AI could lead to personalised

cyberattacks, which target specific individuals, including members of the board. Generative AI could act a force multiplier, making hackers and defenders more productive.

CIOs should also remember that cyber concerns can emanate from internal sources. Disgruntled employees can be a significant threat, especially during merger and acquisitions (M&As). CISOs should adopt preventative measures ahead of M&A activities. More generally, CISOs should present fresh cyber risk assessments to their boards every quarter.

A collegiate organisational culture is essential to avoiding cyberattacks, especially in the software-defined businesses that characterise the digital age. All staff members should receive training to ensure they understand their cyber responsibilities. Organisations should also undertake an annual review of cyber policies to validate response planning.

Industry standards, such as ISO 27001, provide a strong basis for vendor certification. However, the complex nature of IT ecosystems means all supply chain members must be certificated. Although audits can be a helpful way to assess vendors, the best approach is to develop trust and build collaborative relationships with key IT suppliers. This approach can help CIOs to identify and resolve cyber concerns quickly.

## Conclusion:
## Getting prepared for action

Our CIO community recognises the scale of the cyber threat continues to grow and evolve. CIOs who want to deal with the modern cyber challenge should focus on the following areas:

1. The sharing of cyber intelligence is critical and experienced organisations, such as the NCSC, can act as a hub for collaboration.

2. Organisations should review their cyber policies regularly, recognising that political and economic landscapes are changing rapidly.

3. The CEO and board should include cyber risk in their governance charter and receive regular assessments from the CISO.

4. The preponderance of cyber incidents could escalate as countries, such as Iran and Russia, extend their military activities further into Europe and the US.

# Collaborating Across Sector Boundaries

In our modern digital economy, the traditional boundaries between organisations and sectors are diminishing as information is shared and new products are fashioned around the end customer's needs. The interrelationship between public and private businesses is also changing, driven by hyper-connectivity and hyper-personalisation.

What's clear is the way we consume products and services has changed significantly during the past 20 years, as has the way we define our businesses. Further inexorable change will take place during the next 10 or 20 years with the rise of artificial intelligence (AI).

In a digital age characterised by change and disruption, CIOs must find a way to foster innovation and growth – and our community believes collaboration is the key to success. With this context in mind, let's consider the importance of collaboration to the CIO role.

## Modern CIOs must be brilliant collaborators

Your role as a CIO is to think about how the business can do things differently. The underlying nature of technology to all organisational processes means CIOs have a unique position among C-suite members that allows them to see business-wide opportunities.

Modern CIOs must be storytellers. Get people across the business excited about the art of the possible, whether that's building connections with younger consumers, embracing virtual worlds or boosting customer service through AI. However, there has to be a balance. Innovation is essential, but CIOs must keep an eye on operational concerns.

While most CIOs are busy delivering their transformation agendas, looking beyond the enterprise allows you to recognise how other digital leaders have solved similar problems before. Networking is crucial to success and helps you identify new opportunities that you can bring back into your own organisation.

Talking to your board about how you've had a constructive conversation with another CIO is also a great way to build connections with other companies. So, be open to new conversations and don't limit discussions to your own industry.

Use your interactions with your CIO peers to discover synergies, whether that's transitioning to new business models or dealing with the challenges of hybrid working. Effective digital leaders keep an eye on the competition, but also keep an eye on adjacent industries. Remember that interesting innovations often bubble up outside your industry.

Your strategic partners should also recognise the connective role that modern CIOs play. The nature of conversations with suppliers has changed – discussions should now be focused more on business and less on technology. You can tell when collaborations with suppliers aren't working as the relationship feels transactional and operational.

Note that your key partners should be keen to work more creatively due to the growth of emerging technologies. Be open with your suppliers because alignment is crucial to success. A strategic partnership is a bi-directional relationship. Partners who embrace this openness and flexibility will be more likely to deliver to your value-focused objectives.

Also think carefully about how innovations will help the business achieve its aims. Your ability to provide useful feedback depends on your in-depth understanding of the business. Spend time on the shopfloor, so you see operational concerns and business challenges. The best CIOs use this knowledge to show how technology can solve issues and support growth.

Finally, think of technology as a platform for collaboration. Companies that share data can accelerate growth, so long as data security is ensured. Web 3.0 technologies, such as AI, machine learning and the blockchain, are giving CIOs more of an opportunity to work with external IT provides and to create virtual environments without risk.

## Defining the collaborative CIO

Collaboration is an essential skill for any CIO. After all, working in partnership with others is often easier than going out and doing it yourself. Digital leaders should spend time with the best people in the IT industry and learn from their approach.

Effective collaboration is about bringing people together, failing fast, and industrialising great ideas. Successful collaborations often involve sharing data across organisational boundaries. It's possible to learn new ways of working from sectors that are way outside your usual area of operation, so always think about how fresh ideas can inspire new opportunities.

However, any proposed solutions to business challenges must fit with client demands and regulatory requirements. Think about how technological systems, such as the use of tools based around virtual reality and digital twins, can help your business and its partners to visualise and collaborate on development, design and build processes.

Some CIOs collaborate on elements of the value chain to ensure technology is used to drive innovation and business success. Other digital leaders are questioning their business models. For example, are automotive companies selling cars or mobility? Are pharmaceutical companies selling medicine or well- being?

So, think carefully about the technologies and partners you use. Get the right partnerships and the results can be incredible. During the coronavirus pandemic, for example, pharma companies would not have been able to innovate around drug discovery, trials and evaluation without the heavy use of AI and data.

Collaboration, however, doesn't come without risk. Intellectual property (IP) is a big issue. The core team working on a project must have the innate capability to build trust. Businesses must also consider regulation. If you can't work with regulators effectively, collaboration will fail.

The delivery of good customer experiences in all sectors relies on giving employees operational excellence, rather than slow-moving and clunky systems. But while technology supports joined-up working, the key to delivering effective collaboration is people. Systems are just a means to an end that allow empowered people to deliver great results.

The good news is collaborative CIOs have a huge range of opportunities. Industry experts suggest companies today are looking for curious CIOs who draw on a range of business and technology experiences. The most appealing candidates have navigated "difference", whether that's working in different sectors, companies, geographies or lines of business.

What's more, the strongest CIOs go beyond technology. A deficit in your ability to communicate with the board limits your ability to sell the positive impacts of technology. High IQ must be matched by emotional intelligence. Act as a C-suite leader who happens to know a lot about how technology can be used to overcome business challenges.
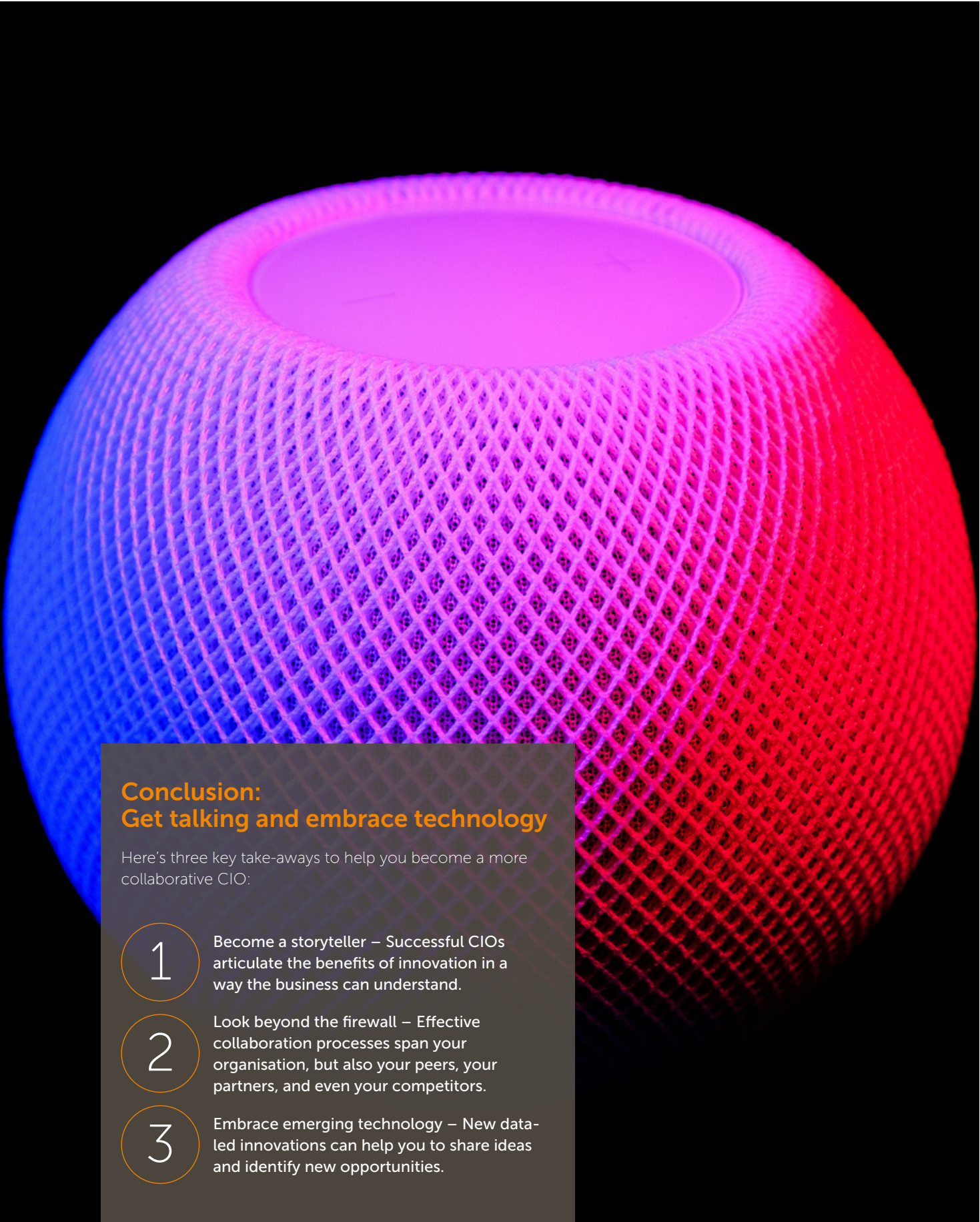
## Conclusion:
## Get talking and embrace technology

Here's three key take-aways to help you become a more collaborative CIO:

**1**    Become a storyteller – Successful CIOs articulate the benefits of innovation in a way the business can understand.

**2**    Look beyond the firewall – Effective collaboration processes span your organisation, but also your peers, your partners, and even your competitors.

**3**    Embrace emerging technology – New data-led innovations can help you to share ideas and identify new opportunities.

# About the authors



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CIONET is the leading community of IT executives in Europe and LATAM. With a membership of over 10000 CIOs, CTOs and IT Directors, CIONET has the mission to help IT executives achieve their aspirations. CIONET opens up a universe of new opportunities in IT management by developing, managing and moderating an integrated array of both offline and online tools and services designed to provide real support for IT executives, so they can do more than just keep up with change but ultimately define it.

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