Returning to our values in a time of crisis

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FOREWORD FROM OUR CEOS

Without a doubt, we are living through extraordinary times. Companies face unimaginable pressures and disruption to their ways of working. I am pleased for this whitepaper to serve as a testament to how quickly NTT DATA was able to adapt and continue to operate successfully during this crisis.

Everyone in NTT DATA EMEA has worked together from the very beginning, sharing information and helping different locations to implement their own responses to the crisis. Indeed, this has been a time when the innovative values of NTT DATA have shone through, allowing our teams to rapidly adjust to the 'new normal'. These can be challenging and emotional times, and we believe we have worked hard to give our teams the support they need. Staying close to your people and their needs should be the overriding takeaway for any leader from this period.

I hope this book provides some insights into how to successfully adapt and respond to a crisis like COVID-19. I also would love it for you to takeaway away gems of ideas that encourage you to innovate and rethink how you work. We are entering a different world after this crisis when aspects of how we work may well have changed forever.

Walter Ruffinoni
Co-CEO, NTT DATA EMEA

I have been delighted to see the innovation, foresight, and ingenuity shown by teams across NTT DATA EMEA when responding to this global pandemic. Everything we have done has fed back into our core values, putting clients first and working together as a team to deliver exceptional results in a difficult period.

When we look back on this time, we may well pick out the innovative way we utilised virtual technologies to keep everyone collaborating and communicating – despite not being together physically in the same place. Whether it is virtual town halls or small team meetings, these moments have kept the organisation going and give us all a chance to connect everyday.

Above all, this is a time when we have learnt the importance of maintaining client relationships. Each sector may have been impacted in different ways, but what is truly crucial is going that extra mile to make clients great – a core value here at NTT DATA. I invite you now to read on about NTT DATA's work during the COVID-19 crisis including some detailed examples on how we have delivered for our clients at this time of maximum need for many businesses.

Swen Rehders
Co-CEO, NTT DATA EMEA

Introduction

The dramatic spread of coronavirus across Europe has disrupted lives, livelihoods, communities and businesses. Months into the pandemic, the continent is still buzzing with uncertainty and questions.

At NTT DATA, it is critical that we act and react robustly to support our clients, our own people, and wider society. We have based our actions to date on our core values, and we will continue to do so through the crisis.

'Clients first' is one of these guiding values. In Chapter 1, we explore how we have adapted to supporting our clients through this difficult time. Across all of our industries, including the four sectors highlighted in Chapter 4, we are ensuring that remote work proves no barrier to our work. As clients navigate this rapidly changing business environment, we remain dedicated to providing strategic yet practical advice, from blueprint to delivery and beyond.

Our ability to work effectively at this time owes much to our emphasis on 'teamwork' - another of NTT DATA's central values, and the subject of Chapter 2. We have taken great strides to ensure our people are safe and cared for through the crisis. The way we manage, message and work together has evolved and will go on evolving as the situation across Europe develops.

Our third value, 'Foresight', is the focus of Chapter 3. Innovation and forward-thinking are fundamental to success in the midst of the pandemic and in its wake. In this Chapter we touch on some of the human and technological transformations catalysed by the virus.

During this challenging time, we hope that NTT DATA's experiences and analysis can provide some useful lessons and insights.
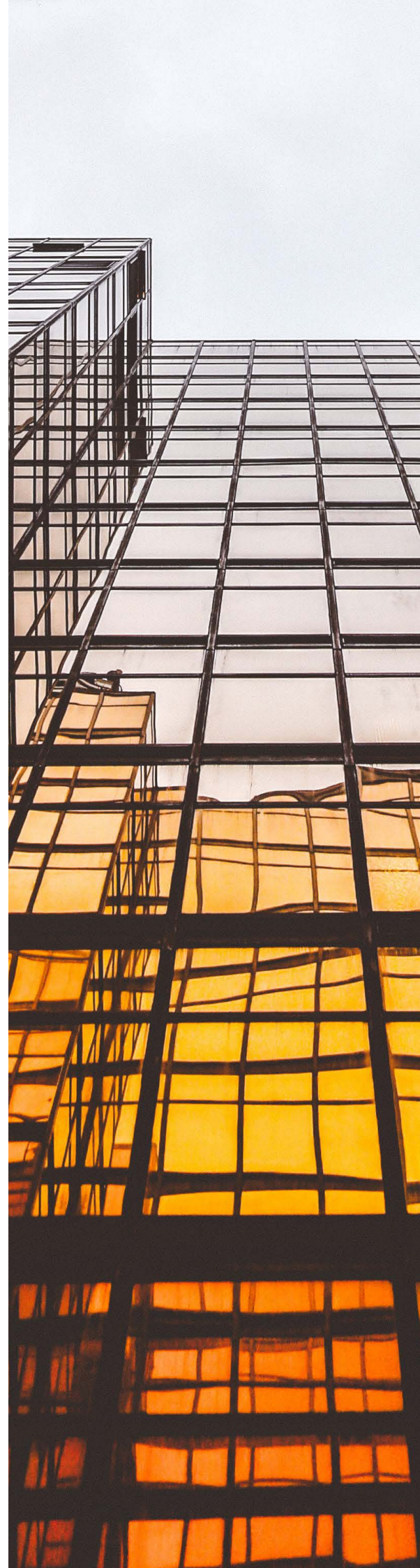
Chapter 1

PUTTING OUR CLIENTS FIRST

Clients First

First, and above all else, we put our clients first. We continuously work to understand our clients' businesses and strive to resolve every concern to our clients' satisfaction. We feel a responsibility to ensure their success. We let this obligation set the direction of our work and guide our actions.

In this chapter, we outline some of the ways NTT DATA is innovating and changing to support its clients through this demanding period.

"Our clients have been really pleased with the results we could deliver them. We have been able to work remotely in a really agile way, with business reviews pointing to consistently quick delivery, discipline and efficient decision-making across our teams."

Walter Ruffinoni
CEO, NTT DATA Italy and Co-CEO, EMEA

"We exist to make our clients great and we know that our clients need our help now more than ever."

Simon Williams
CEO, NTT DATA UK

"In these exceptional moments, we have to be closer to one another; only together, we can make sure that we come out even stronger. As a trusted partner, we continuously work alongside our clients and we are certain that tight collaboration, constant communication and synergistic efforts are the best ways to solve the new challenges.

Daniel Metz
CEO, NTT DATA Romania

"Three or four years ago, this crisis could have been a lot more difficult, but many of our clients have changed how they work with us and moved away from all workloads happening on premise. The key in this crisis has been to engage with the diversity of our clients: they are differentiated by industry, in regard to their own experience of working remotely, and crucially in terms of how the pandemic has affected their work. Number one has to be maintaining relationships with the client."

Swen Rehders
Co- CEO, NTT DATA EMEA

"The current situation questions many things that we took for granted. It forces us to change. But change is above all an opportunity. What our clients need now are innovative ideas and solutions and people with a positive mind. That's where we can help. Just as always, we will put our clients first and make them stronger than ever before."

Stefan Hansen
CEO, NTT DATA DACH

Stronger together: how NTT DATA is supporting clients across EMEA

Supporting health services, the public sector, and our societies

NTT DATA has been quick to assess where we have additional capacity, what major COVID-19 related challenges we are uniquely positioned to solve, and how we can do more. Across EMEA, our operating companies are finding ways to engage in the fight against coronavirus – both indirectly and directly.

NTT DATA Romania is working as part of joint initiative – "Un singur Cluj" – which pools money and resources to support the actions of hospitals, and national and local authorities. In the UK, meanwhile, NTT DATA has been supporting critical parts of the healthcare system, including University Hospitals of Leicester, helping them to run their IT systems during these critical times and applying to evaluate patient inflows and outflows, and to free up capacity.

NTT DATA Germany is developing new ways of virtual collaboration with customers and suppliers. NTT DATA experts advise companies on how they can collaborate virtually with their employees and offer coaching and webinars. This includes tips for virtual leadership and a concept for the virtual onboarding of new employees. Colleagues from NTT DATA Germany also participate in Hackathons from the German Federal Government and the German Red Cross to develop new ideas which improve the situation of troubling businesses or people in need.

NTT DATA Italy is running a campaign called Stay Home, Stay Creative – a contest to crowdsource ideas for how to support the business, enhance our processes or activities, and to support wider society during the pandemic. NTT DATA Italy is also helping to develop an app-based system to allow more reliable monitoring of infected people in their homes. Each patient is provided with a thermometer and a pulse oximeter and the app feeds back readings automatically, only requiring the input of medics if the readings trigger an alert.

Further to these initiatives, everis is engaged in several pro bono projects, including the

development of ecHOS Remote Health - an integrated technological solution that includes self-triage, virtual consultation and data analytics management – that it is already being implemented in Argentina and Chile to alleviate pressure on healthcare workers. The company is also providing training to SMEs through Red.es as part of a public initiative of the Ministry of Economy and Digitalisation, and is sharing its assets, platforms, and educational resources with other organisations, too.

One of everis' most exciting pieces of work in relation to COVID-19 has been the re-engineering of the company's biometric identity technology solutions. everis Aerospace, Defense and Security has redesigned its identity technology to be capable of detecting infected patients. The solution can measure body temperature in a contactless manner with facial scans or wrist scans. The company's next step is to implement these updates for all everis ADS identity solutions, which are widely used across various European airports.

Communicating often

The first step for NTT DATA throughout EMEA has been to reach out to our clients, not in a marketing sense or to gain some edge, but to offer genuine support. Emails have gone out with updates on our response to the situation, to explain how we are adapting through this phase, and to begin conversations with our clients about where they are having struggles. We have found talking to be much better than emailing – whether through one to one client calls or podcasts with the CxOs of our major clients, as done in Italy, and then shared with our internal colleagues. It's a way to keep connected with each other and our clients.

Setting our clients up for long term success

We want to help our clients look ahead and adapt to new norms. Lockdown has changed customer behaviour and much of this will prove irreversible

even once the lockdowns have lifted. The way to do this is to build in agility across every part of our clients' organisations (including procurement, legal, and all other functional areas not yet exposed to the trend of agility in software delivery).

If we can help our clients to develop resilience in structures, adaptability and versatility in processes and operating conditions, focus and clarity in messaging, and innovativeness in the way that they see their products, services, and customers, then our clients can come out of this in an incredibly strong market position.

**Specialising our services and solutions**
As simple operational activities become difficult or unprofitable and companies adapt to new patterns of demand we have been working hard to ensure we stay on top of the new asks from our clients. Areas of particular demand include:

- Accelerating clients' digital delivery of products and services. For a Government Regulator, NTT DATA UK is transforming services by introducing all new digital platforms with a move from a legacy estate to the cloud. It has moved from transactions from paper-based to online (achieving 80% online services), ensured that the majority of decisions are rule-based and automated, and enhanced the user experience.

- Business continuity management (BCM) projects as clients need to develop and implement their work from anywhere strategies, and for many, the rapid development of digital functionalities is key to ensuring the continuity of their services.

- Remote work and collaboration solutions. Clients' technologies must be able to scale and support remote work, including collaboration tools, network connectivity, VPN access and video conferencing. With HM Treasury, for example, NTT DATA UK has been supporting a Smarter Working project, bringing together the three key elements of people, workspace and technology.

- Implementation of RPA, AI and virtual agents. Clients are looking to free up capacity and cut down on repetitive, time-consuming work.
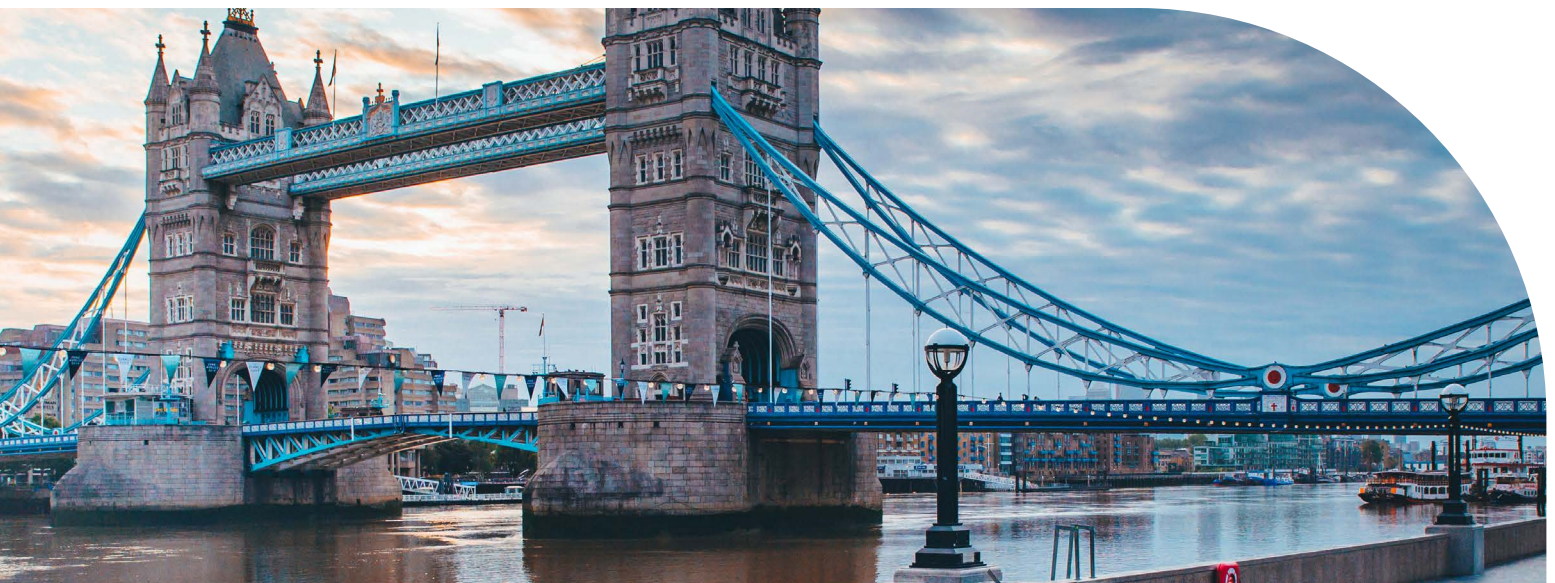
"NTT DATA is uniquely placed to tackle the challenges that businesses are facing during the coronavirus outbreak with our vast experience in end-to-end solutions for diverse industries and on many different platforms.

Particularly as businesses enter into what we consider 'phase two' of the pandemic response – involving fundamental changes in business models, and in people, processes and technologies – we're in a great position to help our clients."

Felice Chierichetti
Vice President, Head of Consulting, NTT DATA Italy

Providing free solutions for clients

All organisations are now relying more heavily on staff working from home and connecting to business systems remotely. For NTT DATA, this is an opportunity to help our clients settle into a new normal, ensuring staff are better protected and better connected through the provision of free tools.

In the UK, we secured complimentary access for our clients to Microsoft Office 365, including Microsoft Teams, for six months. We've also been working with FirstWave, offering a three-month free trial of its advanced endpoint security solution, FirstCloud. The service can be activated remotely and includes enhanced, enterprise-level endpoint protection, full technical support and centralised visibility and control.

At everis, we are offering clients free access to our tools. Knowler has become freely available for six months. This solution transforms knowledge management by mixing structured and unstructured data in a store creating a new digital workspace to maximise group synergies through collaboration with knowledge. everis TŌGŌ is also free for six months. This is a digital workplace and on-line business platform where people can work, learn, collaborate and socialise with teams and manage tasks.

Sharing our insight

One of the most basic economic resources during this pandemic is knowledge. Knowledge is what will give our clients and businesses around the world the resilience to survive and then thrive in the wake of the virus.

We believe it's our responsibility to support this process and share some of the relevant insights we've gathered with our clients and with other external audiences. Besides the free solutions mentioned above, we are currently producing a blog series as well as whitepapers on business continuity and othertopics of particular interest at this time, such as cyber security and automation.

"The current situation affects us all and our goal is to overcome it together with our customers. Rather than breaking us apart from our clients, we are more often and intensively in exchange with each other."

Ragnar Wachter
Senior Vice President, Head of Industries DACH, NTT DATA Deutschland GmbH

Q&A with NTT DATA Romania: near-shoring

Right through EMEA, NTT DATA has a range of different capabilities to offer our clients to help them stay agile and financially viable during this difficult time. Maria Metz, Deputy CEO, and Titus Mic, Chief Group Operations, from NTT DATA Romania provide insight into the value of their near-shoring expertise in the midst of the outbreak.

Q: What is the main value proposition of NTT DATA Romania's near-shoring expertise to its clients?
Titus: Being able to rely on a trusted, well organised and high-performing nearshore partner becomes paramount in the current coronavirus pandemic, which is not only a threat to public health, but also a threat to business operations in organisations of all types.

NTT DATA Romania has more than 15 years of remote work culture and managing virtual teams, while ensuring project performance. We have the IT infrastructure and comprehensive procedures that ensure operations in any context. Our colleagues are committed and are using all the tools that are available to provide full value for the projects. As an agile company, we will continue to adapt and overcome the challenges that may lie ahead.

Q: How has the COVID-19 pandemic affected your service delivery to clients?
Maria: As a provider of nearshore services, working remotely is business as usual for us. We are able to deliver our services even though we took all necessary measures to ensure the well-being of our employees. All staff members are currently working from home without any limitations or influence on productivity and performance, thus making sure our partners and clients still receive all the support they need in order to keep the business running.

Q: Have you seen any uptake in near-shoring expertise in light of strains COVID-19 has placed on different regions around the world?
Titus: Similar to the crisis in 2008, nearshore providers managed to keep their business more or less stable, even encountering uptake in some

business areas. The current pandemic is accelerating the pace of digital transformation and cloud migration and we expect partners to reach out to nearshore in order to have access to valuable and well-prepared talent at competitive prices.

Q: How are you maintaining and building on existing client relationships?
Maria: We chose a simple but effective strategy in these unpredictable times: to stay close and talk openly with our clients. We entered into a direct and honest dialogue with clients to maintain their trust. We discussed the best way to ensure their business continuity and holistically planned advisory and compliance services according to their needs, leveraging the expertise of our team. This resulted in us producing a dedicated offering package with solutions adapted to the new business context of COVID-19.

Fundamentally, we are not only the IT service provider. However, we are the only partner that is able to capitalise on the strength of the entire group with the attention of a local company, delivering additional services to help clients stay on the right path. We recognise that some of our clients are going through a turbulent time in terms of cash flow and we are taking into consideration extension of payments and discussing new packages to support our clients, helping them respond to these immediate challenges.

Chapter 2

TEAMWORK: WORKING TOGETHER
REMOTELY AT NTT DATA

Teamwork: working remotely together at NTT DATA

At NTT DATA, one of our core values is teamwork. We put great importance on enabling our employees to achieve their best through their work with each other. We believe that when a diverse group of individuals brings their unique world views together, shares their wisdom, and works toward a common goal, the results are extraordinary and far beyond what can be achieved by any one person.

In this chapter we would like to share with you some of the ways we have adapted to encourage teamwork when meeting face to face just isn't an option.

As the initial shock of the lifestyle changes have now passed, many teams are settling into a new way of working remotely. This new virtual world, likely to last many months, creates opportunities as well as challenges. For working parents there is the added stress of school closures, for those living alone the feeling of isolation, maybe living apart to look after family and loved ones – anxiety can be driven by many forms and should not be underestimated.

A crisis such as this can either break a team down and widen the cracks, or result in a stronger and much more cohesive team having forged new relationships and collaboration. The latter can be achieved through adoption of the right mindset, structure and business strategies that enhance communication and enable teams to build cohesion.

Communication

One of the clearest messages from Italy has been the importance of communication.

Businesses may make the assumption that there is already enough information in the public domain, or that communication with staff will exacerbate concern about the virus. But we haven't found this to be true. In this crisis, our people are hungry for information, and we've found it almost impossible to communicate too much or too often.

It's important for us to provide a continual cadence of clear, credible information and guidance on the daily issues our people are facing and how we are responding, whether that is making the transition to working from home, adapting to more flexible working as schools close, or implementing new government policies.

Throughout NTT DATA EMEA, we have set up a company hotline for coronavirus enquiries. This helps to ensure that channels of communication are always open; if our people have time-critical questions, they don't have to be kept waiting and left in the dark.

In addition, we have:

- Created company-wide newsletters

- Recorded video messages and updates from EMEA CEOs

- Shared podcasts from EMEA CEOs to the senior team

- Provided practical information on safety, travel, health, tips on working from home

- Shared information on company procedures and announcements

- Hosted training sessions on how to work remotely

- Provided pandemic FAQs

All of these communications are collected in central intranet portals to provide a clear, easily accessible single 'source of truth'.

Communications strategy: in brief

- Company-wide newsletters

- Video messages from EMEA CEOs

- Regular podcasts for senior team

- Practical information

- Information on company procedures

- Training sessions on working remotely

- Pandemic FAQs

ITALY

- Meet Walter: 30 minutes of open discussion with our CEO to discuss the current situation, ongoing projects, and any difficulties.

- Meet the Client: a discussion between our clients' CIOs and the respective teams working for that client.

- Coach without Frontiers: 30 minutes coaching sessions to support people on how to manage difficulties and to find opportunities for personal growth.

- Webinars designed to help people work effectively at home.

- Weekly podcast highlighting major news from NTT DATA in Italy, which goes out with an email to all employees.

- Social campaigns like #RemoteWorking where people shared their pictures of working from home. It has recently launched #ProudtobeNTTDATA to show how our work is important to maintain critical industries active during the emergency.

- Providing continued guidance and tips on working from home.

DACH

- From Townhall Meetings to video calls: the Leadership Team have already reacted to the worsening situation in early March by postponing the annual Townhall Meeting for the entire workforce. Instead, the team set up within a few days an interactive video call series for the almost 2.000 employees.

- Guidance on tools and methods: to help employees to work digitally – both internally and with our clients – the NTT DATA innovation and co-creation team has created a broad offering of digital solutions like tools, workshop formats and innovative methods.

- Information is key: NTT DATA has setup two dedicated taskforce teams to take care of the customer and the employee impact of Covid-19. They both regularly provide both target groups with the latest updates, a detailed FAQ and tips and tricks on remote work.

- Strengthening Teamwork: The company has setup a Remote Challenge for all employees. Every week is under the motto of a different hashtag like #remotepositive or #remotebreak. All colleagues are invited to send their pictures and ideas.

UK

The UK is running training sessions on adapting to remote working. Guests speakers are often brought in to provide different insights. Alice Morrison – Adventurer, Author and Journalist – is one such example, and she has already delivered sessions on 'Bravery' and 'How to Cope on Your Own'.

We are regularly posting blogs on issues that matter to our people, including 'How to manage teams effectively during home working' and 'Juggling work and childcare during the big shutdown'. The UK team is also issuing company-wide communications every other day, with a light-hearted look back at the week on Friday so that we enter the weekend on an upbeat note.

ROMANIA

The team are maintaining multiple communications channels which are all gathered centrally in NTT DATA Romania's internal platform:

- Radio Metz, named after CEO, Daniel Metz, where employees can have contact with NTT DATA Romania's CEO in a live format.

- Tips and guidance on working from home.

- Webinars about safety, medical information, wellbeing, and sport – all in partnership with medical and health partners.

- A newsletter, "Stay connected", which covers everything from remote working tips, to online courses, webinars, recipes, sport activities ideas, parenting, and challenges to keep colleagues involved.

Communications are supported by a screensavers tool, which can ping important messages in real time, as well as the company's social media platforms, which helps to amplify key messages.

Like all other NTT DATA operating companies, Romania has collected and continues to update information for its employees about procedures, national regulations, travel, and health.

"We normally do two town halls a year where the whole leadership team goes around the whole country. These are now taking place virtually. We feel it's really important to carry on this tradition, to meet at these locations, to do Q&As, and to give out rewards and recognition."

Pam Chase
SVP HR, NTT DATA UK

"There are three really important learnings on communication:
1. Visual communication is key: Stay in touch with employees through video – we received very good comments about the accessibility of the leadership team, the personal closeness and the hands-on mentality of the virtual situation
2. Personal touch due to home office helps to build trust on a new level: You give something of yourself to business life, and while losing personal interaction you gain authenticity and this helps to build trust
3. Talk often and early: Prefer rather short but more often communication."

Ragnar Wachter
Senior Vice President, Head of Industries DACH, NTT DATA Deutschland GmbH

"I am quite happy that we held the first Live Event using Teams, offering flexibility along with excellent performance and clarity. It was very powerful to see questions and feedback from colleagues in an open format, particularly in this context, and it reinforced that we are a connected and united team, proud to be part of one of the most powerful groups in the world. I intend to hold more meetings using Teams."

Daniel Metz
CEO, NTT DATA Romania

Empathy

Amid the coronavirus pandemic, many workers are dealing with unspoken challenges.

Whether it's to do with their health, their relatives, their children, or their work – our employees are managing entirely new and unfamiliar challenges. In any given case, it is difficult to know how each individual will process stress. Some may not change their behaviour, some may become hyper-productive, and others may slow down. With this in mind, we've found that the best approach is to double down on empathy.

We've made it a priority to let our people know that they are being cared for and that they should feel comfortable discussing work and nonwork-related challenges. We have an open-door policy – virtually – for them to talk through issues when needed.

Leaders and managers are also conscious of signs that someone is struggling such as distress, social withdrawal and poor performance, and they assist with workloads when issues are recognised: identifying projects with flexible deadlines, helping prioritise the most critical tasks, removing unneeded tasks and discouraging employees being "on the clock" where it isn't appropriate.
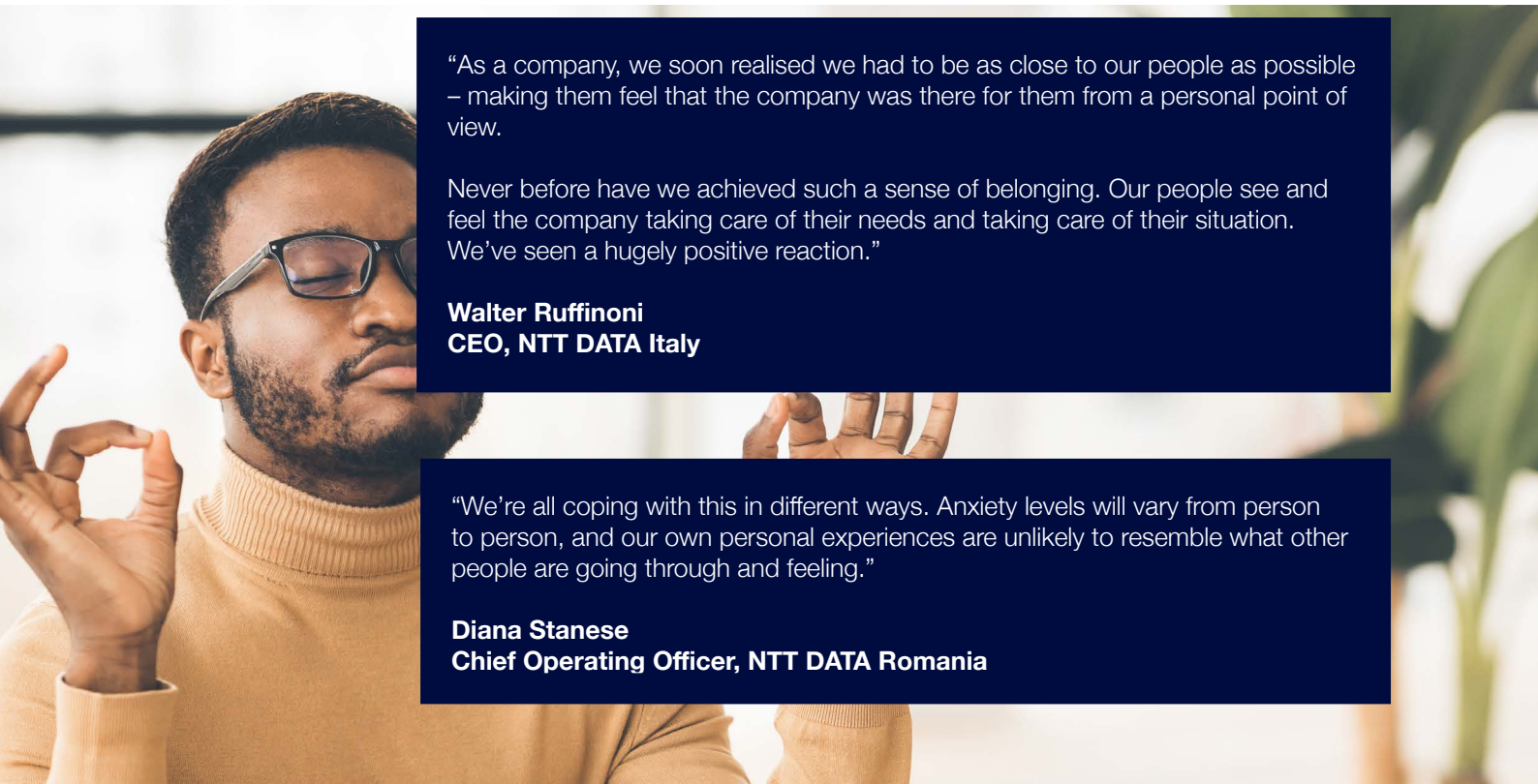
Managing mental health

As part of our Teamwork value, we believe our employees should feel free to talk. We provide a hotline for any employee who needs someone outside the organisation to talk to.

At NTT DATA Romania, coaching and emotional support are provided by trained specialists. However, not everyone feels able or wants to talk and some would prefer just to hear some advice. In the UK, webinars on managing stress and anxiety have proved popular and provide a safe outlet for those who may not feel confident in admitting personal challenges.

Other mental health actions include:

- Creating a mental wellbeing forum, consisting of a lead, sponsoring leadership members, and a committee

- Training of mental health first aiders

- Communicating our employee assistance programme

- Providing useful content through our healthcare provider

"As a company, we soon realised we had to be as close to our people as possible – making them feel that the company was there for them from a personal point of view.

Never before have we achieved such a sense of belonging. Our people see and feel the company taking care of their needs and taking care of their situation. We've seen a hugely positive reaction."

Walter Ruffinoni
CEO, NTT DATA Italy

"We're all coping with this in different ways. Anxiety levels will vary from person to person, and our own personal experiences are unlikely to resemble what other people are going through and feeling."

Diana Stanese
Chief Operating Officer, NTT DATA Romania

The art of authenticity

In September 2019, NTT DATA held the OnWave Summit which focused on leadership and culture. One of the key takeaways from the event was that leaders and managers should be their authentic selves.

Today, this lesson feels more relevant than ever. Sensitivity, authenticity, and empathy are the most important traits of our leaders today. Putting their emotions, their personality, and their expertise (or weaknesses) on the line may seem like a risk; it involves uncertainty. Nevertheless, we've found that it leads to much stronger connections with our employees during these difficult times.

Taking breaks

We find that breaks during the workday are important for our people. For us, working from home doesn't mean being "always on".

Exercise is one way to break up the day and improve wellbeing, and this is encouraged in our companies all over EMEA. Online yoga sessions are available every Friday, and additional tailored sessions are provided for each region. At NTT DATA Romania, for example, remote yoga and pilates sessions are run three times every week.

"Whatever the right solution is, it's important that employees feel they can cut themselves some slack at this difficult time. Parents, in particular, fear that their frantic juggling leaves them in the worst of all possible worlds, with their children missing out and their productivity slipping at work.

Here at NTT DATA, we've been supporting people with a package of flexible working options to help them navigate the unprecedented challenge of being at home with their 'mini-colleagues'.

If people are working around nap times, perhaps regular, staggered hours are a possibility – offering unusual start, finish and break times that enable you to work around your toddlers' timetable. Flexitime is another approach, with variable hours changing each day around a fixed core when people can be confident they can be reached.

However, sometimes with the best will in the world, it may be that no amount of flexibility will allow people to remain productive on a full-time basis while the children are around. Shifting to part time working for the duration of the lockdown – either on reduced hours per day or reduced days per week – might be a more realistic solution.

For some staff, if even reduced hours seem like an insurmountable challenge, taking some leave might be a better option. Annual leave, parental leave or dependant leave might all be up for discussion within your organisation."

Marsha Waugh Lewis
**Head of HR, NTT DATA UK**

"If at first you don't succeed, try, try, try again"

Smart work, rather than just remote work, requires some experimentation.

We've noticed some benefits from working at home such as increases in productivity in certain areas as the number of distractions has reduced. Even so, we're not ruling out a slow-down in the coming months, with some staff under-utilised. For us, this is a unique opportunity to clear backlogs and reduce technical debt while there is reduced demand from customers.

Current business conditions have also been an opportunity for us to try new things. In the UK and Germany, we have run coronavirus hackathons and have found them to be a useful way of solving business challenges, supporting our society and keeping our staff engaged and creative. NTT DATA Romania is working as part of joint initiative – "Un singur Cluj" – which pools money and resources to support the actions of hospitals, and national and local authorities. NTT DATA Italy, meanwhile, is running a campaign called Stay Home, Stay Creative – a contest to crowdsource ideas for how to support the business, enhance our processes or activities, and to support wider society during the pandemic.
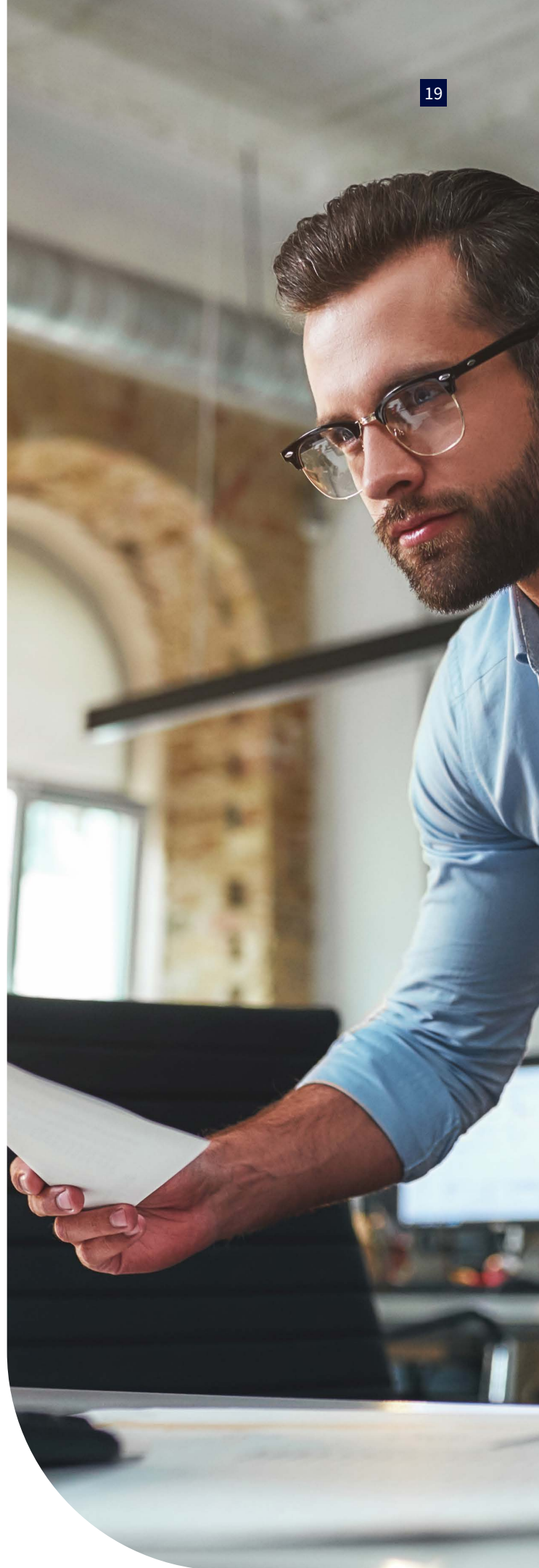
Change brings opportunity

Our staff have already settled into a routine, but it is likely that they are still riding a wave of adrenaline which will eventually wear off.

Our teams, including our IT support teams, have been working heroically to help us make the change. This can be sustained for a short period, but we want to ensure they are rested so that we can continue rely on their excellent work over the coming weeks and months.

Our leaders and managers have been thinking about how we can reallocate in order to lighten their load. We've made sure that that all worries, big or small, which are not directly related to the day job can be passed to the Business Continuity team to manage so that our staff can focus on their core roles. It's one less thing to worry about.

As well as addressing the immediate challenges of working from home, we have been mulling over the wider implications of running teams remotely, such as managing people and maintaining productivity. Our Italian colleagues noticed that new staff joining the company during this period found it harder to put down roots, so making sure that they are buddied with existing staff members has been critical. Getting inductions right for new staff is also more important than ever for us. We have taken steps to re-work our induction sessions so that they work better remotely, and we are looking to extend our induction checkpoints over several weeks so that we can identify and resolve any challenges that arise.

In addition, we are re-considering other important people management processes. For example, we used to like holding performance reviews face-to-face. Since this is no longer possible, we are running lunchtime courses for our staff to make sure that we are equipped to conduct performance reviews online and, if necessary, are prepared to have difficult conversations with team members.

> "The power of 'thank you should not be underestimated. Don't hesitate to compliment your remote team – directly or to the wider organisation – when they go the extra mile or reach a key target.
>
> Be a source of optimism and support for your team during these worrying times. Fear and negative thinking can be contagious as well as distracting. As a manager, be truthful and realistic, but balance this with hope wherever you can."
>
> **Andrew Baillie**
> **Head of Learning & Development, NTT DATA UK**
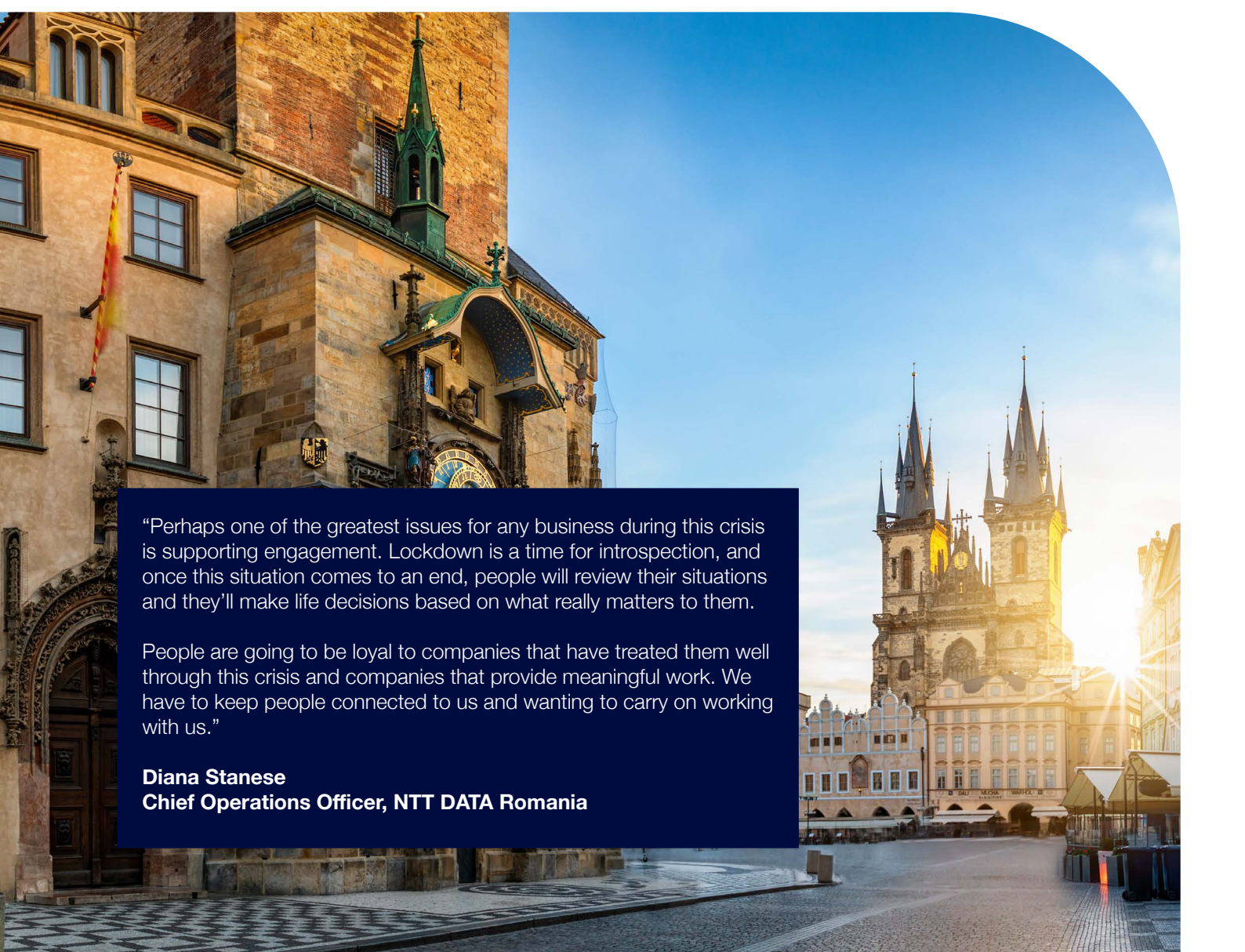
Plan for the exit

This won't last forever. At NTT DATA, we're preparing for that rebound.

We are already getting our staff to be ready to support the business conditions at the end of the pandemic. We anticipate a wave of demand for our clients' services and products, and we know that we need to be ready to support this surge – whether it is an increase in sales, or a jump in maintenance requests as mothballed equipment is suddenly brought back into use.

We have provided our staff with guidance on when to take holidays so that they are not having to manage an increase in staff holidays while business is picking up. Understandably, many of our staff won't want to take holidays now, but it is important for their wellbeing that they continue to take breaks. Others are making incredible gestures, offering to return holiday to the company.

This is likely to be a challenging time, but over the coming weeks, we are becoming used to working remotely. Every week that goes by, we are improving how we work remotely: we're making more use of collaboration tools such as Microsoft Teams and we're experimenting and find new ways of doing things.

We're proving to be an efficient and effective business even though our staff are almost entirely working from home so many of these changes will become the new normal and they will ultimately make our business better in the long run.

"Perhaps one of the greatest issues for any business during this crisis is supporting engagement. Lockdown is a time for introspection, and once this situation comes to an end, people will review their situations and they'll make life decisions based on what really matters to them.

People are going to be loyal to companies that have treated them well through this crisis and companies that provide meaningful work. We have to keep people connected to us and wanting to carry on working with us."

Diana Stanese
Chief Operations Officer, NTT DATA Romania

Reimagined meetings

Adapting to a new normal of virtual meetings and video interactions.

Adapting to virtual meetings

There is no shortage of advice about how to adapt to remote working. Within EMEA, we have found that moving to shorter, more frequent calls has been a real advantage. Giving people the opportunity to check in and ask questions as they arise really helps, especially given the current flood of information and fast evolving turns. But it's equally important to allow people time to move in between calls, get a coffee, step outside (if allowed) or just look away from their screen before the next call starts.

Working from home can lead to feelings of being disconnected and lonely, especially as weeks turn into months and this can result in lower productivity and engagement. Check-ins offer much-needed interpersonal interaction and provide a setting for more casual conversation. In Germany, NTT DATA has adopted the 'Cappuccino check-in' as a way of staying in touch. If we can't congregate round the coffee machine, then let's adapt and find a way to do it virtually. Plus, it has the added fun of seeing people's homes, their children and pets. In the UK, they've even taken this one step further with some teams adopting karaoke themed breaks.

The importance of social interaction - virtually

At NTT DATA, we've made it a priority to ensure our social calendar continues. Many NTT DATA employees meet up for virtual yoga sessions together before work or drinks at the end of the day. We also have a tradition of "First Fridays" – meeting on the first Friday of every month to update our organisation on business news followed by a chance to catch up with colleagues over drinks and nibbles. It is an important part of our culture and we have kept that going virtually. Other social activities at NTT DATA during lockdown include quizzes, fancy dress, and the step challenge – a joint initiative with our mental wellbeing group.

Keeping the camera on

There's a great deal of science and theory about the advantages of face-to-face communication for effective communication, positive connections, leadership effectiveness, and building trust. And while face-to-face isn't an option right now, we've found a few workarounds.

Keeping our cameras on where we can during video conferences is one good example. This helps people feel more connected, combats isolation, strengthens team relationships, and in a more immediate sense, can help team members to pick up on each other's body language and mood.

Visual support

When we used to run our physical face-to-face sessions, we always had post-it notes and sketches on boards and walls, and we've been exploring ways to replicate this virtually. We began with a combination of Excel and screen sharing. Now, after several weeks, we have discovered more hands-on tools, and are getting closer to that interactive, collaborative, in-person experience that we all remember.

We are continuing to evaluate more visual and interactive tools designed for such situations.
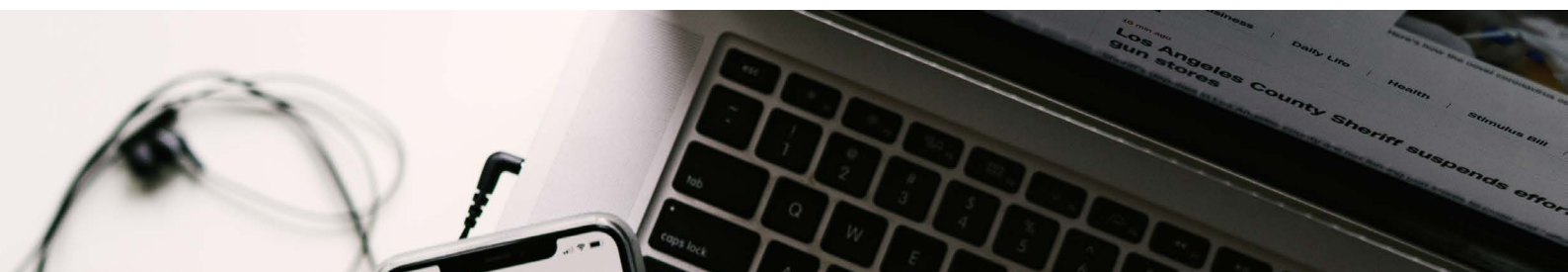
"As well as the business aspects, we mustn't lose sight of the effects on people. My first priority is that everyone in the NTT DATA family is feeling safe. With people working at home there is a tendency to start work earlier and finish later, making it a challenge to maintain a work-life balance - we need to maintain a social sanity, doing something that is not work."

**Simon Williams**
CEO, NTT DATA UK

"Following these recent weeks of confinement, the experience on a personal and professional level has been surprisingly rewarding. Believe it or not, in spite of the distance between us, the team is more united than ever. We've got to know each other better, we've got to know each other's families, their pets, we've 'gone into' each other's homes, we've shared laughter and concerns - things you don't usually do as a group in the office. This situation has also allowed us to get rid of that well-known cry in the office, there are no meeting rooms available!"

Eva Codina Sanoy
Head of Product, Everis

"Let's not pretend we are working by the old rules of video conferencing; it's okay now to have the team's children running around in the background and their dog barking – it's the life circumstances we face and we should embrace it as an opportunity to get closer to our team and be more human."

Andrew Baillie
Head of Learning & Development, NTT DATA UK
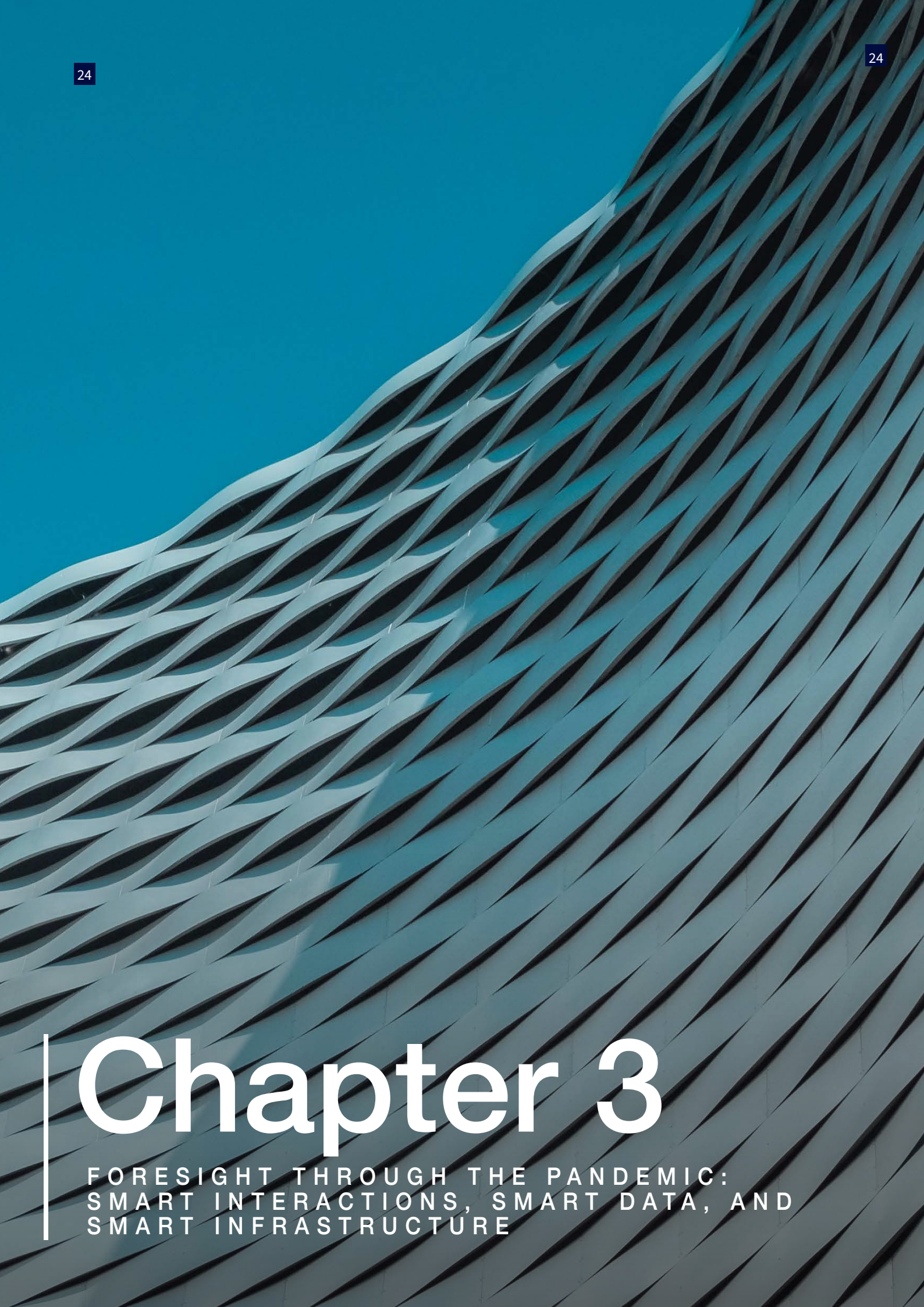
Chapter 3

FORESIGHT THROUGH THE PANDEMIC: SMART INTERACTIONS, SMART DATA, AND SMART INFRASTRUCTURE

Foresight through the pandemic: smart interactions, smart data, and smart infrastructure

At NTT DATA we weave our core values of Innovation and FORESIGHT through all of our services, offering clients expert guidance on the important trends and new technologies that can guide their business transformation.

With the emergence of coronavirus, technological, behavioural, and societal trends have shifted and will remain altered even once the immediate pandemic conditions have subsided. In the context of today's world, the following chapter explores some of the technologies in NTT DATA's Technology Foresight, NTT DATA's R&D Tour, and other NTT DATA authorities to touch on their impact this year and over next decade.

Technologies are playing an even more pivotal role in keeping our businesses and healthcare systems operative as countries endeavour to keep going during periods of lockdowns and quarantines. However, many trends and habits adopted at the time of the crisis will have longer lasting impacts that will lastingly influence societies well beyond the pandemic.

Smart interactions

The virtual workplace

Cloud software apps that help people collaborate, work, and socialise - Zoom, Slack and Microsoft Teams, to name a few – have all experienced dramatic spikes in users over a relatively small space of time.

These platforms have evolved from being solutions aimed at businesses to being household names. Consumers are now using them for; socials, online classes, celebrations, yoga sessions, and so much more. Zoom claimed to have 300 million free and paid users on its app every day as of 21st April. That's a staggering rise in the context of the 10 million users the company had at the end of December.

As virtual work and socialising become entrenched in the public psyche, virtual and remote work is set to remain popular. Employees will tend to appreciate this shift given greater opportunity for a work-life balance, and employers, in like manner, will appreciate savings through reduced office costs.

The rise of the virtual workplace may well accelerate the development and use of virtual reality in this setting. At NTT DATA, we have multiple ongoing research projects dedicated to virtual reality and augmented reality. One such project from NTT DATA helps employees to collaborate regardless of location and features an intelligent AI which understands the emotional connotations of spoken language. Virtual avatars reflect these emotions with familiar human facial expressions.

"As a provider of nearshore services, working remotely is business as usual for us. All staff members are currently working from home without impact on productivity or performance - and so we need to be asking ourselves, 'what is the new norm?', 'what role does an office have?' Our clients will be asking the same for their employees.

There may be conversations about how we work with our clients and how they want to work with us. We've proved to them that we can provide the same level of service with nobody on site at all."

Maria Metz
Deputy CEO, NTT DATA Romania
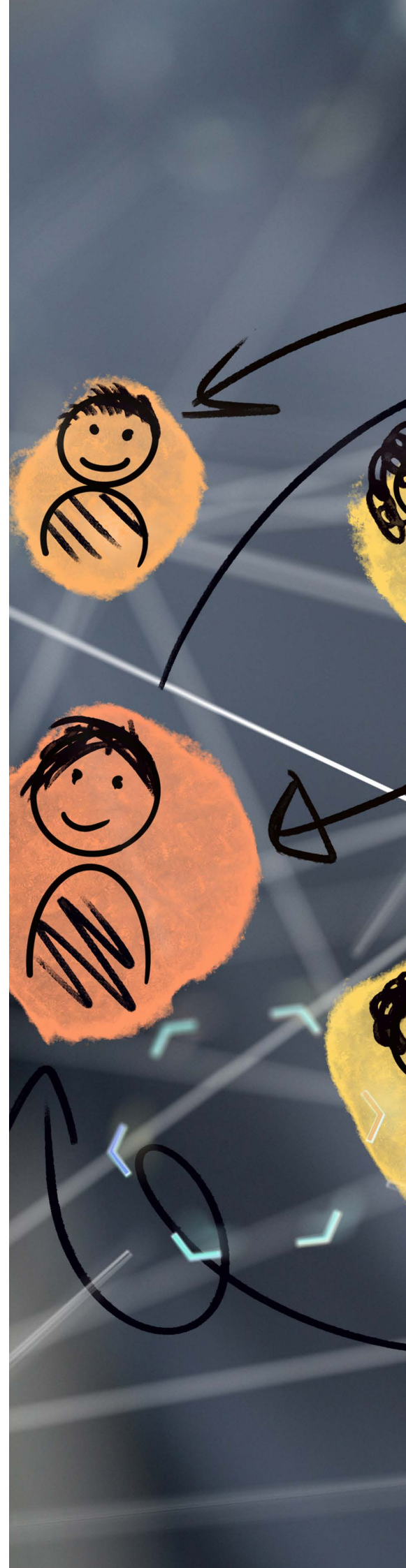
'Phygital' and ambient wellness spaces

"The lines between what is physical and digital lessen by the day. We live in a hybrid world and what was once firmly virtual now seems much more 'real'. In reverse, the physical has an overlay of virtual characteristics and technologies. The two are becoming ever more interwoven."

Marc Alba
Senior Vice President, NTT President,
NTT Disruption

We are living in a more hybrid world where the physical and digital are becoming interwoven – a 'phygital' world so to speak. This was a topic of much discussion during NTT DATA's OnWave event at the end of last year. This hybridity has been in emergence for some time now, spurred by booms in a whole range of technologies - AI, robotics, ML, IoT, edge computing, and 5G, to name a few – and even in the midst of the current crisis, there are no signs of this trend falling away.

Apps are being decoupled from clunky devices are showing up instead, naturally, in the physical spaces around us. One example of the 'phygital' can be found at NTT DATA's Catch&Go store.

NTT DATA has recently introduced Facial Authentication Shopping and Inventory-linked Dynamic Pricing at our experimental Catch&Go digital store – a register-less digital store concept being offered to the retail industry.

First opened in September 2019, the new store allows customers to register their payment method in advance, enter the store using a QR code for authentication, and take their selected items without needing to stop at a register. With facial authentication, once shoppers have registered, they can do all of their shopping without needing to take their phones out even once. Dynamic pricing, meanwhile, reduces losses from waste for store managers by ensuring that the most suitable prices are set at all times.

Education goes digital

As universities and schools close and students are separated physically from their teachers, e-learning is already taking off. Many have started offering courses online to guarantee that learning is not disrupted by lockdown measures. Technologies involved in distant learning are similar to those for remote work: virtual reality, augmented reality, and artificial-intelligence-enabled robot teachers.

Education companies, educational publishers, and qualifications providers are also in the process of digitising their products and services to enable access during lockdown. Some, like the Association of Chartered Certified Accountants (ACCA), began this process before the pandemic – recognising the dramatic benefits of digital enablement for their customers.

NTT DATA and the Association of Chartered Certified Accountants

Since November 2019, NTT DATA UK has been at the forefront of revitalising ACCA's legacy environment, ensuring the delivery of new solutions and innovative business processes. NTT DATA is transforming the organisation to be truly digitally-enabled, supporting efficient global operations for accountancy certification and lifetime member career development that can react proactively to market change.

Technology is a key building block for the ACCA's work to provide members and partners with the best possible experience from start to finish. From digitising exams to giving its learning partners the ability to quickly and easily track a student's progress, every digital touchpoint of the ACCA experience is becoming streamlined.

Smart data

AI for healthcare and life sciences
The complexity and rise of data in healthcare mean that AI is already being applied within the field. Key areas of application include diagnosis and treatment recommendations, and administrative activities. With the emergence of COVID-19, AI is currently being used in various countries in Europe to triage patients, to manage data inflows and outflows, and to track and predict viral spread.

Even once the coronavirus outlook improves, the collective experiences of people and countries around the world is likely to be a catalyst for further advances in artificial intelligence in the healthcare sector. Advanced language proficiency for AI is already reaching human ability and is beginning to support healthcare workers with some aspects of medical diagnosis. AI technologies that can detect underlying health conditions will not only help to treat patients but could prevent the spread of future pandemics.

Robotics and automation
Coronavirus has made the world understand how deeply our societies rely on human connections. Businesses reliant on manpower are now considering whether technology could have a role to play in making their organisation more resilient in the long-term.

The virus has highlighted the need for robotics in labour-intensive sectors, such as retail, food, manufacturing and logistics. Hardware combined with cutting edge AI can already understand complex surroundings, undertake dexterous operations, and support human employees in their work. It has also highlighted, in industries that aren't labour intensive, new possibilities for Robotic Process Automation. NTT DATA is a leader in this space and has been developing a new Hybrid Command Centre technology that enables businesses to manage their robot workforce in the same way that they would manage their physical workforce.

In the healthcare sector too, the virus has emphasised the utility of robots when human-to-human interaction between patient and carer isn't ideal or possible. One of NTT's own devices, SOTA, is currently being tested in the UK at Great Ormond Street Hospital's DRIVE lab to help ill children. The robot can have complex conversations, contextualising its responses based on the acquired knowledge of the patient.

"Digital technologies are used to transform shop-floor operations into smart operations where intelligent production assets and machines as well as smart services enable the 'digital factory' to become a highly efficient and integrated cyber-physical production system [...]

Teknowlogy expects an increasing investment trend in use cases related to asset and plant performance monitoring, predictive analytics and predictive maintenance, as well as connected worker solutions."

**Stefanie Naujoks
PAC Teknowlogy,
Digital Factory – C&SI
Vendor Landscape
in Germany 2020, 17
April 2020**

Virtualised and augmented entertainment experiences

The pandemic has ushered us into an emerging age of virtual media, offering a bridge and unprecedented access to some of the world's cultural touchstones that are now physically inaccessible. From the National Theatre, to New York's Botanical Garden, to countless cinema chains – virtual is now, at least for the time being, the sole delivery channel for many organisations. And it's proving popular, too. Art Basel's Online Viewing Rooms were so in demand on launch that the site crashed.

Particularly in sport and entertainment industries, coronavirus is likely to be a spark for greater digitalisation of real-world experiences and digital augmentation of those experiences. NTT DATA is already engaged in a number of research projects in this regard.

NTT's Kirari! is an evolving group of technologies that can collect, process, transmit, reproduce, and transform visual information in real time. Kirari! will eventually enable the transmission and reproduction of the entirety of sporting arenas to audiences around the world as if they were there in person. It is already in use at The Open Golf Championship.

NTT Group is also working on artificial intelligence specialised for camera feeds. Calibrated according to various camera parameters such as position, direction, distortion and view angle, our software employs AI-enhanced image recognition to automatically track players on a sports field pitch, and the movement of limbs. We can then use this data captured to display interesting live statistics about the game and each player to spectators.

The rise of data-conscious consumers and businesses

One of the unanticipated consequences of the current climate is that never before has the whole world been so transfixed by data. The invisibility of the virus and the difficulty of tracing infection rates means the only way to understand the spread is by monitoring the stats.

As a result, there has been an eruption of interest in data and data visualisation - the technique used to represent information and statistics in the form of graphs, which news organisations and governments alike have used to report on the virus. Never has data visualisation has been so mainstream - the public has experienced the power of it, and its importance will remain beyond the current crisis.

> "The use cases for data visualisation in the B2C world are almost endless. Consumers may begin to question why, for example, their mobile provider gives them a single figure to show them their data usage. Why can they not see it visualised over a month, so they can more easily interpret their remaining allowance and plan accordingly? Business may be becoming accustomed to using data visualisations to run their organisations efficiently and they may find their customers will begin to expect it as well. The challenge of making data meaningful, and the consumers growing appetite for it, means business needs to move up a gear."

Joel Brocklehurst
Business Consultant, NTT DATA UK

Smart infrastructure

Quantum computing for drug and vaccine discovery

Today, it often takes pharmaceutical companies more than 10 years and billions of dollars to develop a new drug and take it to market. With vaccines, the discovery process normally lasts around five years based on currently available technologies. Even in the case of COVID-19 where the usual procedures have been rushed, a viable, effective vaccine is unlikely to be available for at least one year according to most experts.
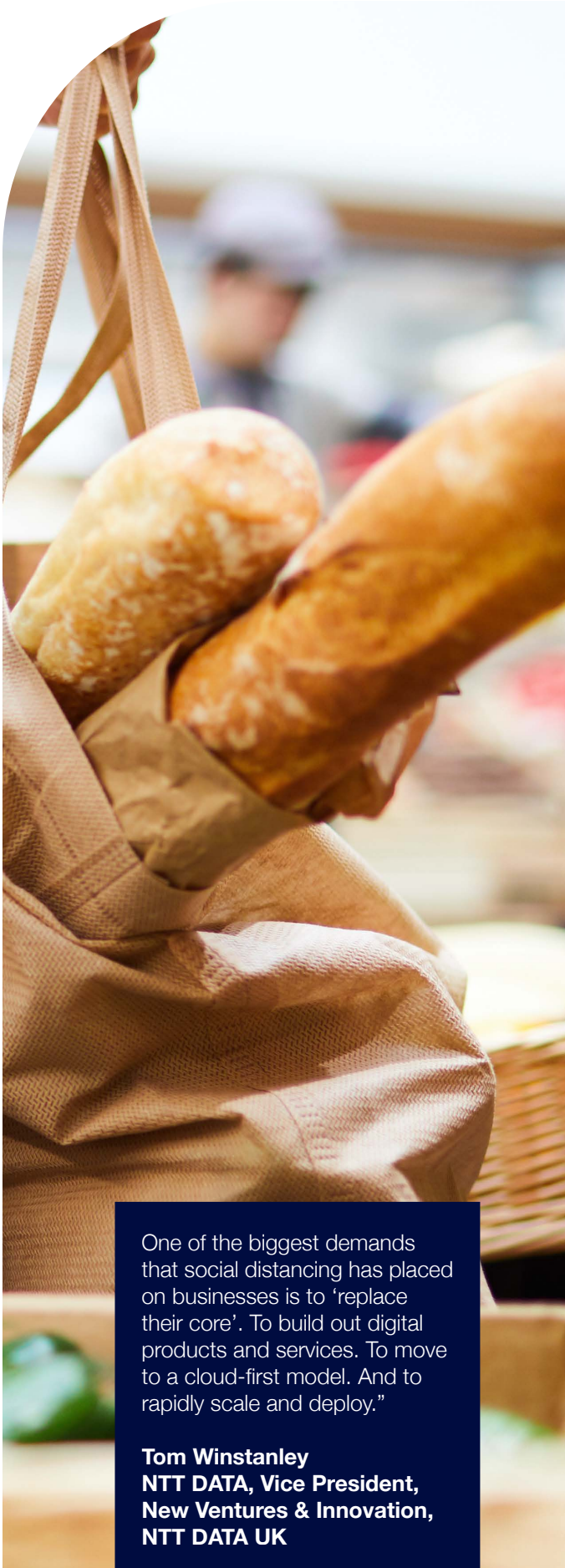
Hastening these processes via quantum computing can substantially shrink costs and time requirements, and ultimately, could prevent future novel outbreaks evolving into pandemics.

At NTT and NTT DATA, we are studying and building quantum computing technologies, as well as light-based computer systems that could eventually be applied by drug and vaccine researchers. One of our most exciting R&D projects is a new type of Ising computer called LASOLV – derived from a combination of the words "laser" and "solve" – which is exceptional at solving computationally hard optimisation problems. LASOLV uses light pulses and functions using a phase sensitive amplifier which has been in development for many years by NTT Laboratories. Most Ising and Quantum machines must run at extremely low temperatures of below −200°C, but LASOLV can operate at room temperature.

New, scalable digital delivery models

As COVID-19 pressures the global supply chains and delivery channels of companies around the world, businesses will increasingly start to build resilience by complementing and in some cases, even replacing, physical product-focused models with scalable and stable digital delivery alternatives.

We've already explored why digital delivery has become more important in the education sector, but in fact, the same is true of so many other industries. In retail, for instance, due to self-isolation, consumers who normally visit physical stores are shopping online. Retailers know that these changes may well become permanent as consumers come to preference the convenience of online, and so the focus is now firmly on transformation and the creation of new digital channels.

> One of the biggest demands that social distancing has placed on businesses is to 'replace their core'. To build out digital products and services. To move to a cloud-first model. And to rapidly scale and deploy."
>
> **Tom Winstanley**
> **NTT DATA, Vice President,**
> **New Ventures & Innovation,**
> **NTT DATA UK**

Next generation cyber security

It is hard to think of a single event to date that has transformed the technology threat landscape more than COVID-19. The outbreak has increased our reliance on the digital world, and with the enormous rise in home working, it has opened up fresh opportunities for malicious actors.

In an even more immediate sense, there is a surge in online fraudsters looking to exploit the pandemic for criminal ends. Even the WHO has been forced to create a page to caution everyone about the frauds that are circulating online.

Despite an evidently heightened risk, corporate accounts are under pressure and in the event that security is viewed purely as a net cost rather than cost saver, some security budgets may be reduced or halted altogether.

Combatting this raised level of threat, NTT DATA UK has partnered with cloud security technology company, FirstWave, to deliver its cloud security solution free of charge to clients for a limited period.

Computer power evolution and the rise of photonics

Coronavirus has put a strain on various forms of technology infrastructure. In Spain, traffic through IP networks has seen increases of nearly 40% while mobile use has increased by about 50% in voice and 25% in data. Traffic from instant messaging tools such as WhatsApp has increased fivefold.

Cloud storage and processing is in the spotlight too, too, as the pandemic puts it through a stress test like nothing it has seen before. As much of the world begins to work from home, and as the majority of countries shut bars, theatres, cinemas, and sports stadiums, work and recreational use of the cloud has exploded.

Long term, the inexhaustible demand for computing power is being tackled through a combination of new, denser chips and application-specific architectures. To solve power requirements additional new materials like carbon nanotubes, and approaches like photonics and neuromorphic architectures are being investigated and introduced.

At NTT DATA and NTT Group, we are directly involved in these efforts – developing the next generation of computers and circuitry based on photonics. The realisation of our research efforts will underpin a new, smarter world – one that is faster, more efficient, and more sustainable.

See more about NTT DATA's R&D Forum 2019 here.
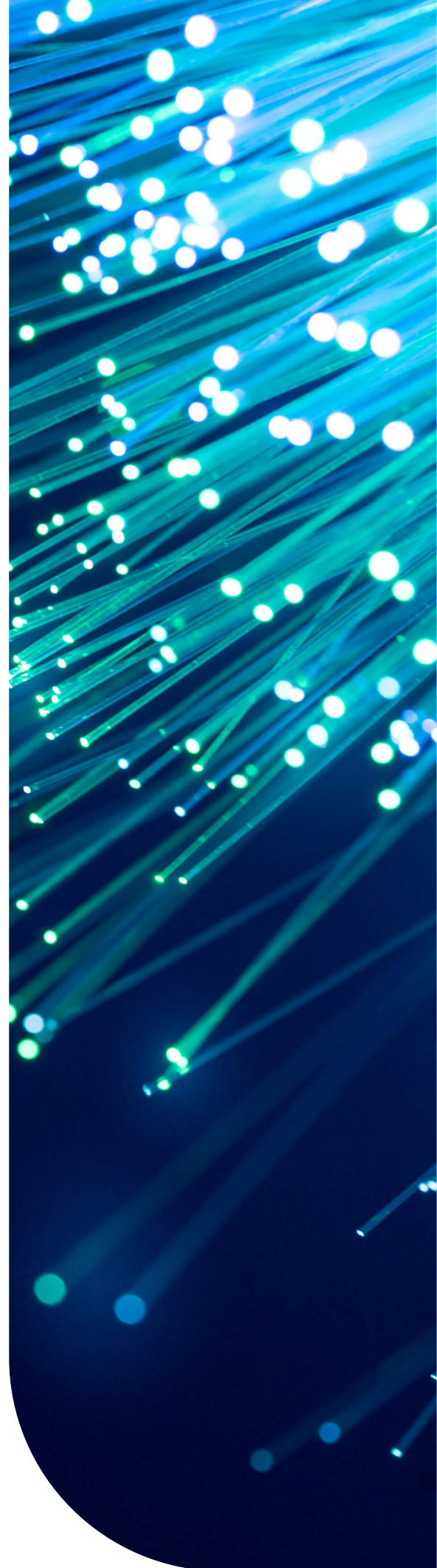
Chapter 4

INDUSTRY EVOLUTION

Industry evolution

Our fourth and final chapter draws together the three values that underpin NTT DATA: TEAMWORK, CLIENTS FIRST, and FORESIGHT. We strive to build a deep understanding of clients' business, their needs, and the broader changes at play in the sector in which they operate. This expertise enables us to build tailored guidance and solutions that can be trusted – even in more challenging times such as these.

COVID-19 is likely to disrupt certain industries and create new windows of opportunity in others. Regardless of the level of impact, businesses across all sectors have been compelled to rethink their strategies and look for ways to adopt the ultimate flexibility.

This chapter will focus on the ways that COVID-19 has reshaped four key industries for NTT DATA: insurance, telecommunications, automotive and banking.
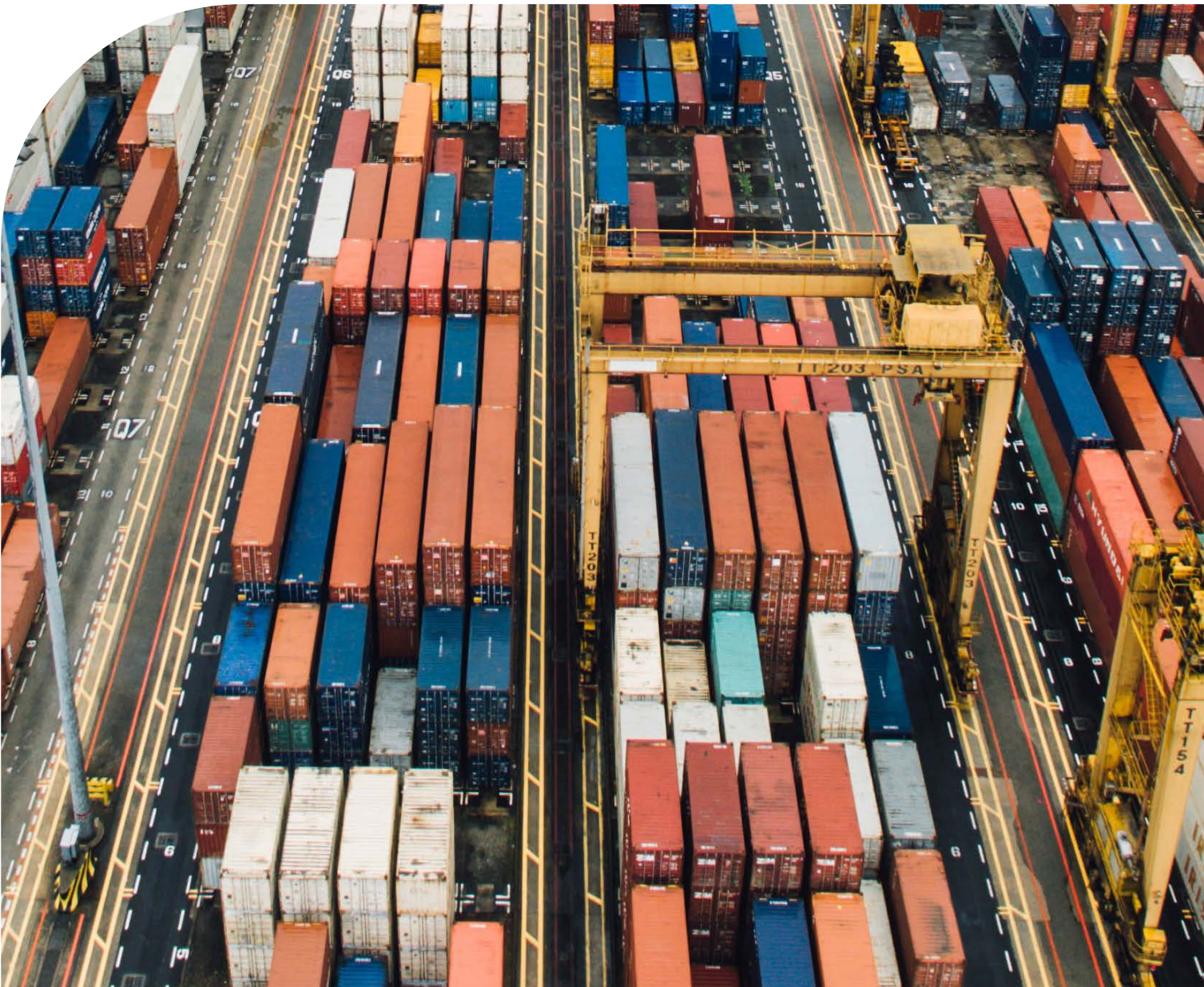
Insurance

With investments losses, market volatility, and a rise in claim costs related to the pandemic, what strategies can we expect to see from insurers to weather the storm and come out of the pandemic stronger and more resilient?

True digital transformation

For a long time, consumers and businesses have sought digital claims services and are no longer content only with picking up the phone, or print and post. Customers increasingly prefer photo and video claims, and there is a swelling preference for online signatures and smart contracts to secure authentication.

Insurers are familiar with these trends, and even without the impetus of the coronavirus pandemic, the destiny of the insurance industry has always seemed digital. Nevertheless, the coronavirus pandemic has the potential to fast-track this development.

If insurers do manage to get on board with digitalisation of their services, then they can expect improvements in customer satisfaction as a result of improved flexibility and accessibility and a rapid return on investment for claims handling.

"How insurers respond to customer needs in this crisis depends greatly on their operational and technology preparedness … Insurers that offer proactive and empathetic customer engagement will manage the crisis better and retain customers when the tide turns. Insurers must capitalise on the opportunities and up their investments in innovative products and services."

Sabitha Majukumar
IDC, How Is COVID-19 Impacting the Insurance Industry?,
30 March 2020

"Services digitalisation has extended beyond traditional insurance services. Insurers are now offering new and innovative services to their clients aiming to position themselves as the ecosystem champions.

The COVID-19 emergency has brought increased pressure to insurers. Business model redesign and adoption of technological solutions that extend their value chain are needed to enable the interaction of different providers. These create value through interconnected services that address multiple client needs with a seamless and integrated customer experience. NTT DATA Italy, thanks to its deep experience and capabilities in Customer Experience, IoT, Data & Intelligence, Cyber Security and IT Optimisation, is supporting one of the main Italian Insurers as it undergoes business model transformation, reshaping the buying of insurance IT architecture foundations."

Sergio Dizza
**Head of Insurance, NTT DATA Italy**

Automation

Robotic process automation (RPA) looks set to be a particularly attractive next step for insurers as a way to build resilience for this crisis and the next. Even before this pandemic entered the picture, the industry was well suited to RPA. Processes such as underwriting, claims to process, invoicing, renewals, and policy servicing have always driven high volumes of mundane, repetitive work – sapping resources, time and effort.

Manual, error-prone input is common, and there are typically plenty of systems that aren't interconnected – increasing the burden and lowering efficiency. Besides people costs, these manual processes cause a time lag between data entry and the availability of that data, and limit the time available for highly-valuable data analysis.

One example of successful RPA implementation in the sector is NTT DATA's recent work for Tokio Marine Kiln (TMK). It was quickly embraced by the company's employees – as an enabler rather than a threat – and has reduced staff turnover. With some tasks now completely automated, the business is now adopting more intelligent automation beyond RPA – using cognitive technologies such as artificial intelligence and machine learning to automate more complex processes.

Working from home and mixed-shoring

One of the more obvious core effects of the virus has been that it has prevented the face-to-face interactions so valued by the current broking model. Over the years, insurance organisations have gradually begun to come around to the idea that flexible and remote working models can appeal to younger workers, but until now, many have been hesitant to roll this out more widely. This pandemic has been the clear clarion call for action, and many brokers are now going through very rapid adoption of technology processes and are updating their work from home policies to facilitate this.
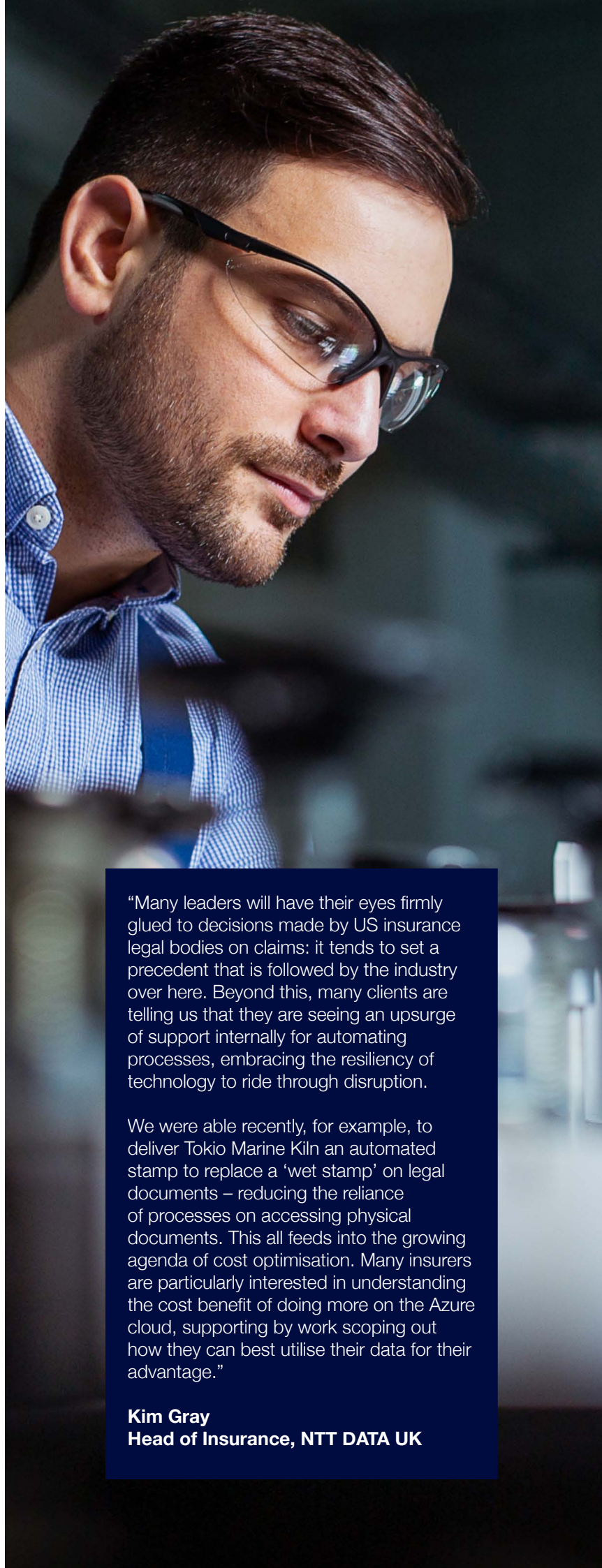
"Many leaders will have their eyes firmly glued to decisions made by US insurance legal bodies on claims: it tends to set a precedent that is followed by the industry over here. Beyond this, many clients are telling us that they are seeing an upsurge of support internally for automating processes, embracing the resiliency of technology to ride through disruption.

We were able recently, for example, to deliver Tokio Marine Kiln an automated stamp to replace a 'wet stamp' on legal documents – reducing the reliance of processes on accessing physical documents. This all feeds into the growing agenda of cost optimisation. Many insurers are particularly interested in understanding the cost benefit of doing more on the Azure cloud, supporting by work scoping out how they can best utilise their data for their advantage."

Kim Gray
Head of Insurance, NTT DATA UK

> "I wonder how many of these new working processes will become embedded within companies. In the intervening months after the current isolation, how many people will say 'thank goodness we don't have to use that anymore and we can go back to doing what we were doing before'? Instead, it may well be that insurance operations in the long-term embrace benefits of this new way of working, perhaps splitting operations between at home and in the office."
>
> **Matt Jarman
> NTT DATA UK, Insurance
> Client Partner**

In all likelihood, there will be several newly implemented working practices which insurance companies will embrace to maintain the level of business that they were not expecting during this time. And with benefits such as the reduction in costs of people travelling across the country and the opportunity to find new ways to interact with customers, it will be a way of working that few insurers will want to completely abandon once the pandemic subsides.

Indeed, remote working experiences is already prompting some to challenge their core assumptions. For one of NTT DATA's major insurance clients, there's a realisation that its employees in digital delivery needn't work onsite. Without the ability to co-locate, the organisation has moved to distributed and remote delivery of their digital platforms. Aside from the benefits that this could bring to their onshore staff such as work flexibility and employee retention, this now offers data to the company that is likely to suggest, given the current quality and throughput metrics, that having some delivery capability in another location, "mixed-shoring", will provide a comparable level of quality but at much lower cost.

Time to market acceleration
Insurers' clients will be looking to protect themselves and their employees in the COVID and post-COVID world. Critical illness cover and "premium" policies, workers insurance realigned to reflect more remote working, comprehensive business interruption insurance to protect against future disruption, and coverage extension in health insurance and e-health services, all look to be the key market trends.

With this in mind, insurers will be looking to accelerate time to market through modular and on demand products that go beyond traditional insurance business (such as telemedicine) and meet the crisis' needs. Beyond this, they may also need to forge new partnerships and ecosystems in order to manage these new products and services from different providers.

For pricing existing products and services, insurers will be hoping to stay on their toes. As noted in the Gartner report, How Insurance Industry Product Leaders Can Thrive in Uncertain Times, "with more virtual events, remote working arrangements and reduction in travel, the risks and hazards for workers' compensation insurance, event insurance and business continuity insurance considerably change. The risk and hazard move from the workplace to the home office environments. […] Various risk classes will undergo changes in premium pricing."

Telecommunications

Isolation and lockdown has put telecommunications at the heart of our social survival and become ever more critical for ensuring connectivity when in person is no longer an option. Keeping workers connected and productive even when they have to be physically apart. How is the industry adapting now and how will it prepare for post-coronavirus future?

Supporting infrastructures under pressure

Quarantines and self-isolation measures imposed in many EMEA countries have fuelled the use of extended telecoms services and are testing the capacity of infrastructure. In Italy, the Milan Internet Exchange statistics show that data traffic (both fixed and mobile) usage growth has increased by 53% from a peak of 0.75 Tbit/s before COVID-19 to 1.15 Tbit/s.

In the UK, BT recently said that it experienced an evening peak in traffic of 17.5 terabits per second (Tb/s), driven by videogame updates and streaming football. As people have started to work from home extensively, it has seen weekday daytime traffic increase 35-60% compared with similar days on the fixed network, peaking at 7.5Tb/s. Media reports indicate that voice calls have also risen by 50%.

Telco operators are now in the midst of preserving connectivity and protecting the network from being overwhelmed by the high demand – monitoring the network closely and identifying and responding to issues, and building out more headroom when needed.

Remote working

Like many other sectors, the telecommunications sector has reoriented day-to-day operations and brought in remote working for most activities that do not require physical presence on site. As a result, businesses have been compelled to transform and innovate to continue delivering value to customers while at the same time protecting the welfare of staff.

One example of the scale of this change is in customer care operations. When an NTT DATA client, a national telecommunication company, was forced to close all call centres when the pandemic struck, it left them reliant solely on their digital channels. Despite internal existing concerns about the risk of such a move, business has continued with minimal interruption. The company has seen 92% of their self-care services executed online with a measurable increase to service quality and Net Promoter Score (NPS). These changes prompted by COVID-19 has led to a fundamental review of the telco's service strategy, with the business exploring the investment opportunities that would be opened up by cost-cutting the operational cost of their call centres.

Given this positive experience of online-only service, telecoms may well start exploring the possibilities of focusing on an omnichannel digital experience with an emphasis on digital self-service. NTT DATA expects more use of AI solutions like chatbots and virtual agents, as well as web communication solutions which can help employees to work remotely. This would likely lead to more resilient, cost-effective businesses in the sector, with the tools for quick decision-making, efficient resolution of internal processes, and bespoke customer care.

5G and fibre rollouts

Many telco companies have stressed that their priority is preserving existing infrastructure and meeting demand, and expansion projects are generally being temporarily pushed back. However, expansion may not be put on hold for long, as long term, these capabilities will be key differentiators.

> "There is an obvious temptation for operators to pull back from investing in big projects right now, with cash in short supply as customers struggle to pay their bills. However, telcos should do whatever it takes to keep going with 5G and fibre rollouts. There will be a life after COVID-19 and these vital infra-structure projects will play a critical role in everyone's future success."
>
> **Alastair Masson
> Head of Telco Media Tech, NTT DATA UK**

Cyber security

Telecommunications companies will always be the channels of choice for coronavirus related fraud, whether this be phishing emails, or bogus instant messages. Customers expect that their providers will take action, limiting the spread of malicious messages and bad-faith actors.

> "Telcos […] must join the proactive fight against criminals who use emergencies to ramp up bogus email or messaging campaigns that aim to trick users into clicking links and infecting their computers. Telcos must cooperate more closely with agencies like the European Commission, ENISA, CERT-EU, and Europol to fight cybercrime."
>
> **Dan Bieler
> Forrester, The Coronavirus Crisis Puts Telcos Back On The Map As Strategic Providers, April 1st, 2020**

Supporting Government to take data driven decisions

Telcos have a huge role to play during this emergency to support local governments to face the crisis and ensure social health and safety.

In Germany, Austria and Italy major telco operators are working with local governments providing anonymous data about people location being compliant with EU and local privacy laws. The same EU commission have disposed on European Telcos aggregated data on users to analyse mobility patterns.

Collecting aggregated information about the movement of the people can help decision makers to predict the geographical evolution of the pandemic based on people move and the risks of contamination as well as trigger COVID 19 exposure. This data driven approach helps also the executive authorities to understand when and where to relax or reinforce lockdown measures, they will also be able to check if the local emergency services and health systems can support the spread and will give to individuals information on tracking virus exposure or about the effectiveness of self-quarantine.

In Italy during the initial phase of the spread in Lombardy, Vodafone provided aggregated and anonymized data from their network to compare population movement before and after the lockdown to local authorities. These insight were used to assess how the lockdown worked to reduce the virus spread.

> "The social impact of this collaboration is huge. Beyond connection, Telcos are delivering data insights to governments to take anti-crisis actions, to predict business and social impacts as well as grant secure movement of the people, in respect of GDPR and privacy laws. This role will be even more important to effec-tively manage the after-lockdown phase and enable all of us to a safe return back to the new-normal."
>
> **Nadia Governo
> Head of Telco & Media, NTT DATA Italy**

> "To address people's urgent needs, Telcos are supporting lots of customers by offering additional data and voice packages for free and launching several healthcare and educational initiatives.
>
> As a result of those investments, telecommunications companies are building a bank of resilient customer loyalty that will pay-off post-COVID-19."
>
> **Nadia Governo**
> **Head of Telco & Media,**
> **NTT DATA Italy**

> "The coronavirus crisis provides a great opportunity for those telcos that think creatively about addressing urgent customer needs at this trying time to emerge as trusted partners. Connectivity is a true general-purpose technology, as it affects the entire economy and has the potential to significantly alter our societies."
>
> **Dan Bieler**
> **Forrester, The Coronavirus Crisis Puts Telcos Back On The Map As Strategic Providers, April 1st, 2020**

Cementing customer loyalty

How three brands are helping customers

O2

- 'Zero rating' NHS and other social welfare websites to ensure data consumption on the site is not counted towards a final bill.
- Providing help to customers who may have financial difficulties connected to the payment of their bill.
- For organisations with over 500 employees, providing a free mental health app and SaaS security.
- Implementing a reduced rate for bedside telephones used by patients in over 130 NHS hospitals.
- Giving the O2 arena over to the NHS to use as a training facility.

Virgin media

- Giving over 2.7 million Pay Monthly customers unlimited minutes to landlines and other mobile numbers, plus a 10GB data boost, at no extra cost, for a month.
- Looking at ways it can help its customers if they find it difficult to pay their bills.
- 'Zero rating' any NHS websites for mobile data.
- Giving a million customers who currently pay for speeds under 100Mbps a free boost from superfast broadband to ultrafast fibre broadband.
- Giving millions of its TV customers extra TV channels to enjoy together.
- Securing new films on current release to watch, following the closure of cinemas.

TIM

- Providing unlimited mobile traffic to all customers with an active mobile data plan.
- Providing unlimited voice traffic for all fixed clients without unlimited calls plan
- Adhering to the Torino City Love initiative, providing 750 hours of assistance to elderly people and families
- Developing the UFIRST platform, allowing customers to avoid queues at the supermarket or drug store
- Collaborating with Double Robotics platform to enable communication between patients and their relatives

Automotive

One of the worst hit by the crisis, the automotive sector has temporarily ground to a halt with showrooms and factories mostly shutdown for over a month. As facilities start to phase their reopening we look at how the industry has adapted in this challenging time and is planning to respond strongly in the coming months.

"NTT DATA has strong roots in the automotive industry. Our clients know we can provide them with a deep understanding of the industry, business processes, and business requirements. It is this expertise in a broad range of specific topics that makes us a partner who clients can rely on during this crisis, delivering solutions for the automotive sector ranging from IT projects through to work with the business department on business requirements."
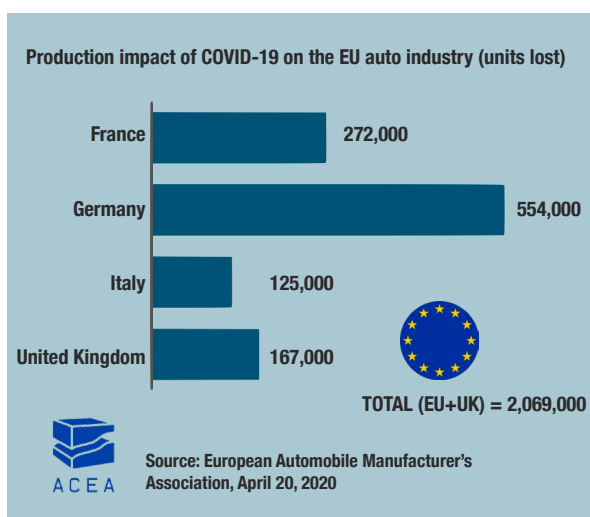
Heinz Baier
Head of Automotive, NTT DATA Germany

Continuing to deliver
Whilst plenty of projects and business areas went on pause during the peak of COVID-19, a range of essential projects that are critical for the business long-term continued. Product development work has continued within the industry. Major automotive players are generally pushing forward all projects related to upcoming launches, ensuring that as the economy transitions back to normality, they will still be able to deliver exciting new products to draw in customers.

Production impact of COVID-19 on the EU auto industry (units lost)

France	272,000
Germany	554,000
Italy	125,000
United Kingdom	167,000

TOTAL (EU+UK) = 2,069,000

ACEA

Source: European Automobile Manufacturer's Association, April 20, 2020

NTT DATA is helping to keep a range of critical systems going in the industry. One such piece of work concerned developing systems for an automotive client to assist them with monitoring

compliance of pollution regulations – work that could not stop during the crisis. This involves pulling together a process to interact with governance, delivering accurate fuel consumption data to meet requirements

Businesses continue to be supporting the crucial high budget work provided by IT. NTT DATA is continuing to deliver in this area in various ways. We have ongoing projects helping clients to integrate system engineering into the development life-cycle, cutting time to market and development costs, and enabling long-term growth and innovation within the automotive industry. We are also leveraging our cloud, Internet of Things (IoT) and big data expertise to support automotive players and their work on connected cars; enabling a smoother driving experience for customers and setting the stage for future exciting applications of next-generation technology in the automotive space.

Innovate with sales and experiment
The initial lockdown prompted shutdowns in physical locations, forcing sales processes to pivot temporarily to online-only. During this period of social distancing and reduced demand, cloud-based platforms may well prove to be the big winner. They have allowed businesses to scale with a period of varying demand, delivering their capacity needs for the current sales environment and all with a limited up-front investment.

With lockdowns starting to be eased, automotive businesses will be looking for ways to adjust their sales model to capitalise on the likely uptick in demand. Organisations are already cautiously reporting a recovery of sales in China following the lifting of the lockdown there in April.

COVID-19 may lead to an acceleration in existing trends towards multi-platform sales in the automotive sector. The crisis has familiarised the whole population with the fundamentals of utilising video-conferencing technology. Automotive businesses may respond to this shift in habits by professionalising video conversations between customers and salespeople in the sales process. This would likely become the introductory step in the sales process, allowing the sales representative to assess a customer's needs and identify the specific product they are looking for. The conversation would ideally end with the customer booking in an appointment to visit the physical showroom, where the exact vehicle to meet their requirements would be ready for them to view and try out.

Fundamentally, the market trend here is towards blending technological and physical interactions when selling a car. Modernising the sales process in this way builds relationships with customers in a convenient manner for them, with physical showrooms thereby becoming a valuable final stage to secure a sale rather than being relied upon to start new business conversations. In all likelihood, this would help the sector to find new efficiency savings and make the business more agile to potential future disruption.

Supply chains
Prompted by the period of disruption during COVID-19, many in the automotive sector are looking at ways to decouple their supply chains and reduce supplier dependency. The goal here is to ultimately build more resilient, stabilised supply chains, with more capacity to adapt during difficult circumstances and with ultimately less risk exposure for the business.

This scenario should allow for a faster digitalization of functions, tools and processes that help manage supply chain risk, accuracy and flexibility. Of particular use could be supply chain management and visibility software, giving the business the tools to analyse risks linked to the supply chain and strategise the most cost-effective ways to source the parts and materials needed by the organisation.

Repurposing
Throughout this pandemic, a key priority has been to build brands as socially responsible service providers and trusted partners. Many carmakers across EMEA have stepped up to repurpose aspects of their engineering capabilities into production lines for key items like ventilators. These businesses have acted in a rapid and agile manner, delivering at pace for the healthcare sector with new designs and production processes – often from scratch.

In Martorell, Spain, a SEAT factory floor was adapted to start making automated ventilators with windscreen wiper engines. Similar schemes have been launched to manufacture personal protection equipment. Lamborghini's plant in Sant'Agata Bolognese, Italy has been producing 1000 masks per day on its interior design assembly line and 200 face shields per day using its 3D printers on its carbon fibre production plant.

Doubling down on worker safety
Following weeks of factory closures countries that are past the 'peak' of infections are slowly rolling out plans to reopen productions. Volvo plants in Sweden and Belgium are reopening, Toyota is going through a phased reopening of plants in France and Poland, Volkswagen is reopening plants in Germany and Slovakia, and Nissan plans to reopen its Barcelona and Sunderland plants.

Across the sector, the common message in this 'return to work' is putting worker safety first. Common adjustments include compulsory personal protection equipment, restrictions on spaces where workers interact, temperature checks, and limits on the number of workers on shift. NTT DATA has a technology solution lined up to help automotive businesses monitor worker health. This involves temperature sensors in cameras at the entrance gates to a production plant, able to scan workers' faces and accurately identify their temperature. Taking steps like these may well prove crucial for businesses looking to manage the impact of the coronavirus, particularly accounting for any second wave of cases.

Looking ahead, we could see businesses exploring ways to reduce the risk of future wholesale shutdowns of their labour force. This may mean investment in technological alternatives like RPA and advanced industrial control systems to sustain productivity with less involvement of human capital labour.

Retail banking

The manner in which banks respond to this pandemic will have repercussions not only for customers and employees, but the economy too.

The COVID-19 crisis has underlined, and perhaps even conclusively proved, that the future of banking is digital. Right across the sector, banks are encouraging their customers to access banking services only via digital channels. Customers, accordingly, are becoming increasingly comfortable with technologies and inversely, are decreasing their reliance on physical branches. It has also shown us the importance of Customer Care: having a good service and a reliable customer care, is crucial when your customers are "in panic".

In the long term, consumers are unlikely to shake these habits. Digital banking makes life easier for consumers, and it's doubtful that they will want to move back to an exclusively face-to-face banking experience if their online banking experience is a positive one.

In many cases, customers will become spread across the two, and as such, omnichannel banking seems destined to become a major battleground.

Cyber security
Social distancing has pushed even more transactions online, and as such, the attack surface has shifted. This is combined with remote working from banking staff disrupting standard internal processes and creating gaps in cybersecurity oversight, potentially creating new vulnerabilities to be exploited by bad actors.

Automation and innovative fraud detection software can play a key role here, helping banks to streamline reviews of potentially fraudulent activity. Banks could also look at new security protections like multi-factor authentication to secure login points to the system and scope out investment in enhanced cybersecurity infrastructure – keeping customers and their staff safe online.

Mobile wallets
Mobile wallets can be a tremendous asset for banks and a useful differentiator as customers and potential customers make the long-term shift to digital-first banking. Besides winning new business, mobile wallets help to generate streams of actionable customer data that can then be used to improve or create new services and deals. They also provide banks and their customers with better fraud safeguards and controls.

"The new normal will boost trusted blended banking of tomorrow where financial market services will be seamlessly embedded into social as well as industrial ecosystems. The Future of Open Post-Corona Business will transform financial institutions into trusted blended assistants and advisors where transactions will be authorized via biometrics or between Machines itself. The convergence and coalescence of incumbents and new market players therefore will accelerate competitive intensity in transaction banking – fanned by the crisis digitization acceptance to the society."

Ralf Baust
Senior Vice President, Head of Banking DACH, NTT DATA Deutschland GmbH

"It is likely that banks will reconsider investments for the future, pushing on automation and stressing simplification: it's not a matter of digitalisation, because everyone, more or less, has access to a mobile app or similar. But not everyone has the same level of "digital culture" and we need to grant the access to all clients.

"Banks will also be thinking about partnership. Suppliers like NTT DATA have been critical in this phase. This crisis has been the battlefield where to demonstrate our resilience, in terms of ability to adapt to a different environment, to a different way to cooperate. We didn't lose a single day, a single bug fixing, or ticket. We, as NTT Data, perform every day, today, with the same effectiveness we had two months ago. Not easy, but this could be the difference."
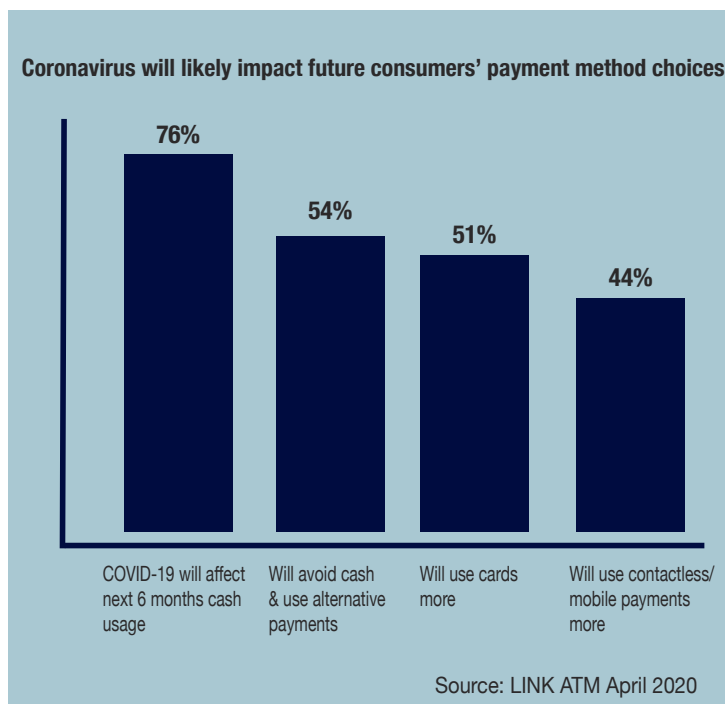
Andrea Monti
Head of Banking, NTT DATA Italy

Contactless payments

This crisis is undeniably accelerating the already significant adoption of contactless payment technologies. The World Health Organisation has advised switching to contactless payments whenever possible and, if using banknotes is unavoidable, washing hands immediately after contact. Across the world, 47 countries so far have increased the limits on contactless payments, with the goal of streamlining purchasing and reducing the amount of physical contact involved in transactions. In the UK, the limit was increased from £30 to £45, and across the Eurozone, the limit was widely lifted from €25 to €50. If banks haven't already built out contactless, now is most certainly the right time.

Coronavirus will likely impact future consumers' payment method choices

COVID-19 will affect next 6 months cash usage	Will avoid cash & use alternative payments	Will use cards more	Will use contactless/ mobile payments more
76%	54%	51%	44%

Source: LINK ATM April 2020

Even now, there are clear signs that this shift to contactless is shaping consumer behaviours. In the UK, for example, lockdown has led to a 60% fall in the number of withdrawals from cash machines, and payment card use has risen with online shopping, particularly for groceries. A survey from Link, which oversees the UK's cash machine network, suggested that 75% of people were using less cash, 54% were avoiding cash altogether, and 76% expect to use cash less and move instead to other forms of payment in the next 6 months.

We may well be entering a world where the future of cash itself is at risk.

NTT DATA UK
NTT DATA is a leading IT services provider and global innovation partner
headquartered in Tokyo, with business operations in over 50 countries.
Our emphasis is on long-term commitment combining global reach with
local intimacy to provide premier professional services varying from
consulting and systems development to outsourcing.

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