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The pandemic has rapidly advanced technology strategies and agile ways of working.

Outlook: Europe

Digital acceleration in the time of coronavirus



No business strategist could have foreseen that the world would have been thrown into the economic and social crisis wreaked by a fast-moving pandemic, even in Europe, where covid-19's spread began to take its toll nearly a year ago. Even those with the clearest of crystal balls would not have been able to sidestep the impact of a virulent disease that has cost the global economy 14% of its working hours in the second quarter of this year, according to the International Labour Organization – equivalent to 400 million full-time jobs.[1] A recent survey of 600 technology decision-makers worldwide, conducted by MIT Technology Review Insights, in association with VMware, found that 67% of European respondents had business-continuity plans in place, although less than half of them found them effective.

That said, one segment of tech leaders saw their continuity efforts pay off: European organizations that already invested in digital transformation – defined in the survey as efforts to incorporate modern technology into processes and strategies to achieve business goals. These organizations have fully implemented at least one digital transformation project, all of them report that their recovery plans were effective, and more than a third of them say they were very effective. This "digital leader" cohort – representing some 15% of European respondents – points to an important intersection between planning for business disruption and a commitment to investment in enabling technology. These efforts have allowed digital leaders to absorb the shock of the pandemic and transition to remote working processes and online commerce with relative ease.

'We had to reinvent ourselves'

Digital leaders in Europe and elsewhere were therefore largely prepared for what they hadn't anticipated: a near complete move to online commerce and at-home working. "We have seen over the last few months a massive shift in how firms operate, and how people operate. We are all looking through glass: using digital channels to work from home, bank from home, shop from home, socially interact from home," observes Mike Dargan, chief information officer at Zurich-based investment bank UBS. The company's investment in technology – approximately $3.5 billion a year – has armed his team with the capabilities to make the shift. "The way we've operated, we could have basically everyone working from home – more than 95% of our people are enabled to work remotely." UBS had up to three million calls on communication service Skype a week and at one point a 70% increase in customer engagement onboarding through its mobile app.

UBS's experience was largely in line with survey results: ensuring that infrastructure remained robust and essential applications stayed online throughout the ensuing lockdowns were European respondents' top

Key takeaways

1. **Organizations that invested in technology before the coronavirus pandemic made relatively smooth transitions to online commerce and remote work.** And a third of European tech executives, responding to a global survey, are increasing their tech investments, while half are keeping spending levels constant.

2. **Tech executives are amplifying digital transformation efforts.** As online commerce has ramped up, organizations are pushing more of their applications and workloads into the cloud, expanding multi-cloud strategies, and embracing agile software development.

3. **Remote working will continue long after pandemic restrictions are lifted.** To prepare for 20% of their workforces to remain at home, European organizations are pairing infrastructure investments with efforts to secure employees' laptops and devices and formalize work-at-home policies.

About this series

This MIT Technology Review Insights report is part of a series examining the degree to which business preparedness, particularly in technology strategy, contributed to corporate resilience during the ongoing coronavirus pandemic in three world regions: Asia-Pacific, Europe, and North America. Based on survey research and in-depth executive interviews, the series also seeks to understand how technology priorities are changing as a result of ongoing business-continuity efforts.

- In July and August 2020, MIT Technology Review Insights, in association with VMware, surveyed 600 senior executives with technology decision-making responsibilities. More than half of respondents are CIOs, and 40% are other C-level executives.
- Executives who responded to this survey are split evenly among the three regions – Asia-Pacific, Europe, and North America. This report focuses on Europe.
- Respondents work in half a dozen industries; financial services, at 20%, represents the largest response group, followed by 17% each in manufacturing, retail, and government.

priorities (see Figure 1). In all, 73% say their responses to the pandemic have caused them to step up their digital transformation efforts. But they're building on a solid foundation of digital investment – and this, in turn, has helped them navigate the upheaval. "Fifteen years ago, it would have a completely different result – we would not be prepared culturally or technically," says João Günther Amaral, chief development officer at Sonae, a Portuguese retail, communications, and finance conglomerate. "We would not have the capacity to send 6,000 people home and have them work immediately and effectively."

Amaral says "digitally assisted confinement," as he calls it, has worked surprisingly well, in part because expectations for working almost entirely online were low. "We were really surprised with the quality of everything: the quality of videoconferencing and collaboration tools most of the staff had never used before, the quality of life without commuting. With all this technology, we are managing to create a good overall quality and experience for our employees and our customers."

Sonae's diverse businesses – from shuttered shopping centers to food shops that remained open – had to adapt to the new reality."We had to reinvent ourselves. We needed to be creative," Amaral says. "People started contacting their customers through every digital channel. People started opening windows in their stores – so the store was closed, but you could buy safely through a window."

Terminology

In this report, **"digital leaders"** are survey respondents whose organizations have fully implemented and deployed at least one digital transformation project and whose contingency plans during the coronavirus pandemic were considered effective.

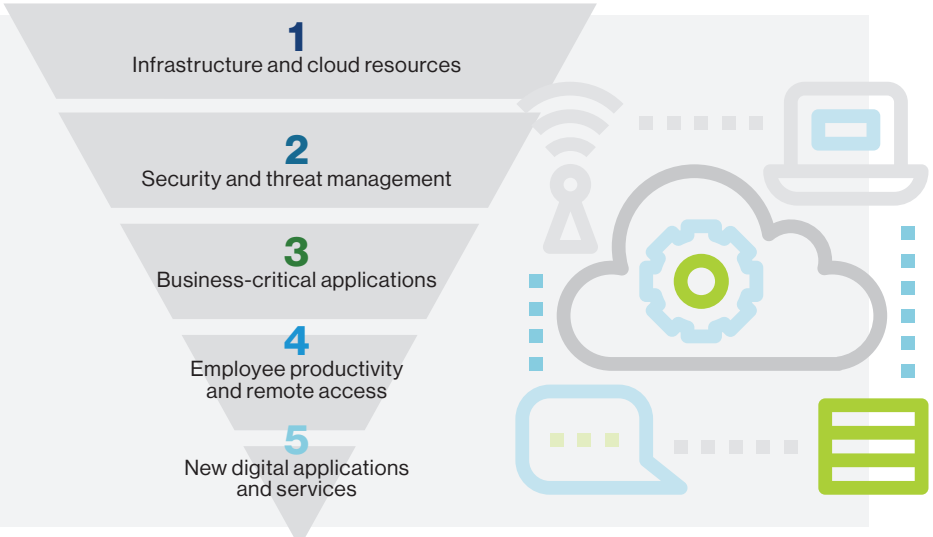
"Digital transformation" is the incorporation of modern technologies into an organization's processes and strategies to achieve business goals such as improving customer outcomes or operational agility.

67%

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Amaral describes how the company expanded an existing e-commerce app into a fully mobile customer engagement tool: "Our app already was taking touchless payments, but it was really important for our customers to be able to use their phones along their entire journey, both in and out of our stores: providing information, supporting new events, and helping people feel safe." Increasing demand for online retail placed enormous pressure on Sonae's supply chain management and other IT management systems. "Suddenly, our IT systems had to support eight times what we were supporting before," Amaral says.

Figure 1: IT priorities during lockdown
European technology executives report that in the middle of the pandemic the top IT priorities were ensuring infrastructure and security could support the most important applications.



Source: MIT Technology Review Insights survey of 600 technology decision-makers worldwide, conducted in July and August 2020

During the pandemic, digital is the business lifeline

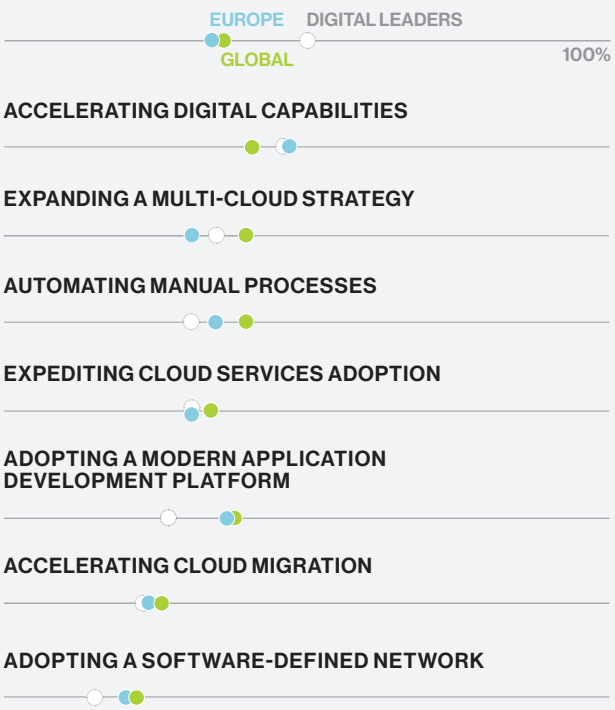
Since European digital leaders have seen tech investments made before the pandemic buoy business through it, most are staying the course. A third, for instance, report that they're increasing their IT budgets, and 58% indicate that budgets will be the same.

"The initial shock of the crisis brought about a doomsday scenario," says Delbert Chew, business steering manager at Swedish furniture giant IKEA, which pre-pandemic saw about 10% of its sales done online. "But once the dust settled, we realized there is a lot of resilience in our core business strategies, of which digital is one component of a broader transformation. Digital has been an enabling technology that is really about accelerating, fast-forwarding, making existing business and operational processes even better." So the retailer used technology to "close the gap between us and the customers," helping customers become more informed about products and services, making products and services more accessible, and facilitating transactions.

A third of all European survey respondents indicate that they are increasing their IT budgets, by an average of more than 10% over 2019 spending levels. This is partially reflective of efforts in the region to ramp up the use of mobile-first or cloud-based applications, although Europeans respondents, on average, are the least likely globally to increase these investments. In part, this reflects the fact that so many European organizations were pursuing digital transformation efforts before the crisis: "We had already recently replaced our mobility solutions, our warehouse management solutions, and our point-of-sale systems," says Amaral. He notes that for all of its turmoil, the crisis presents a valuable opportunity to improve and to be more prepared for future tumult. "We are leaving the 'pre-transition' phase of the crisis, where the opportunities are huge. To be creative, to manage the future, we must not only adapt to these times; we must also make sure that we explore the full potential of these new capabilities."

The digital shift inspired by the pandemic has intensified migration to the cloud: European survey respondents indicate on average that 21% of their customer-facing applications are now hosted in the public cloud, significantly higher than the 16% reported before the pandemic. Most European respondents indicate their public cloud

Figure 2: Tech priorities going forward
For digital leaders, cybersecurity is the highest priority in light of the pandemic and the new remote workforce. For all European organizations, digital capablities and application development are the top focuses.



Source: MIT Technology Review Insights survey of 600 technology decision-makers worldwide, conducted in July and August 2020

"We are all looking through glass: using digital channels to work from home, bank from home, shop from home, socially interact from home."

Mike Dargan,
Chief Information Officer,
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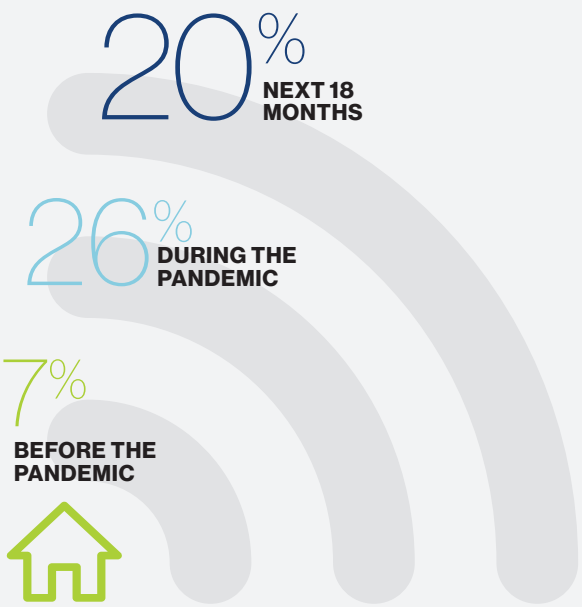
efforts will step up to 24% of total apps and workloads over the next year and a half. But the steady state of public cloud adoption is only part of their cloudification strategies: almost a third of respondents in the region indicate that they'll increase efforts to distribute IT assets across a multi-cloud IT environment, and 35% of digital leaders are doing the same (see Figure 2).

"The flexibility and agility that a multi-cloud strategy brings enterprises today is critical," says Sanjay Poonen, chief operating officer at VMware. "Having multiple paths and platforms to applications and ecosystems helps firms optimize their technology resources in real time. They can serve their customers better and successfully accomplish multiple business goals simultaneously, while keeping costs down."

Dargan says the pandemic's impact on UBS's IT operating environment was a test of its resilience but also served to validate its strategies. The investment industry saw a massive surge in the volume of trading and volatility – or swings in value – up 400%, and handled it through monitoring and burst capability in cloud-based networks. "We had the right strategy foundations in place, so the crisis meant that we did not have to massively change how we operate. We just needed to selectively accelerate ongoing execution and delivery in our ongoing cloud journey," Dargan says.

David Jaroszewski, who heads research and development and IT strategy for the Belgian Federal Police, has been working on a huge analytics project: applying cognitive analytics tools on video security footage and other evidence data in on-premises storage and cloud systems. "The covid crisis confirmed that we needed to 'dematerialize' – move portions of our IT operations to the cloud. Nothing else allows us access to 50- or 100-terabyte solutions instantly and securely," Jaroszewski says. "The reactivity needed in security and safety means there is no other way than to go to cloud solutions – the exploitation of the data requires us to externalize some IT processes."

Figure 3: Remote working skyrockets



Source: MIT Technology Review Insights survey of 600 technology decision-makers worldwide, conducted in July and August 2020

As cloud adoption widens, the appetite for agile software development is also increasing: Sixty percent of European respondents say it's a growing focus over the next 18 months – more than any other region. The increased effort to deliver IT capabilities in a DevOps manner – that is, fast, from conception to execution, and with continual improvements – is paired with a pragmatic reality: achieving more with less. Nearly 40% of European respondents also report they're not expanding their IT development teams.

"We employ the full gamut of automation," says Dargan, pointing to UBS's use of robotic process automation for operational processes and artificial intelligence for technology development. "We run about a million automations a month," from basic network management issues to complex technology production.

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Digital leaders are prepared for a new world of work

By any measure, the pandemic has thrust businesses into a fundamental shift in working practices. Like the rest of the global economy, European business has undergone a rapid and profound shift in operating environments since the crisis hit. A recent survey from Eurofound shows on average that four out of 10 workers in the European Union began working from home during the crisis, and more than half of all workers in Finland, Belgium, Luxembourg, and the Netherlands did.[2]

The MIT Technology Review Insights survey asked respondents to indicate what percentage of their total staff were working remotely for most of their time, both before the pandemic struck and currently. European respondents on average say 26% of their teams are working remotely full time, a more-than threefold increase on their pre-crisis work-from-home levels (see Figure 3). When lockdown conditions fully relax, remote-worker levels will decrease, respondents predict, but only slightly: on average, 20% of their workforces will remain at home.

The sudden, explosive rise in remote working has ushered in a giant challenge for European organizations – protecting a massive amount of endpoints, or laptops and devices used by employees who were used to going into the same office every day. Half of all European survey respondents say educating employees on various cybersecurity threats is a principal challenge, and 60% report they'll focus on securing employee devices (see Figure 4). And among digital leaders in Europe, half say their highest increased priority in the next 18 months is protecting applications and data across a disparate, cloud-based infrastructure.

At the Belgian Federal Police, Jaroszewski says that while securing a remote workforce amid burgeoning criminal exploits during the pandemic is "a daily struggle," it hasn't fundamentally changed how his

Figure 4: Future workplace priorities
European organizations expect to strengthen security for remote workers' laptops and devices, codify remote-work policies, and keep employees productive wherever they are.



60% Securing new endpoints and expanding threat management



50% Formalizing work-from-home policies



39% Optimizing employee efficiency



35% Prioritizing software as a service over traditional software development



28% Extending remote IT services and help desk support



27% Increasing online learning and development budgets



25% Assigning defined "on-campus" working days



25% Extending universal digital access to applications and systems

Source: MIT Technology Review Insights survey of 600 technology decision-makers worldwide, conducted in July and August 2020

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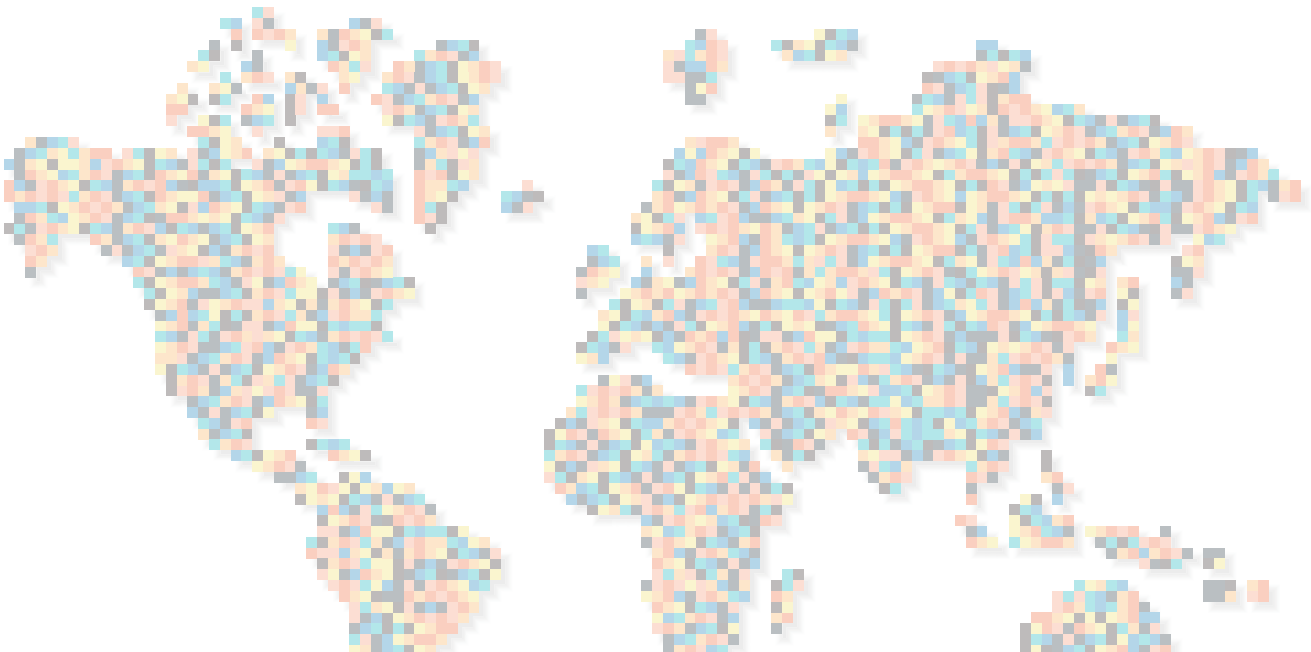
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> João Günther Amaral,
> Chief Development Officer, Sonae



team approaches cybersecurity. "Security is embedded in our core processes, operational processes," he says, as required by the European Union's sweeping General Data Protection Regulation. The law is the foundation for all technology projects, requiring his team to verify the security of data in use. "Our inclusive and modular approach allows us to respond to this legal constraint in an efficient way," Jaroszewski says. "Covid has confirmed that our strategy was the right one."

European respondents are articulating new work-from-home policies to improve employee engagement: exactly half of European respondents report they will increase management time and effort to codify remote work practices. A quarter are working to create official "on-campus time" – defining when and how many employees will be in the office. Amaral says this new world of work is causing Sonae to rethink business processes. The company is searching for opportunities to streamline the employee and customer experience – considering, for instance, robotic process automation for human personnel services.

In all of this IT investment, Amaral reflects on his company's fortunate positioning for survival through the pandemic. "We were already trying to rebuild for the new context. I don't think our employees or our customers will do everything from home, but things will move to a completely different mix, in the way we work and the way people shop," he points out. Amaral again muses about a similar crisis happening years ago. "We would have assumed that that's it – we can't close and stop everything. But today, our people are working, and our stores are open."



"Digital acceleration in time of coronavirus" is an executive briefing paper by MIT Technology Review Insights. We would like to thank all participants as well as the sponsor, VMware. MIT Technology Review Insights has collected and reported on all findings contained in this report independently, regardless of participation or sponsorship. Jason Sparapani and Laurel Ruma were the editors, and Nicola Crepaldi was the publisher.

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References
1 "ILO Monitor: COVID-19 and the world of work. Fifth edition," International Labour Organization, June 30, 2020.
2 "Working during COVID-19," Eurofound, October 13, 2020.

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