2020 CIO Survey

Telecommunications industry insights

IT in the New Reality for Telecommunications

In an ever more connected world, telecommunication providers are at the heart of keeping society operating during the pandemic – for fast wireless networks with the remote workforce, elastic streaming of media, smart mobile functionality, rich data services and contagion heat maps. With the COVID-19 pandemic prompting lockdowns around the world, and with many people still spending much more time at home than before, there was a shift in network traffic from city centers to the suburbs, and the demand for fast broadband services soared with a quarter of the sector (24 percent) in 'surge' mode. Industry leaders, such as Comcast, AT&T, and Verizon, have seen a surge in their at-home internet and voice services in order to support the increased traffic for video conferencing, work collaboration tools, video streaming, and phone calls for work from home. With most consumers and businesses having experienced relatively few connectivity problems during the pandemic, telecom providers have proven that they have the networks and IT infrastructure to flex with demand.

While telecommunications has long been a key enabler of keeping business, governments, and capital markets running, there are also short-term and long-term challenges for telecom companies. While video streaming grew fast, video conferencing and collaboration tools grew even faster. Prior to the pandemic, download speeds for video streaming already had high performance. Upload speeds still need to catch up and are now being stress-tested with the influx video conferencing, work collaboration tools, remote learning, distributed cloud, and SaaS on the network. Companies have also grown in their expectations for fast, reliable connectivity as well as digital customer service and sales channels – an area where telecom has trailed behind other sectors such as retail and media. In the 5G space, telecom providers must solve for the rising expense costs associated with the buildout of the 5G network infrastructure and smartphones – an area where their profit margins already have strain but is a key area for establishing new customers. However, 5G also provides an opportunity for remote areas where there has not been established wired broadband as well as time-critical use cases in sectors such as healthcare. Notably, there is high demand for automation in the telecom sector (94 percent) with 18 percent of digital leaders having large scale implementations of AI/ML to help solve for challenges through self-optimizing networks, preventative maintenance of communications hardware, and virtual assistants. In addition, companies in this sector must utilize the full range of today's technology tools – cloud, automation, AI – to deliver faster, more seamless services that deliver on customer expectations and meet seemingly insatiable demand.
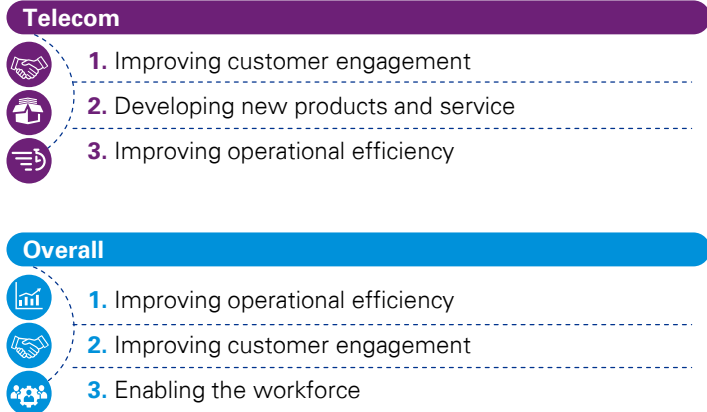
There is no doubt that connectivity is at the forefront in the new reality. The telecom sector will remain a highly competitive and rapidly evolving market in which it is becoming ever easier to switch providers and where the quality of the customer experience supported by the flawless performance of the network is paramount. Building networks of the future will require understanding what the new reality for network traffic will be including a shift towards wide area versus metropolitan, optimizing upload speeds, and keeping a close eye on profitability of new and existing products and services. With the onset of 5G around the world, new and significant growth opportunities are opening up – but also a fierce and highly political race to win market share with many countries having banned international equipment or services in creating the 5G infrastructure needed.

Board priorities & investment

Board priorities are strongly based around customer engagement, developing new products and services, and improving operational efficiency. They need to be agile, quick to respond to changing demands, and able to monetize their huge investments in building new 5G networks. With their ability to deliver voice, video, apps and data in our connected world, telecommunications and internet networks serve as the backbone for consumers, governments, and businesses. 5G implementation will continue across markets and offer unprecedented connectivity speeds, ushering in exciting developments in AI, autonomous vehicles, and infrastructure. But telcos have to look beyond mere connectivity and identify new ways to realize value – they need to behave more like pure technology companies, building a broad portfolio of services and products that users truly engage with, rather than traditional utility providers.
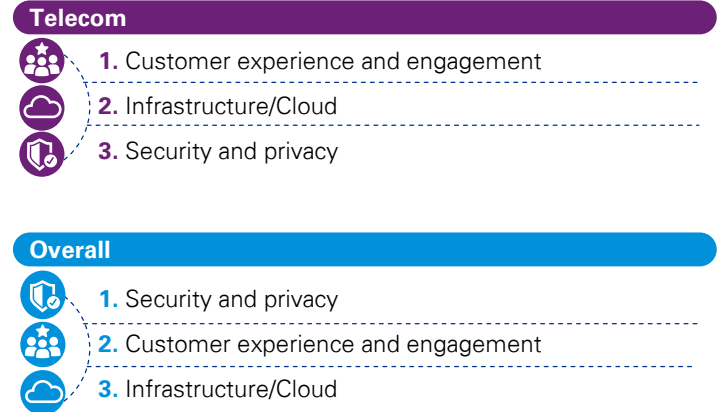
Top three business issues that management boards are looking for the IT function to address:
Telecommunications vs. overall

Telecom
1. Improving customer engagement
2. Developing new products and service
3. Improving operational efficiency

Overall
1. Improving operational efficiency
2. Improving customer engagement
3. Enabling the workforce

Three most important technology investments:
Telecommunications vs. overall

Telecom
1. Customer experience and engagement
2. Infrastructure/Cloud
3. Security and privacy

Overall
1. Security and privacy
2. Customer experience and engagement
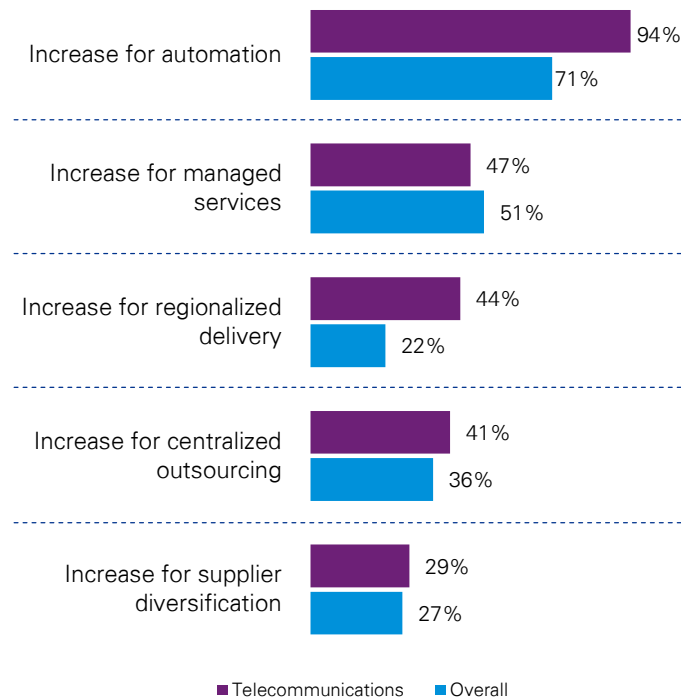3. Infrastructure/Cloud

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Strategy & operating model

Communication services providers need to push forward with their digital transformation programs as consumer demand grows for omni-channel digital experience and increased levels of self-service capability. They are also investing in AI to automate parts of customer-facing roles and processes. It is striking that 94 percent of tech leaders in telecoms say they are planning to increase investment in automation, well above the cross-sector average of 71 percent. There is also a significantly higher intention to increase the utilization of regionalized delivery models (44 percent vs. cross-sector average of 27 percent) – recognition that operating models must be configured for the varying demands of different geographic regions. As we have noted, geopolitical considerations have come more and more into play in recent years, due to US/China tensions. Whether this picture changes somewhat in the wake of the recent US election, only time will tell. Whatever transpires, it is the Digital Leaders in telecom that are far better placed than their peers, performing appreciably better on key metrics such as operational efficiency, time to market and customer experience.
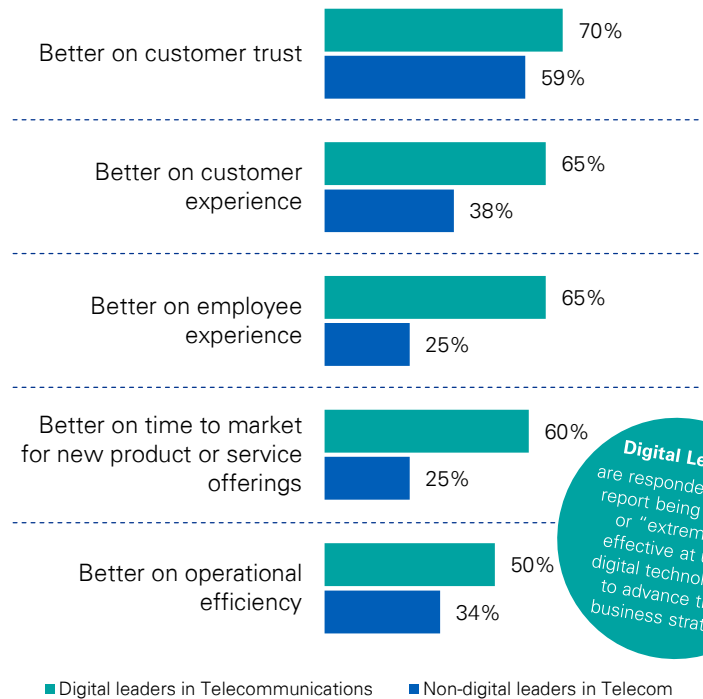
Change to service delivery model:
Telecommunications vs. overall

Metric	Telecommunications	Overall
Increase for automation	94%	71%
Increase for managed services	47%	51%
Increase for regionalized delivery	44%	22%
Increase for centralized outsourcing	41%	36%
Increase for supplier diversification	29%	27%

■ Telecommunications ■ Overall

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Organizations performing 'better' or 'significantly better' than competitors on the following metrics:
*Digital leaders vs. non-digital leaders in Telecommunications*

Metric	Digital leaders in Telecommunications	Non-digital leaders in Telecom
Better on customer trust	70%	59%
Better on customer experience	65%	38%
Better on employee experience	65%	25%
Better on time to market for new product or service offerings	60%	25%
Better on operational efficiency	50%	34%

Digital Leaders are respondents who report being "very" or "extremely" effective at using digital technologies to advance their business strategy

■ Digital leaders in Telecommunications ■ Non-digital leaders in Telecom

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Four economic recovery paths:
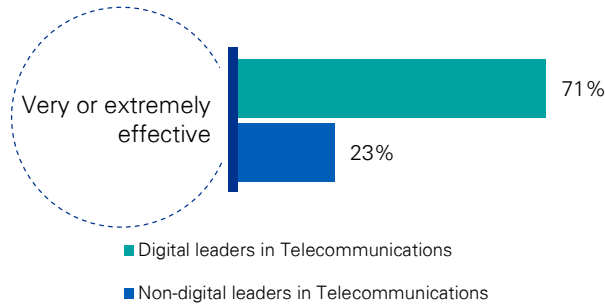*Telecommunications*

- 10%
- 39%
- 24%
- 27%
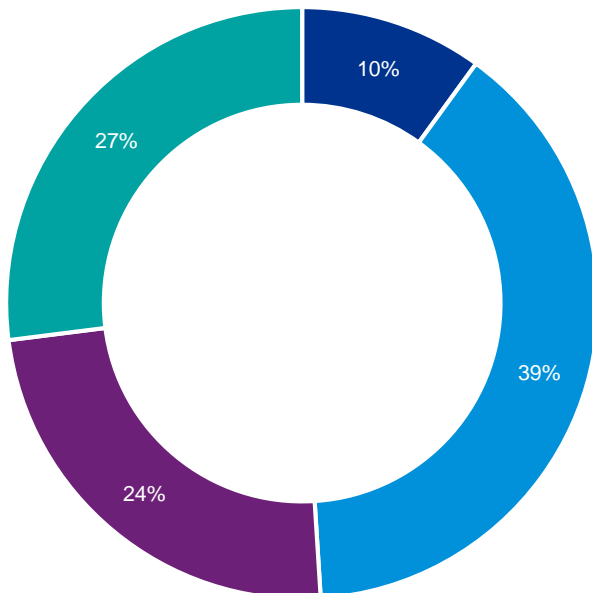
■ **Hard Reset** — companies that struggle to recover from COVID-19 due to 'permanently' lowered demand for offerings, insufficient capital to ride out extended recession, and/or poor execution of digital transformation.

■ **Transform to Re-emerge** — companies that will recover but along a protracted path requiring reserves of capital to endure and transform operating models to emerge stronger and more in line with changed consumer priorities.

■ **Surge** — companies that scale post-COVID-19 as consumer behavior that was altered during the crisis is sustained in their favor. Investors sense their potential to lead and provide capital to scale aggressively during recovery.

■ **Modified Business-as-usual** — companies seen as daily essentials will suffer effects of the consumer shutdown recession but are expected to recover more quickly as consumer demand returns in similar volumes.

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Delivering value at speed

In a sector whose very product is based on instant connectivity and resiliency, rapidly responding to changing requirements to deliver value is clearly a pre-requisite for telcos. This comes partly from their own capabilities – but another key aspect is forming alliances with other players such as major cloud and SaaS providers to provide insights into the modern architecture needed to move at market speed. Innovation and agility are critical to service demand – and it's the Digital Leaders in the telecom sector who hold all the cards. They are markedly more effective than others in the sector at pivoting and scaling digital channels (71 percent vs 23 percent), while they outperform their competitors by a distance on every key metric in relation to their digital offerings: revenue, profitability, satisfaction/experience, brand and collecting valuable data. They are also making significantly more large-scale investments in emerging technologies – and it is noticeable that, compared to other sectors, they are investing much more broadly across all categories (with the exception of quantum computing).

Organizations that are 'very effective' or 'extremely effective' at pivoting and scaling digital channels to meet new customer demands and expectations:
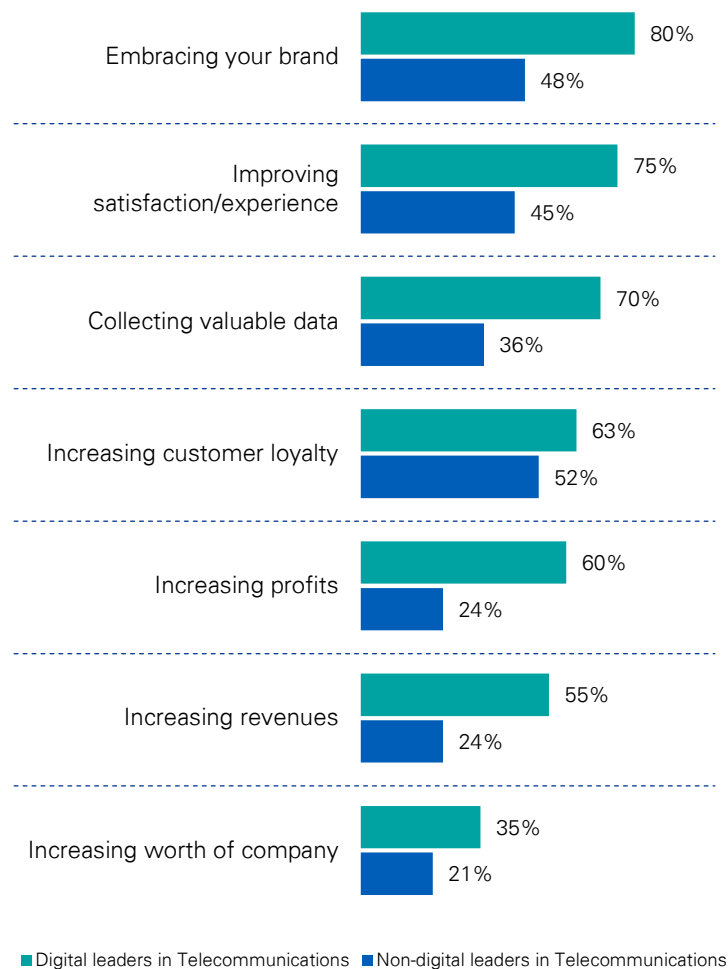*Digital leaders vs non-digital leaders in Telecommunications*

Very or extremely effective
- Digital leaders in Telecommunications: 71%
- Non-digital leaders in Telecommunications: 23%

■ Digital leaders in Telecommunications
■ Non-digital leaders in Telecommunications

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Digital offerings to customers that were 'very effective' or 'extremely effective' at the following:
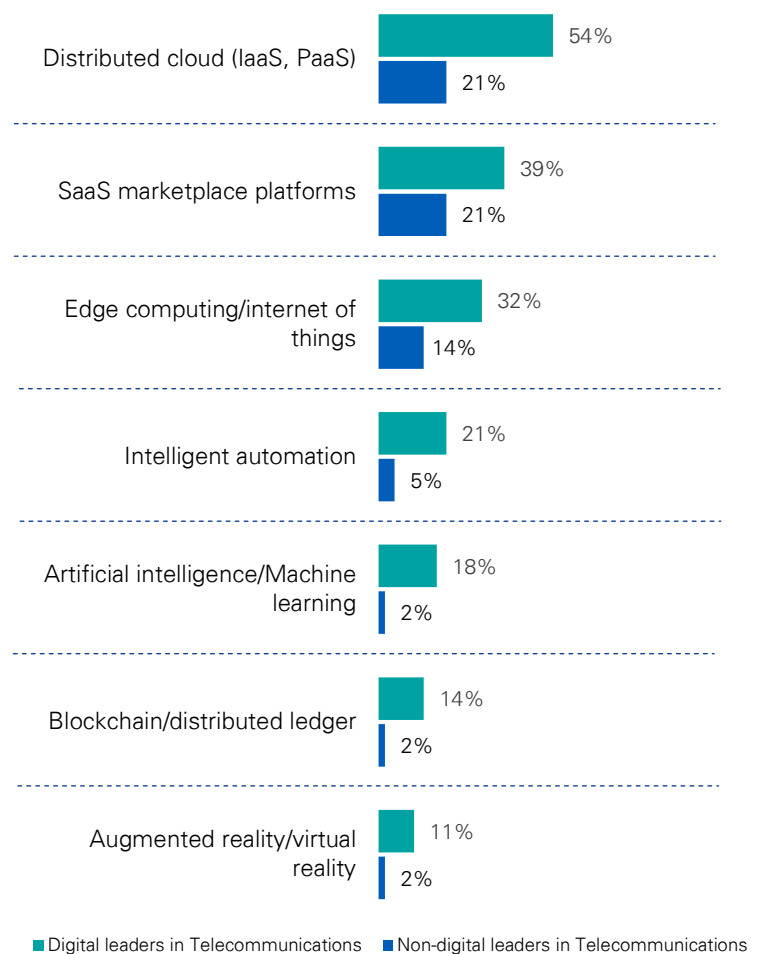*Digital leaders vs non-digital leaders in Telecommunications*

Offering	Digital leaders	Non-digital leaders
Embracing your brand	80%	48%
Improving satisfaction/experience	75%	45%
Collecting valuable data	70%	36%
Increasing customer loyalty	63%	52%
Increasing profits	60%	24%
Increasing revenues	55%	24%
Increasing worth of company	35%	21%

■ Digital leaders in Telecommunications ■ Non-digital leaders in Telecommunications

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Large-scale implementations of emerging tech:
Digital leaders vs non-digital leaders in Telecommunications

Technology	Digital leaders	Non-digital leaders
Distributed cloud (IaaS, PaaS)	54%	21%
SaaS marketplace platforms	39%	21%
Edge computing/internet of things	32%	14%
Intelligent automation	21%	5%
Artificial intelligence/Machine learning	18%	2%
Blockchain/distributed ledger	14%	2%
Augmented reality/virtual reality	11%	2%

■ Digital leaders in Telecommunications ■ Non-digital leaders in Telecommunications
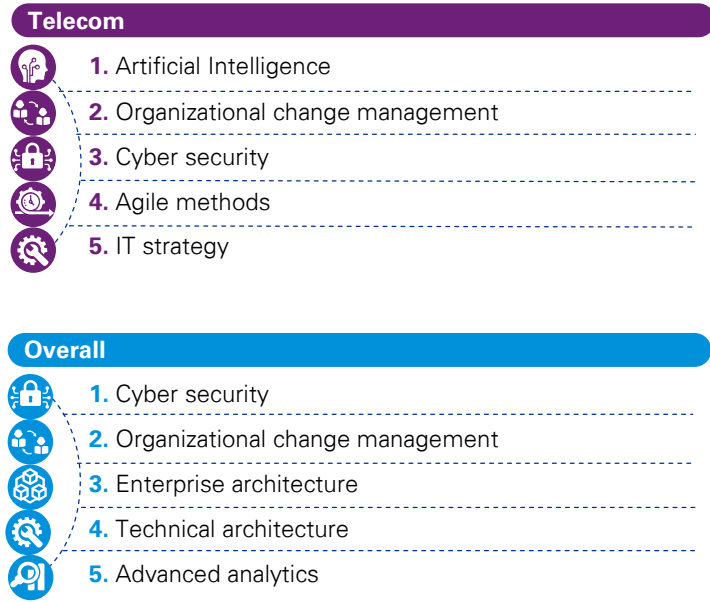
Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

People & culture

With technology at the heart of the services they provide, addressing skills shortages in the technology team must be a key priority for any telco. The standout finding in relation to the sector is that their number one skills demand is not in cyber security as it is for almost every other sector, but in artificial intelligence - underlining the extent to which telecom companies are seeking to integrate greater automation and cognitive technologies across their operations, both to speed up processes and services, and to capture client usage data and analyze it. Leading organizations have made large public announcements backed with major investment to upskill and retool the workforce to become more data literate and enabled with future ready technical skills. With technology teams likely to be working in a remote model for the foreseeable future, maintaining a strong culture and leadership, including accommodating flexible working patterns, will be important criteria in empowering teams to deliver against heavy workloads.

Most in demand skills:
Telecommunications vs overall

Telecom

1. Artificial Intelligence
2. Organizational change management
3. Cyber security
4. Agile methods
5. IT strategy

Overall

1. Cyber security
2. Organizational change management
3. Enterprise architecture
4. Technical architecture
5. Advanced analytics

Top factors in engaging and retaining key technology talent in the new reality:
Telecommunications vs overall

Telecom

1. Good remuneration
2. Strong culture & leadership
3. Career progression opportunities
4. Flexible work hours
5. Work location and remote work opportunities

Overall

1. Strong culture & leadership
2. Good remuneration
3. Career progression opportunities
4. Work location and remote work opportunities
5. Training, development, & reskilling opportunities

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

60% in Telecommunications believe **COVID-19 created a culture** of inclusivity in the **technology team**

More than half in Telecommunications believe **promoting diversity** improves **trust and collaboration, innovation, engagement with the business and creating customer focused products**

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Proportion of enterprise that will remain predominantly working from home post COVID-19:
Telecommunications vs overall

Telecom
54% Say half or more

Overall
43% Say half or more
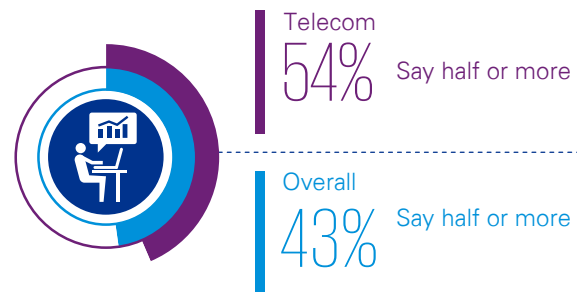
Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

The rise of cyber

With COVID-19 causing the mass relocation of staff from corporate networks to home offices, bedrooms and kitchen tables around the world, organizations' attack surfaces also dramatically grew. As a result, more than four in ten organizations have experienced an increase in cyber security incidents. For telcos, there has been a striking increase in denial-of-service attacks – up 60 percent, far in excess of the cross-sector average of 21 percent. With telcos holding and transmitting so much data across their networks, while also possessing extensive customer billing information, maintaining the tightest levels of cyber security is clearly a strategic necessity. They cannot afford any disruption to service availability and neither, in age where data privacy has become such a widespread concern, can they countenance any leakage of personal customer information.

Organizations that experienced an increase in security or cyber incidents due to remote working:
Telecommunications vs. overall

Telecommunications

31% yes

Overall

41% yes
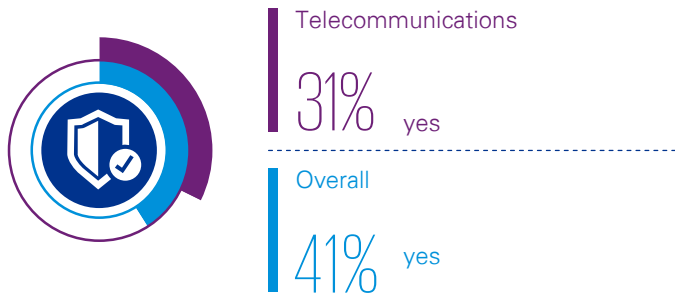
Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Increase in types of attacks:
Telecommunications vs. overall

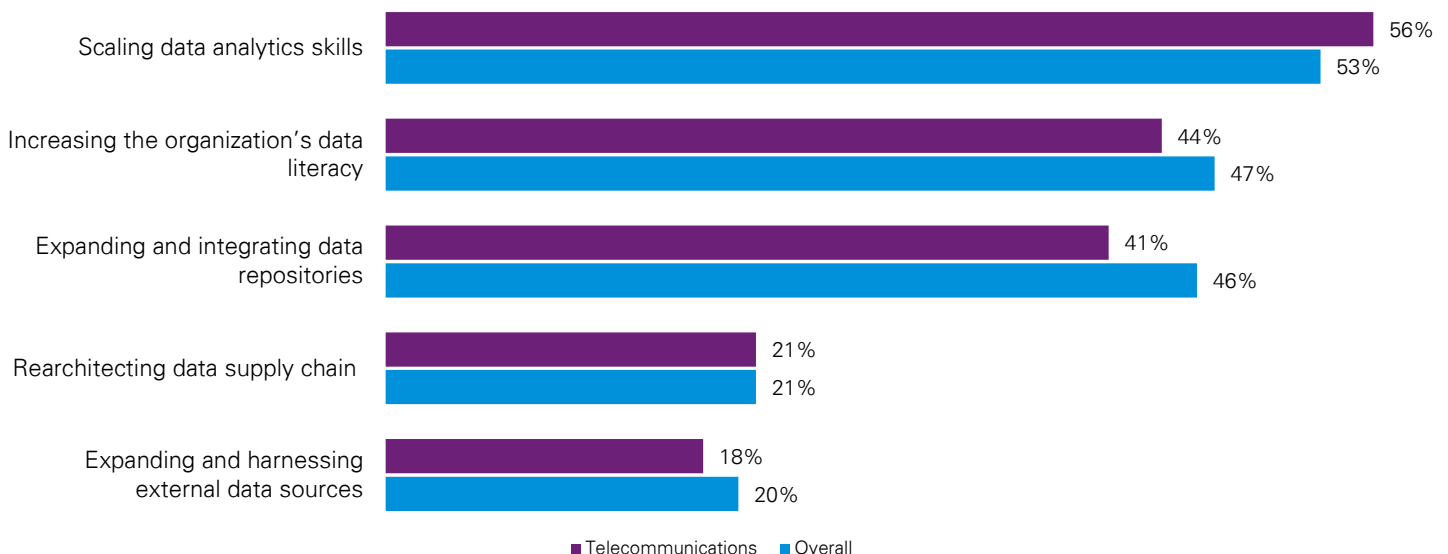| Attack	Telecommunications	Overall
Malware	70%	62%
Spear phishing	60%	83%
Denial-of-service attack	60%	21%
SQL injection	20%	9%
DNS tunneling	10%	8%
MitM	10%	5%
Zero-day exploit	0%	9%

■ Telecommunications ■ Overall
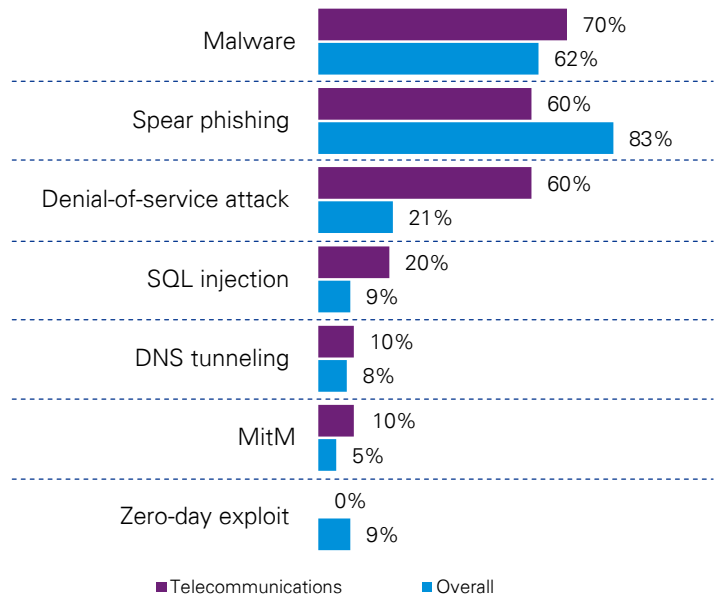
Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

Analytics & insight

If anticipating and understanding customer behaviors and preferences is key, then accessing and analyzing the rich data behind them is critical. Companies in this sector must be able to quickly gain insights from the data they hold in order to predict and anticipate network usage and market demand. The leveraging of data – using it to segue into new services and products, often in partnership with businesses in other sectors – will also be a critical factor in future success in this sector. Scaling data analytics skills is the top data-related priority for the sector (56 percent), while at number two comes the more general ambition of increasing the organization's data literacy – recognition perhaps that, in the digital era, data is everyone's area and everyone's responsibility.

Priorities for your organization's data strategy:
Telecommunications vs. overall

Priority	Telecommunications	Overall
Scaling data analytics skills	56%	53%
Increasing the organization's data literacy	44%	47%
Expanding and integrating data repositories	41%	46%
Rearchitecting data supply chain	21%	21%
Expanding and harnessing external data sources	18%	20%

■ Telecommunications ■ Overall

Source: 2020 Harvey Nash/KPMG CIO Survey, KPMG International

What now?

COVID-19 has changed the landscape. With technology more important than ever to organizations' ability to survive and thrive, the opportunity has never been greater for CIOs to work as strategic partners with the business. Seven in ten IT leaders report increased collaboration between the business and technology teams – this relationship is something that CIOs must build on to ensure their organization's digital transformation success.

For CIOs in telecom, they must build on the strong, digitally enabled platforms they already possess to continually drive a customer-centric approach – delivering seamless customer experiences, extending the integration of automation and AI, and leveraging data to rapidly respond to market demand. With so much hinging on the continued success of broadband and commercial success of 5G, the technology function must be instrumental in strategies for the monetization of network services and client data as companies in this sector seek to generate new revenue opportunities and gain market share.

How KPMG can help

While KPMG firms are some of the largest providers of services to telecommunications organizations globally, we take a boutique approach to client issues with a focus on flexibility, adaptability, and innovation. We recognize that there are many on-ramps to supporting IT transformation and we've tailored our services accordingly:

Transform the business

— Strategy and operating model
— Organizational design
— Enterprise architecture
— Portfolio planning
— Merger and acquisition
— Integration and separation

Run the business

— Scaling agile
— Product management
— DevOps tooling
— IT financial management
— IT service management
— IT asset management

Modernize and protect

— Cloud strategy
— Data center strategy
— Continuity and resiliency
— Workplace transformation
— Network modernization
— Cyber, risk, and compliance

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