

Annual Report 2021/2022

PERFORMANCE



NTT DATA Business Solutions

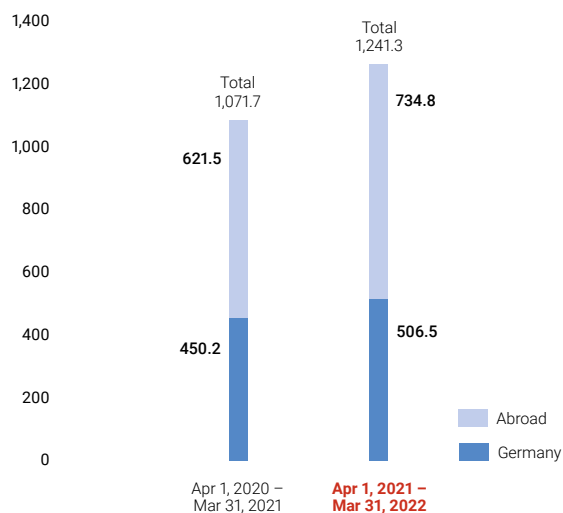
NTT DATA
Trusted Global Innovator

KEY FIGURES

MEUR	IFRS Apr 1, 2021 – Mar 31, 2022	IFRS Apr 1, 2020 – Mar 31, 2021	IFRS Jan 1, 2020 – Dez 31, 2020	IFRS Jan 1, 2019 – Dez 31, 2019
Orders on hand	1,405.1	1,262.8	1,131.9	1,032.3
Total revenues	1,241.3	1,071.7	1,071.9	1,038.2
Revenues by area				
Consulting	554.7	449.6	444.5	453.0
Licenses	65.4	63.8	68.6	67.3
Cloud Subscription	57.3	38.4	36.2	27.3
Managed Services	558.0	511.4	513.0	482.4
Other	5.9	8.5	9.6	8.2
Revenues by segment				
DACH (Germany/Austria/Switzerland)	541.8	482.9	477.6	474.7
Western Europe	183.9	157.8	160.4	162.7
North and Eastern Europe (NEE)	218.8	188.3	191.9	195.1
America	193.5	149.3	176.9	174.7
Asia	63.0	59.4	57.0	23.3
Other APAC	30.0	25.7		
Other	10.3	8.3	8.1	7.7
EBIT in MEUR	48.3	17.1	18.6	28.6
EBIT margin	3.9%	1.6%	1.7%	2.8%
EBITA in MEUR	63.5	31.0	32.0	38.4
EBITA margin	5.1%	2.9%	3.0%	3.7%
EBITDA in MEUR	107.9	75.5	77.5	84.6
EBITDA margin	8.7%	7.0%	7.2%	8.1%
Earnings IFRS	27.0	2.1	1.6	14.4
Earnings per share	0.64	-0.13	-0.13	0.32
Cashflow per share	0.67	0.65	0.04	0.82
Return to sales	2.2%	0.2%	0.2%	1.4%
Cashflow in MEUR	20.0	19.4	1.2	24.6
Balance sheet total in MEUR	971.5	905.5	900.0	852.5
Equity in MEUR	322.1	287.6	283.6	275.4
Equity ratio	33.3%	31.8%	31.5%	32.3%
ROE (Return on equity)	8.4%	0.7%	0.6%	5.2%
ROA (Return on assets)	3.3%	1.3%	1.5%	2.4%
ROCE (Return on capital employed)	5.3%	2.2%	2.3%	3.4%
Investments in MEUR	30.5	61.8	42.4	57.6
Employees as of March 31/December 31	12,176	10,601	10,267	9,357
Average	11,445	10,211	9,832	8,671
– Germany	3,570	3,423	3,427	3,378
– Abroad	8,606	7,178	6,840	5,979

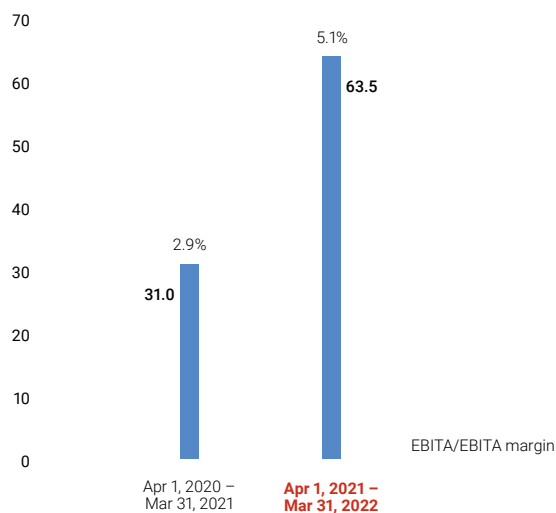
REVENUE DEVELOPMENT

MEUR



GROWTH IN EARNINGS

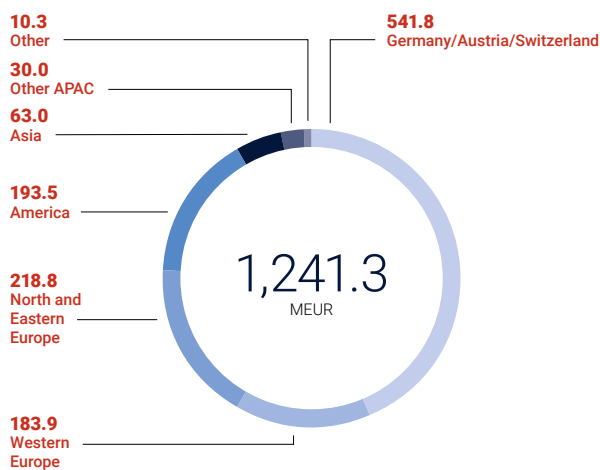
MEUR



REVENUE DEVELOPMENT BY SEGMENT

MEUR

2021/2022

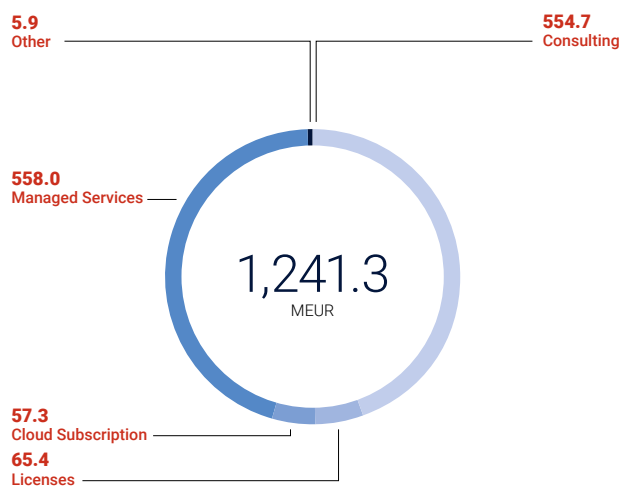


Change	+15.8%
DACH	+12.2%
Western Europe	+16.5%
North and Eastern Europe	+16.2%
America	+29.6%
Asia	+6.1%
Other APAC	+16.7%
Other	+24.1%

REVENUE DEVELOPMENT BY DIVISION

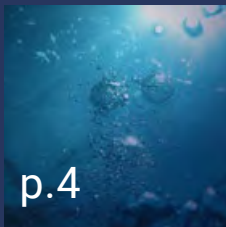
MEUR

2021/2022



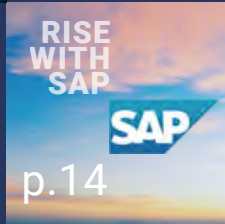
Change	+15.8%
Consulting	+23.4%
Licenses	+2.5%
Cloud Subscription	+49.2%
Managed Services	+9.1%
Other	-30.6%

For the 2021/2022 annual report, we have collected impressions from employees on their first year as NTT DATA Business Solutions and distributed them as quotes in this report:



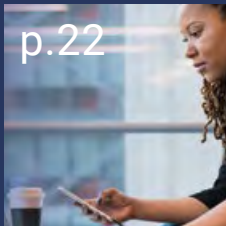
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MANAGEMENT
Interviews



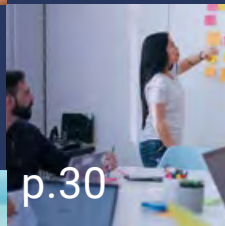
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RISE WITH SAP



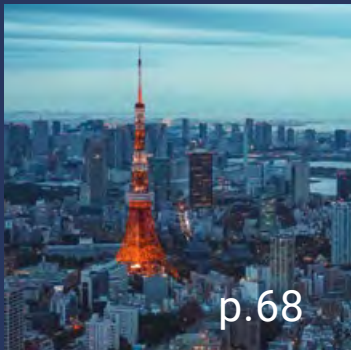
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#WOMENINTECH



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PROJECTS



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GROUP FINANCIAL REPORT



#TRANSFORMATION2021

It was incredible to experience #TRANSFORMATION2021 and see how we are growing together as a company under a single brand and with a common goal. The transition was perfectly smooth. We are much stronger than we were before and our international branding has given us global market access. I am delighted to be a part of it.

Fatih Irak

Sales & Marketing Managing Director
Turkey & MENA

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#WOMENINTECH

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The consolidated financial statements
and Group management report of
NTT DATA Business Solutions AG have been
submitted to the operator of the electronic
German Federal Gazette and can be accessed
on the website of the register of companies.

HIGH ORDERS ON HAND, A CLEAR STRATEGY, A STRONG CORPORATE CULTURE: NTT DATA BUSINESS SOLUTIONS IS WELL EQUIPPED FOR BIG TASKS

Dear readers,

We have successfully reached the end of the first fiscal year under the new brand NTT DATA – and I remember the discussions that preceded our rebranding. Many people asked if it was smart to give up the familiar itelligence brand. There was also a healthy dose of melancholy, especially among employees who have been with the Company for some time.

It has become clear now that the decision was right. Our business partners have embraced the new name well. It provides greater clarity on the market, underlines our membership of a strong global Group, and has already helped us to attract new, high-profile customers. Our international rebranding project #Transformation2021 won over the expert jury at the prestigious German Brand Awards, where we received the accolade for the best brand strategy of 2022 in two categories.

We can look back on an extremely successful year in other respects, too: In 2021/2022, NTT DATA Business Solutions not only exceeded its targets, but set new records in terms of all relevant KPIs (see overview on inside cover). The first year under our new name could hardly have gone better and the entire NTT DATA Business Solutions family should be proud of what it has achieved.

“MORE SUSTAINABLE, INNOVATIVE, RESILIENT, PROFITABLE AND ATTRACTIVE”

However, we all know we cannot afford to rest on our laurels. Quite the opposite, in fact: We must continue to press ahead with our transformation. The challenges we are facing are considerable, not least as a result of the Russian invasion of Ukraine. Having provided our employees in Ukraine with comprehensive support and having sold our business in Russia, we are now focusing on the economic ramifications of the war. This includes inflation, economic risks and security of supply for critical infrastructure.

At the same time, the digital and green transformations offer significant opportunities. Accordingly, we have initiated the next phase and launched the eXpand program with the aim of continuing the success story of the predecessor initiative, accelera7e:

We will make NTT DATA Business Solutions more sustainable, more innovative, more resilient, more profitable and more attractive to talented employees (see interview on page 4). We will expand the successful cooperation within the NTT Group. And we will harness the opportunities offered by SAP's cloud innovations (see page 18).

INNOVATIONS FOR ENVIRONMENTAL PROTECTION, HEALTH AND MORE

In this Annual Report, we present a selection of people and projects that are especially in line with our goals. The article on our modern data platform (see page 32) shows how tourist regions are reconciling sustainability and efficiency.

We also showcase innovations that are helping to overcome challenges in society: Among other things, experts from NTT DATA Business Solutions are currently working on IT-based techniques to improve animal welfare, support young high achievers, combat conditions like dementia and increase IT security (see pages 64 and 60).

We intend to build on this innovative strength and I have no doubt that diversity is an important factor in doing so. When people with different attributes, skills and perspectives come together, the results are fruitful discussions and exciting ideas. This is why we also need to continue increasing the proportion of women at NTT DATA Business Solutions. The interviews with twelve female managers starting on page 22 underline the importance of this goal.

ENTREPRENEURIAL SPIRIT FOR THE MIDMARKET

The interviewees are representative of the many other female and male employees who shape NTT DATA Business Solutions with their skills and their entrepreneurial spirit. They have all played their part in helping us to respond quickly and astutely to two major upheavals in recent times – the global pandemic and the war in Ukraine.

These achievements make me confident that we will master the tasks ahead of us. They also serve as a reminder of the most important priority when it comes to leveraging growth opportunities: Finding additional experts and talented individuals who fit the NTT DATA Business Solutions corporate culture. Because they take responsibility. Because they are team players. Because they engage in an open exchange of ideas that is not bound by hierarchies.

We offer the ideal environment for people with these attributes to work and develop while also maintaining a healthy work-life balance. This is the promise that underpins our people-first strategy.

I hope you enjoy reading this report.

Yours sincerely,



Norbert Rotter





#TRANSFORMATION2021

What has changed? On the surface, not a great deal. But when you take a closer look, it is clear that the company has been given a significant boost. Customers are seeing us in a different light. We have a new perspective on ourselves and our work. We feel united and are looking to the future under a single brand. I am sure that exciting times lie ahead of us.

Taku Kawai

Executive Vice President
Global Strategic Collaboration & Japanese Business
Germany



INTERVIEW “RECORDS IN ALL KEY
CATEGORIES”

Why fiscal 2021/2022 was so successful, how the Company has responded to the war in Ukraine and what projects it is now prioritizing: An interview with CEO **NORBERT ROTTER**, CFO **JÜRGEN PÜRZER** and **KAZ NISHIHATA**, who is responsible for NTT DATA's global operations.

“ We not only exceeded the prior-year figures and our targets in all key categories but we also achieved new records in every category. That is an achievement of which all our employees can be very proud.

Norbert Rotter

Chief Executive Officer



Mr. Rotter, Mr. Pürzer, before we turn to the results for the past fiscal year: The “accelera7e” global efficiency program has come to an end after one and a half years and you have launched a new project – “eXpand” – in early April. What are the reasons behind this?

NORBERT ROTTER (NR): “accelera7e” has made us significantly more efficient. Now we are going further: “eXpand” has a broader focus and will make NTT DATA Business Solutions not only more profitable, but also more innovative, more sustainable and more attractive to talented employees.

JÜRGEN PÜRZER (JP): We want to continue the “accelera7e” success story and make further progress in terms of process optimization and standardization. At the same time – and you might be surprised to hear a CFO prioritizing things this way – we need to move challenges like the skills shortage and the climate crisis further up the agenda.

You have announced a people-first strategy with a view to becoming a more attractive employer. What exactly do you have in mind?

NR: Among other things, we are introducing flexible work models to make it easier for people to achieve a healthy work-life balance. This also forms part of our efforts to raise the proportion of female employees to 29 percent. In addition, we will make increased use of innovative tools for employee advancement and development. In September, for example, we are launching an international trainee program with online and classroom-based formats so that we can communicate expertise, best practice examples and soft skills to young talents. One of the focal points will be SAP’s public cloud strategy.

Sustainability is another key aspect of “eXpand”. How do you intend to reduce NTT DATA Business Solutions’ carbon footprint?

NR: We need measurable reductions in the near future. In addition to buying green electricity, we are increasingly using in-house photovoltaic systems to power our data centers and office building. We also want to support our customers in their green transformation as well their digital journey.



#TRANSFORMATION2021

I am really proud that I am now officially part of the global and recognized brand NTT DATA. No doubt the transformation has strengthened our brand and improved value for employees and customers. Especially larger clients always like to find their vendors represented in Gartner’s Quadrant’s, as NTT DATA has been over years now. It clearly makes a difference also in a small market like Norway.

Morten Arnesen
Vice President
Managing Director Norway & Sweden
Norway

PRIOR-YEAR FIGURES AND TARGETS EXCEEDED

I will come back to that topic later, but first I would like to talk about fiscal 2021/2022: How satisfied are you with the results?

NR: Very satisfied. We not only exceeded the prior-year figures and our targets in all key categories – the number of employees, revenues, profitability and incoming orders – but we also achieved new records in every category. That is an achievement of which all our employees can be very proud.

JP: As the CFO, I am particularly pleased that we were able to significantly improve our profitability, as already mentioned: Our EBITA margin after non-recurring expenses amounted to 5.1 percent and our operating margin before non-recurring expenses was 6.7 percent. “accelera7e” made a significant contribution to this.

To what extent was business impacted by the coronavirus pandemic in the past year?

JP: I would like to start by emphasizing that our employees have done an outstanding job during the pandemic. We quickly

transitioned to the new way of working and hybrid models more or less became the “new normal” in the past fiscal year. At a financial level, we benefited among other things from the fact that many customers have chosen to intensify their digital transformation as a result of the pandemic.

Mr. Nishihata, in your role on the NTT DATA Board of Directors, your responsibilities include business in Europe. How do you assess the past fiscal year for your subsidiary in Bielefeld?

KAZ NISHIHATA (KN): I would like to take this opportunity to congratulate Norbert, Jürgen and the entire team for what they have achieved. They exceeded the targets by some distance, and that is impressive. I am especially pleased that the Company effectively achieved a margin of around seven percent, which has been the target for some years now. This underlines the fact that NTT DATA Business Solutions is making very good progress.

REBRANDING HAS RESULTED IN GREATER CLARITY

In the past fiscal year, the Company began trading under the new brand rather than its traditional name, itelligence. In last year’s interview, we talked about how this was engendering melancholy, especially among employees who have been with the Company for

some time. Looking back, how has the rebranding gone? Has it had the desired positive effect?

NR: As the fiscal year progressed, it became increasingly clear that the decision was the right one. It has increased our visibility – especially in the upper midmarket, but also among young talents. We have attracted new, high-profile customers and increased the number of projects implemented together with NTT DATA Group companies. We have also prevented any negative effects by successfully communicating the rebranding, both internally and externally. Even long-standing customers have been understanding the decision, with many saying they had been anticipating it for some time.

Have you retained the latitude for making decisions like you expected and hoped?

NR: Absolutely. However, the dialog with our colleagues in Japan has intensified, which is a development that I expressly welcome. Close contact is essential if we are to optimally coordinate our strategies and generate synergies.

KN: I have been working with Norbert Rotter for more than ten years. Customers used to need to be told that itelligence was part of the NTT DATA Group – a powerful global group that provides the Company with extensive consulting and support. The rebranding has resulted in greater clarity for customers and the market and further strengthened our sense of solidarity.

OUR SAP SERVICE PROVIDER FOR THE MIDMARKET

In May, you announced that NTT and NTT DATA would bundle their activities outside Japan and operate under a single identity in the future. What do you hope to achieve with this decision and what does it mean for NTT DATA Business Solutions?

KN: With global competition intensifying, it is important for the NTT Group companies to become closer. We are confident that this will allow us to leverage additional synergies and develop

#TRANSFORMATION2021

The past fiscal year was undoubtedly the most exciting time since I joined the company. Our new branding has been a huge success on the German market. To make sure it stays that way, we need to work to further expand our market presence in the midmarket segment in particular, that is quite important to us. The single brand identity has laid extremely strong foundations for achieving this.

Florian Sackmann

Managing Director Customer Engagement
Germany

■ ■ We are aiming for revenues of BEUR 1.24–1.30. This would represent an increase of up to six percent even after losing around MEUR 7 in revenues from Russia. Our target is an EBITA margin after non-recurring expenses of around six percent.

Jürgen Pürzer

Chief Financial Officer



■ ■ The rebranding has resulted in greater clarity for customers and the market and further strengthened our sense of solidarity.

Kazuhiro Nishihata

Representative Director and
Senior Executive Vice President
NTT DATA Corporation



even better solutions for our customers. NTT DATA Business Solutions plays an absolutely central role as our leading SAP service provider for the midmarket. The importance of the Company is further underlined by the fact that we appointed Norbert Rotter to the global leadership team as a Senior Vice President in June 2022. He is one of our most experienced and respected managers, not just internally but also among customers and industry observers.

Mr. Rotter, Mr. Pürzer, the end of the financial year was dominated by the Russian invasion of Ukraine in late February. What was your response?

NR: First of all, we made sure that we were systematically implementing the sanctions against Russia. This was followed by a discussion of whether we still want to do business in the country in the wake of this violation of international law. All parties quickly agreed that the answer was no. We have since handed over our Russian subsidiary to the local management team at extremely favorable conditions in order to enable our long-standing employees to remain in work. I believe it would have been irresponsible for us to wind up the company and leave our employees out in the cold. And selling the business to a third party did not appear promising.

ASSISTANCE WITH LEAVING THE COUNTRY AND NEW EMPLOYMENT CONTRACTS

JP: We also organized relief efforts for our Ukrainian employees and their families. We assisted them in leaving the country and offered them employment contracts at other Group companies. Some of them are now working for us in Poland and Germany. We also organized various fund-raising campaigns.

KN: We in Japan and throughout the entire NTT Group are proud of how quickly and resolutely NTT DATA Business Solutions has worked to support employees in Ukraine.

What has been the financial impact of withdrawing from Russia?

JP: We effectively gave away our Russian subsidiary, which resulted in limited non-recurring expenses in the past fiscal year.

On the other hand, NTT DATA Business Solutions benefited from some non-recurring effects and developments in 2021/2022. You already mentioned that many customers have chosen to intensify their digital transformation as a result of the pandemic. Your travel costs have also fallen and salary growth has been slower. With this in mind, how big is the risk of setbacks in the current fiscal year, including with regard to the economic fallout of the war in Ukraine?

JP: It is true that the factors you mention have given us a boost. Having been particularly hard hit in 2020 as a result of the pandemic, we also enjoyed significant catch-up effects in the consulting revenue segment in particular. At the same time, we are confident that we will remain on an upward trend this year.



#TRANSFORMATION2021

Although itelligence and NTT DATA Business Solutions Malaysia had always worked closely together before, I felt an imperceptible shift in our relationship with the renaming. itelligence had always been German-centric, whilst NTT DATA Business Solutions Malaysia was locally run. With the renaming an invisible barrier has been lifted, that has hampered a deeper integration before. The renaming and the merger will no doubt release new synergies from a shared identity.

Gloria Chan

Managing Director of BU MY & Head of Delivery
Global Field Consulting
Malaysia

#TRANSFORMATION2021

The strength of the NTT DATA brand has generated synergies in areas such as legal and compliance. The next step is to harness this strength in our operations by managing risks more effectively and eliminating inefficiencies. Colleagues from a wide range of units are already cooperating on key topics as a matter of course – leading to optimal outcomes.

Pat Dalki

Vice President & General Counsel
USA

WE INTEND TO RAISE OUR DAILY RATES

NR: We are increasingly having to deal with the economic consequences of the war – not least in the form of high inflation, which is likely to lead to further salary growth for experts and talented individuals. Furthermore, our travel costs are increasing again. We therefore also intend to raise our daily rates.

Do you believe there is scope for doing so? Lots of companies are planning to tighten their belts in response to the geopolitical and economic uncertainty...

NR: We are seeing the first signs of reluctance to invest in some sectors. However, we have a high level of orders on hand, and our customers are continuing to prioritize digital transformation – especially with regard to the cloud. This will benefit us as it has done previously. Although the geopolitical situation means that forecasts are currently subject to considerable uncertainty, I agree with Jürgen Pürzer and am confident that we will achieve our targets.

What targets have you set yourselves?

JP: We are aiming for revenues of BEUR 1.24-1.30. This would represent an increase of up to six percent even after losing around MEUR 7 in revenues from Russia. Our target is an EBITA margin after non-recurring expenses of around six percent.

Costs are rising, and standardization and process optimization are becoming increasingly important. With this in mind, does it make sense to end the successful “accelera7e” efficiency program?

JP (SMILES): If I remember rightly, I said last time that the decentralized history of the Company meant there was a considerable backlog to be addressed in terms of standardization and process optimization. We have made significant progress in the context of “accelera7e”. But again, I would reiterate that we will continue to work hard on these topics as part of “eXpand”. For example, the first rollouts of our cloud-based Group-wide ERP system are scheduled for the current fiscal year. Cost discipline and cash management will also remain important.

GREAT PROGRESS IN CASH MANAGEMENT

What is your assessment of how cash management is developing?

JP: The finance organization and the management team have succeeded in establishing cash as a fourth KPI in our operating units – alongside orders on hand, revenues and EBITA. This means we now have monthly reports and regular analyses. We have also initiated specific measures in areas such as overdue receivables.

NR: Since Jürgen Pürzer took over as CFO, I am delighted to say that we have made great progress in our cash management in a remarkably short space of time.

What are the other key projects and challenges in the current fiscal year?

JP: Although the market environment is positive, there is a shortage as far as the most important resource of all is concerned, namely people. With this in mind, our main focus will be on quick and efficient recruitment, long-term employee retention and strengthening the international division of labor with a view to our major shoring locations in India and Turkey. Accordingly, we are setting exactly the right priorities with the "eXpand" program. I firmly believe in the philosophy that success breeds success. That is why I intend for us to systematically press ahead on the successful path we have adopted with Norbert Rotter and the global management team.

SUPPORTING CUSTOMERS IN THEIR GREEN TRANSFORMATION

Mr. Rotter, you mentioned earlier that you want to support customers in their green transformation as well as their digital journey. What are you planning in this area?

NR: We are taking various approaches. One central area is logistics: We are optimizing many of our projects in order to lower emissions. We want to expand on our efforts and develop additional innovative solutions. We also want to make it easier to measure the positive effects. Along with reducing emissions, we are working with our customers on solutions that will allow us to make progress on other environmental, social and governance criteria. For example, SAP-based HR management systems open up great opportunities.

Mr. Nishihata, how important are climate-friendly investments and innovations from your point of view? What is planned at the level of NTT?

KN: NTT group will aim to achieve carbon neutrality by fiscal 2040. Also, we will aim to be a leading sustainable company and to address environmental and energy issues is a part of this. Sustainability is a big issue, especially for recruiting young

people. The activities related to DE&I, CSR and ESG, which are part of sustainability, are also very important. For DE&I, we will focus on improving the ratio of women among employees and managers. I highly appreciate the effort for the promotion of sustainability.

Mr. Rotter, Mr. Pürzer, you have set yourselves the target of doing more business with higher margins. What is the reasoning behind this?

NR: We are continually expanding our business model with a view to SAP's RISE program, which will have a significant impact on our product business. We want to expand our business with in-house software and offer our customers additional services.

FROM A PROJECT PARTNER TO A CONSTANT COMPANION

JP: We need to get better at developing from a traditional project partner into a constant companion for our customers.

Are any acquisitions planned this year?

NR: Yes, we are continuing to look around this year and our aim is to expand further. At the same time, the geopolitical situation is posing additional challenges. We are currently planning at least one more acquisition in Germany.

Mr. Nishihata, will the increased geopolitical rivalry between nations with democratic and autocratic systems have an impact on the NTT Group's global expansion strategy?

KN: That is undoubtedly a risk that we need to take into account. We need to be prepared for various geopolitical situations. Close coordination with our partner SAP is especially important.

Thank you all for taking the time to talk to us. ■

RISE
WITH
SAP



A GAME CHANGER FOR CUSTOMERS AND MORE

How can companies implement their digital transformation quickly, easily and sustainably? **RISE** with SAP is the answer: a comprehensive cloud package comprising software, consulting and operation. The package is falling on fertile ground where the customers of NTT DATA Business Solutions are concerned – although there are still some challenges to be overcome.



#TRANSFORMATION2021

As a Group, we can provide a unique combination of products and services. We are stronger than ever under the joint name. Prospects and customers alike have characterized this on multiple occasions as “impressive”. The renaming also forges stronger internal bonds between the NTT DATA companies. The strategy has already proven its value.

Frans Nieuweboer

Senior Director Global Life Sciences Industry & Benelux Business
Unit Life Sciences Life Sciences & Chemicals
Netherlands



“RISE is a game changer – not just for SAP, but for us, too,” says **NICOLAJ VANG JESSEN**, Executive Vice President Global SAP Alliances. “RISE allows us to help our customers to implement their digital transformation more quickly.” That is exactly what SAP aims to achieve with RISE. In addition to software, it provides customers with support and services for digitalizing their business processes. One of the central components of RISE with SAP – as the package is officially known – is the S/4HANA Cloud, which allows customers to control their accounting, finance and logistics processes, among other things. RISE also offers a platform that companies can use to analyze and optimize their business processes based on the large volumes of data generated. Instead of buying licenses for individual SAP programs and operating them in-house or externally via a third party, RISE keeps everything in a cloud hosted by SAP or a hyperscaler partner.

“With RISE, SAP is offering a kind of concierge service,” explains **LARS JANITZ**, Executive Vice President and Head of Global Managed Services (GMS). System landscapes are becoming increasingly complex. Companies today typically use products from more than one provider, so they need a platform that can help them to manage a wide range of data, services and connectivity with other systems and sub-systems. SAP’s Business



NICOLAJ VANG JESSEN is Executive Vice President with global responsibility for Innovation and products, Global SAP Alliances and the region Nordics and Eastern Europe (NEE). He was the co-founder, partner and CEO of the company 2C change, which was acquired by NTT DATA Business Solutions ten years ago.

Technology Platform, which also forms part of RISE, is an increasingly popular option for achieving this. Transitioning processes to the cloud is a highly complex task, especially for large companies. "RISE aims to help customers to reduce the complexity of the transition," says Janitz. Accordingly, it begins with an analysis: What are the biggest challenges for the customer? "RISE uses a roadmap to support the company's journey with comprehensive services, from infrastructure to process consulting."

What form does that take in practice? NTT DATA Business Solutions is the ideal partner for companies embarking on this journey to digitalization, says **STEFAN ELLERBRAKE**, Executive Vice President Global Field Consulting Services (GFC). "We use the RISE roadmap to work with our clients to enhance their processes and their system landscape." Ellerbrake emphasizes that the aim is not to turn the company on its head. "RISE is about transitioning customers to a scalable platform that enables them to adapt and establish processes quickly and flexibly in the future. RISE helps us to make our customers future-proof."

An example: A rapidly growing pharma company is evolving from a pure research and laboratory facility into a producer in its own right. NTT DATA Business Solutions works with the company to develop a transformation roadmap. RISE allows the applications and the platform to grow in line with the company's development.

In other words, RISE with SAP is not only providing customers with new opportunities, but also opening up additional areas of activity for NTT DATA Business Solutions. Ellerbrake: "RISE will enable us to expand our traditional consulting portfolio to an even greater extent." In advisory services, for example, value cases and roadmaps can be prepared to illustrate specific scenarios to customers. Or process engineering can address the question of how to make existing and future processes more efficient for customers. "New tools like Signavio from SAP are helping us in this respect," says Ellerbrake.

But RISE with SAP is also having an impact on the NTT DATA Business Solutions portfolio in non-consulting areas. The company has been developing tailored software solutions for its customers since the 1990s, previously under the name itelligence. And this expertise is more important than ever. "SAP is actively motivating us to develop software packages that will make the RISE concept even stronger as a platform," says Nicolaj Vang Jessen. The platform-based nature of RISE allows detailed and dedicated approaches to be developed and used throughout the SAP product range. This is the key to addressing industry-specific and company-specific challenges. "The ability to deliver products like this makes us even more relevant for customers," explains Vang Jessen. "The relationship between NTT DATA Business Solutions and its clients is intensifying further as a result, meaning that the prospects for the future are favorable."



LARS JANITZ is Executive Vice President for Global Managed Services. Born in Dresden, he studied information technology and joined NTT DATA Business Solutions back in 2011, when it was still known as itelligence. Since the start of his career in 1993, he has dealt intensively with support services and managed services in the SAP environment, mostly in senior managerial positions.

RISE with SAP is proving especially popular among new customers. "We are one of the most successful RISE resellers. That is partly because we addressed the market very quickly," says Nicolaj Vang Jessen. However, it is also true that not all customers are willing or able to opt for RISE just yet. Larger companies in particular have well-established platform structures and tried-and-tested cloud solutions or use SAP ERP on-premise, so a new all-round solution appears too complex to them right now. Here, too, the proximity and confidence that NTT DATA Business Solutions has built over a long time with its clients is indispensable. "We are a partner and a service provider in one," says Lars Janitz. "We support SAP's strategy as one of its biggest and most loyal partners." At the same time, his focus is on the customer. "If a customer is looking at RISE, we can give them comprehensive support. But if they prefer another approach, we try to find the right solution there, too." Nevertheless, he and his colleagues firmly believe in RISE's long-term prospects. Nicolaj Vang Jessen: "SAP will again enjoy great success with RISE in the coming year. And so will we." ■



#TRANSFORMATION2021

I have always felt part of the NTT DATA family and our vision and values have been embedded into how we work. As part of the NTT DATA Group, our brand now has a global strength and resilience as one of the world's leading IT-Service Providers. Many of our long-standing customers have welcomed this – especially our larger customers.

Karen McLaughlin

VP Managed Services

UK&I Executive Management Team

UK



STEFAN ELLERBRAKE has been working at NTT DATA Business Solutions, then still known as itelligence, for more than two decades. He has been a member of the management since 2005 and manages the Western Europe region. Since 2017, the business administration graduate has also been responsible for the Global Field Consulting Services division, where he and his team focus on the global standardization of processes and methods in the consulting business of NTT DATA Business Solutions.

INTERVIEW “OWN IP IS THE KEY TO
OUR SUCCESS”

RICARDO FACHIN knows a thing or two about developing in-house business applications. As the founder and CEO of NTT DATA Business Solutions Brasil, he has been involved in own IP for more than two decades. In this interview, he talks about how in-house solutions can make the difference in global competition – and why they will remain important in the future.



You have been a part of NTT DATA Business Solutions, then still known as itelligence, since 2019. How has your company changed in the meantime?

We are much stronger now than we were before the merger. We have established ourselves as a major player in the technology market not only in Brazil, but throughout Latin America. And our integration is helping us to generate new impetus in terms of content. We make use of NTT DATA's research and development centers and are becoming more innovative. For example, we have the capacity to hugely accelerate our customers' digital transformation. Ultimately, the benefits of the merger are also illustrated by the figures: In 2021, we achieved our best results in over 20 years as a company.

How do you manage to still set your own priorities?

Being part of a large group does not mean losing our brand core. Rather than offering our customers less than before, we now offer them added value. They can select from a portfolio that is far broader than previously. And, of course, they can get the same products from us as before with continuous enhancements. Good personal relationships are one of the main reasons we retain our customers' confidence. Specifically, although we are growing as a company and our structures are changing as a result of the merger with NTT DATA Business Solutions, our customers deal with the same familiar contact persons as before. The key positions are still held by the same individuals. In other words, our customers get the highest standard of technology – including own IP – implemented by people they know and trust.

How did customers respond to the takeover?

Our customers responded extremely positively – as our figures alone clearly demonstrate. But a process like this does not succeed by itself. We did two things right. We involved our customers from the very beginning, explaining our plans and working closely with them throughout the rebranding process. And we made it extremely clear in our communication that our own IP solutions and their enhancement were one of the key reasons for the acquisition as far as NTT DATA Business Solutions was concerned. Own IP is in our DNA and that will remain the case.

In 2018, you launched ECG, a cloud-based software solution for tax and accounting. In 2019, you equipped your GUEPARDO tax software with machine learning functions. What new opportunities for software development will emerge from the integration with NTT DATA Business Solutions?

GUEPARDO and ECG are strategic pillars of our company. Needless to say, we are continuously working to improve them so that they meet the needs of the respective tax authorities and become even more user-friendly. To date, the integration into

#TRANSFORMATION2021

#TRANSFORMATION2021 into NTT DATA Business Solutions has strengthened our brand enormously. We now work even more closely with colleagues around the globe to provide high-quality services to our customers. This is also a very positive signal towards the market: We are even more valued by major customers as a reliable and strong partner/service provider, with SAP leading the way.

André Walter
Vice President, Head of GMS Cloud Infrastructure Services
Global Managed Services
Germany

#TRANSFORMATION2021

Transforming a successful brand being around in the SAP market for a long time was a challenge – but NTT DATA Business Solutions has achieved this with outstanding results. In India we especially benefit from the close networking of NTT DATA companies around the world. We work in strong, multinational teams now. I am proud to be part of the new NTT DATA Business Solutions community.

Prabha Sunder

Vice President – Managed Cloud
Managed Cloud
India

NTT DATA Business Solutions has allowed us to invest approximately R\$ 7 million (around MEUR 1.3) in the development of our own IP products – more than ever before. As I have global responsibility for the NTT DATA product portfolio and strategy, I know that cooperation and joint innovations with our partners and customers are an important aspect of the company strategy, as they allow us to operate on the market with greater flexibility and adaptability. Our own IP gives us a decisive competitive edge and will strengthen our growth for the long term.

What were the biggest challenges when it came to integrating your own IP into the new group?

The most important thing was to give the other Group companies an insight into our own IP portfolio. The NTT DATA Business Solutions Group has an extremely broad IP spectrum. A number of companies in other countries market their products globally. At the same time, a number of global customers are also active in Brazil. This makes global coordination essential if everyone is to benefit without treading on each other's toes. We need to ask: Where do the services within the Group complement each other? Where is there functional overlap? What are the opportunities for integration? This is the only way to ensure smart and strategically minded coordination in the future. We are making good progress.



What proportion of NTT DATA Business Solutions Brasil's success can be attributed to its own IP strategy?

We have always been convinced that developing own IP is the key to our business success. Even when cooperating with global partners like SAP and their large delivery teams, the decisive strategic difference has been the fact that our research and development activity always focuses on how to combine the best aspects. Our membership of the world's sixth-largest technology group is thanks to our commitment to reaching the top with our own IP. We have never wavered in this belief.

Looking ahead, how do you expect your business in South America to develop and what are your medium-term goals?

Entering the Latin American market represents a big step in the global integration of the NTT DATA brand. It also gives us a big opportunity to strengthen our market position. Our goal is to act as a hub for other Latin American countries, strengthen our own IP range and obtain broader access to the international market. ■



RICARDO FACHIN is CEO of NTT DATA Business Solutions Brasil and a board member. He leads the software and services business in Brasil and focuses on medium and large enterprises in various industries. He is responsible for GIP (Global on IP), which is transforming the software business model. He holds an MBA from London Business School.

#WOMENINTECH

“THERE ARE VERY FEW BARRIERS TO TALENTED WOMEN IN THE IT INDUSTRY”

NTT DATA Business Solutions is shining the spotlight on female managers with its #womenintech social media campaign. Female managers say that the Company is doing a lot to advance women. But female candidates and young women in the workplace often lack the self-confidence to seize the opportunities – even though the industry is a better fit for them than they might think.

#TRANSFORMATION2021

Our transformation has sharpened our position within NTT DATA Group as THE SAP company -- for employees and customers. The new branding has given us a boost in attracting and retaining talent in this highly complex SAP environment. On top of that it helps to secure our talent's jobs and creates a broader horizon for professional development in the digital age – in the medium and long term.

Dieter Schoon

Executive Vice President Global People
Germany





Why is it relatively few women choose to pursue a career in IT? I think it's because women in general are more inclined to other disciplines. Even at school, naturally girls tend not to go for technical subjects. IT companies like NTT DATA Business Solutions can create awareness & showcase what IT industries can offer as early as possible by reaching out to schools and universities. And they should help women, especially mothers, who are already in the industry, to achieve and maintain a work-life balance.

Rachelle Ann de Chavez Fortu (Malaysia)


Delivery Manager Services

ANNE HILJANEN is Senior Director at NTT DATA Business Solutions. She is responsible for HXM Solutions in her home country of Finland. The fact that she is a woman has never really been an issue for her in the workplace. “The question of gender in a professional context hardly ever crosses my mind,” says the 47-year-old. At school, she was interested in math and science. “Whereas stereotypically ‘female’ subjects like literature and writing never appealed to me,” she says with a laugh. She studied technology and business at university, where almost exactly half of the people on her course were female. In 2005, the IT and SAP consultant teamed up with three colleagues to form their own SAP consultancy: Pasafin Oy – a specialist for SAP HR. The company soon had 15 employees and enjoyed such a strong market position that it was acquired by NTT DATA Business Solutions (then still known as itelligence) in December 2020. If NTT DATA’s management has its way, no one will bat an eyelid at the thought of a woman taking on this kind of leadership role in the future. The Company is pursuing a systematic diversity strategy which has recently attracted additional attention thanks to the #womenintech social media initiative.

But a woman simply choosing to enter the IT industry and pursue a career there, like Anne Hiljanen did, is still something of an exception. The culture at many IT companies is shaped by men – which makes things difficult for women. And the impact is also being felt by NTT DATA Business Solutions. Every time there is a selection procedure for a new position, **BIANCA PEL**, who has headed the NTT DATA Business Solutions Application Management Team in Den Bosch since 2020, specifically asks the HR department for the résumés of female applicants. However, she finds that the candidates themselves often have reservations when it comes to the IT industry. And she doesn’t blame them. Having moved between sectors several times, she worked in public administration and aviation before beginning her IT career. “There were more women in those other industries, including at management level.”

The 50-year-old and her team of 13 employees manage and look after around 40 customers in the Benelux region. She feels valued as a female manager at NTT DATA Business Solutions and is happy to confirm that the Company has an open and equitable culture: “It is true that I am often the only woman at management meetings here in the Netherlands. But that is not down to a lack of effort on NTT DATA’s part. Quite the opposite, in fact. The culture here is extremely open and HR management is eager to ensure more women in management positions.” Bianca is optimistic for the future: “If we organized events where women can talk about their careers in IT, we could show off the IT industry in all its diversity. For many talented women, this would help to accelerate the shift from a formerly male-dominated environment to the diverse workplace of today.”

Many successful female managers at NTT DATA Business Solutions believe that women should have the confidence to try IT. **DOROTA MANKOWSKA**, Head of Digital Supply Chain in Germany, says: “Women often work in a very structured way – and IT needs planning!” She adds that the profession involves a lot of human interaction and working with processes, colleagues and customers. “We’re not just computer nerds or hardware junkies. Contrary to the cliché, IT requires the human touch. This makes it a good fit for a lot of women. The problem is they are sometimes still unaware of just how many diverse roles there are within the IT industry.” She says it is right for NTT DATA Business

 The number of women in the industry is steadily increasing, simply because they are starting to believe in themselves. There is nothing about IT that puts me off. If anything, I think women are a good fit for the industry: They work in a structured way and IT needs planning. Moreover, IT involves a lot of human interaction – and that is something women are often very good at.

Dorota Mankowska (Germany)
Head of Digital Supply Chain

“A generation ago, very few women in India would have considered a career in IT. Marriage and children were the only priority – pressure from within the family would have ensured this was the case. Today, young women are graduating from university and targeting a job in IT as their first choice.”

Sailaja Vegesna (India)
Senior Delivery Manager

Solutions to actively communicate this potential to young people. “They need to be informed about the opportunities, ideally while they are still at school.”

This is exactly the task **CHRISTINA SCHÖNE**, now Head of Training at the NTT DATA Business Solutions location in Dresden, has set herself with her colleagues. She knows from experience how important it is to have confidence in one’s own abilities and strengths. In her case, it was her father who encouraged and supported her in her decision to study business informatics. When a trainer found out during a potential analysis that Christina would be very well suited for a leadership role, it almost caught her off guard. “I was really surprised,” she says, laughing.

Today, as part of career orientation and training, she is committed to showing young people prospects and opportunities in IT, to developing them personally and integrating them successfully into working life. She is herself a mother of almost grown children and has experienced first-hand how difficult it can be for young people not to lose sight of the big picture - given the many opportunities in working life. She advises aspiring female IT professionals not to just want to meet the expectations of friends and family: “It’s important to make the decision for yourself,” she says. “And that’s often the hardest step.”

In particular, the balancing act between job and family can be difficult for many women who flirt with the industry. “Shift work and working at night or over the weekend are commonplace at many other companies in the IT industry,” says **RACHELLE ANN FORTU**, Service Delivery Manager at NTT DATA Business Solutions in

Malaysia. “Needless to say, that can be a real challenge.” But NTT DATA Business Solutions offers a very good working environment, says Christina Schöne. She is particularly pleased by the support her supervisor grants her, never feels left alone by her employer. And: “Working remotely in difficult times has always been a great help,” she says. NTT DATA Business Solutions responded to the coronavirus pandemic at a very early stage and with absolute flexibility. Remote working and hybrid working have become part of the new world of work. Anne Hiljanen from Finland is full of praise for this development. She has a five-year-old son and the changes in response to the pandemic mean she can now spend more time at her computer in rural western Finland, where the family has a holiday home. This has made her life a lot easier.

“Nothing is more important to us than addressing the needs of all members of the NTT DATA Business Solutions family to the greatest possible extent in order to create a unique culture for our employees”, says Dieter Schoon, Executive Vice President Global People at NTT DATA Business Solutions. “Flexibility is a key aspect of this. It is the only way for us to secure our Company’s optimal position as we balance the competing priorities of efficiency, resilience and sustainability.”

ZSUZSANNA SZAKACS, Managing Director of NTT DATA Business Solutions in Hungary, has some good advice for young women with career ambitions: Get organized and be clear about what your goals are. “I have three daughters,” Zsuzsanna says. “I’ve always told them they should plan their careers carefully and see children and family as an intermediate step in the process –

“Why is it still fairly rare for women to opt for a career in IT? Maybe they don’t know what a fascinating industry it can be. Girls often choose a career at a very young age – so they need to be informed about the opportunities of tech while they are still at school.”

Carrie Fenton (UK)
Delivery Management Practise Manager (UK SDM Team)

a kind of project.” She had her first daughter at a young age, while she was in her final year at university. “That was part of the plan,” she explains. “Because it’s a good time to have children. It gets more difficult later in life.”

Anne Hiljanen from Finland is pleased that NTT DATA Business Solutions is the new home for her start-up. She carefully scrutinized the company that acquired her consultancy in 2020. Pasafin Oy had an almost exclusively female workforce. This may have been simply due to the fact that it specialized in HR consulting for the SAP environment and HR is generally still seen as a female-dominated area. “I have always hired employees solely on the basis of their expertise,” says Hiljanen. It was no problem for Anne and her female team to become a part of the NTT DATA Business Solutions world. As she puts it: “The chemistry was just right!” ■

Over the years, I have learned that my supposed weaknesses as a woman can also be strengths. Men frequently underestimate me – and I use that to my advantage. For example, if people are willing to forgive me for asking lots of questions, then I make sure I do! That way I end up learning more.

Zsuzsanna Skakacs (Hungary)
Managing Director
NTT DATA Business Solutions Hungary



**EMBRACING DIVERSITY:
NTT DATA BUSINESS SOLUTIONS' DIVERSITY STRATEGY**

NTT DATA Business Solutions began addressing the topic of diversity almost 15 years ago. The Diversity Promotion Office was established in 2008 with the specific aim of advancing female high potentials. Supporting women at all levels has been a matter of course for HR officers since 2012. The Company signed up to the United Nations “Women’s Empowerment Principles” in 2019 and issued a new statement on diversity, equality and inclusion in 2021: “Bloom the Power of Diversity”. Today, women make up 29 percent of NTT DATA Business Solutions’ global workforce. For comparison, the percentage of women as a worldwide average for the industry as a whole is just 24 percent. 16 percent of managers at NTT DATA Business Solutions are female.

Tech companies need to invite more women to the leadership table so that our voices are heard and we can develop more pathways for women to advance their careers in the technology field.

Shawnee Schauff (USA)

Vice President of Marketing, North America



CARRIE FENTON is married and lives in Edinburgh. After leaving university she ended up working on a SAP project more or less by chance. She then worked for British Telecom for 15 years before moving to NTT DATA Business Solutions three and a half years ago.



SHAWNEE SHAUFF earned her degree in public relations and mass communications and began her career as an ERP and technology marketing specialist in the late 90's. She has been with itelligence/NTT DATA Business Solutions since 2016. She lives in the Greater Cincinnati area with her husband and daughter.



MARILIA RAMOS lives in São Paulo with her husband and a nine-year-old daughter. She has a degree in international trade and got to know the SAP world as a user of SAP Logistics. She became an SAP Sales & Delivery consultant before moving to NTT DATA Business Solutions in 2010. She became a Delivery Manager in 2018.

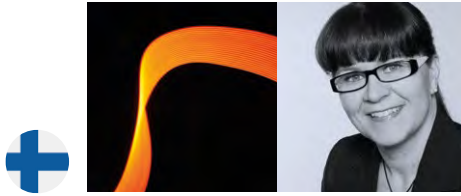


SAILAJA VEGESNA has worked in the tech industry for more than 20 years. After obtaining a masters in computer science, she worked as a Director before joining NTT DATA Business Solutions in July 2021. She is married and has two sons. She lives with her family in Hyderabad.



RACHELLE ANN DE CHAVEZ FORTU comes from the Philippines but now lives with her husband in Malaysia. They have one child. After obtaining a degree in industrial engineering, she began her career as a SAP Basis Engineer before becoming an Operations manager and taking up her current role in September 2020.





ANNE HILJANEN is Senior Director at NTT DATA Business Solutions. She heads the HXM Solutions division in her home country of Finland.



DOROTA MANKOWSKA is from Poland originally but now lives with her husband in Berlin. They are currently expecting their first child. She studied mathematics, obtained a doctorate in transport and logistics and moved to NTT DATA Business Solutions in 2017 after two and a half years with another consultancy.



CHRISTINA SCHÖNE, Head of Training at NTT DATA's Dresden site, is committed to helping young people recognize the opportunities the IT industry offers them – especially young women.



BIANCA PEL is Team Manager Application Management in Den Bosch, the Netherlands. With 20 years of experience in an IT environment she often was the only woman in management meetings. Although she feels valued and sees an open and equal culture at NTT DATA.



ZSUZSANNA SZAKACS is married and has three adult daughters. After IDS Scheer acquired her first employer, the qualified engineer became the managing director of its Hungarian subsidiary in 2001. Following several takeovers, she has now been with NTT DATA Business Solutions since 2013.

IT is still a male-dominated industry. People think of it as involving lots of overtime and business travel – aspects that make it unattractive for women. At the same time, expertise is particularly important in IT. There are very few barriers to talented women in the IT industry.

Marilia Ramos (Brazil)
Delivery Manager Managed Services

IT projects seize on change and bring it to bear in an organization. But a few projects go beyond this, forging ahead to the “leading edge”: These beacons show what will be possible in the future; they define a new standard that all latecomers then aim for. At the top of this field you will find employees of NTT DATA Business Solutions, whose concept of progress combines technologies, forms structures, and shapes cultures that are fit for the future. And some of them even use colorful bits of paper so that our customers can set themselves higher targets. It is not technologies alone but successful projects that shape the next level.

RESILIENT. INNOVATIVE. SUSTAINABLE

PROJECTS

#TRANSFORMATION2021

After 17 years with itelligence, I needed to take a moment to reconcile the facts and my emotions – even though, objectively speaking, I knew this was a good move and the right thing for us to be doing. To make the rebranding a long-term success, we need to ensure that we retain our established culture. This is the only way to truly harness the benefits of the large new NTT DATA Group.

Dr. Andreas Pauls
Executive Vice President
Regional Head DACH
Germany



SEEING BUSINESS
ANALYTICS AS A PART
OF VALUE ADDED

EFFECTIVE BUSINESS CONTROLLING FOR THE LONG TERM

Of course, it is possible to gradually update your existing IT assets or impose an innovative solution. The same is true for business analytics. However, companies often prefer to scrutinize the content and processes of their established structures so that they can develop a new target, both professionally and technologically. This provides the basis for a valid decision on whether a brownfield or greenfield approach is the best way to achieve a future-proof architecture that meets the requirements of business units, IT and operations.



If you believe the advertisements, the dairy industry is a world of picture-postcard cows, lush green fields, blue skies and little fluffy clouds. The reality for dairy companies can be rather different: utilization statistics, price controlling, market analyses and functional cost transparency. The dairy cooperative Deutsches Milchkontor (DMK) wanted to optimize its most important reporting system, because transparency in the value chain also plays a key role in this industry. In 2020, the dairy group was the 12th biggest company in the sector with annual revenues of around BEUR 5.6.

“Before the joint project began, DMK pursued very different objectives,” says Gerhard Baier, Director Business Analytics & Information Management at NTT DATA Business Solutions (NDBS), recalling the tender process. The company previously focused on updating the existing reporting systems and optimizing parts of the solution. “Certain tasks relating to KPIs and analytics were time-consuming and tended to be error-prone, meaning that answers to important business questions were not available as quickly or precisely as desired.”

EFFICIENCY LOSSES IN REPORTING

Broadly speaking, DMK had two options: introduce a new solution platform with a new analytics approach, or upgrade the existing reporting landscape with a specific focus on further automation. However, individual elements of the established solution, like data extraction and preparation, did not work well together. Media and technology discontinuities were commonplace and the system had been used for years without effective governance. “Ultimately, the solution had become complex, with a lot of individual components but no holistic overview of KPIs and business processes.” This was the verdict of the NDBS architects who were involved in the preliminary phase of the project. For example, there were different requirements and views of KPIs that were often similar, leading to efficiency losses in the business units and IT.

PUTTING EVERYTHING TO THE TEST

“Based on the insights gained and applying the NDBS trusted advisor approach, we recommended approaching the project as more than just a technical optimization project,” Baier recalls. The CFO of the DMK Group also set out clear criteria for the primary business focus of the new control model: What is the company’s strategy, what value-added processes does this involve and how can I measure these processes? To ensure long-term success, this meant scrutinizing the original project approach, as the technology itself was not the real issue.

The answers to controlling-relevant questions helped to establish a clear-cut vision that served as the basis for defining a stable target architecture. Accordingly, DMK took a future-oriented approach by bringing forward a business administration project lasting almost a year. “Once this greenfield basis was established, we then worked with the client’s IT department to begin implementing a solution based on a modern architecture for the control model in Finance and Accounting,” says Baier, summarizing the starting position for the project.

BW/4HANA MEETS SAC

Christian Steiner came on board to perform project management at NTT DATA Business Solutions, design the model and structure a state-of-the-art analytics system landscape with BW/4HANA and SAP Analytics Cloud Reporting. “My first task was to design the IT architecture for the BW system together with DMK (IT) and validate it with a proof of concept.” An extensive and complex proposition since the project encompassed reporting as well as upstream processes, e.g. data preparation for new reports. Moreover, the DMK Group consists of numerous companies, some of which were less closely connected to the central SAP system than others. For example, smaller DMK companies use non-SAP systems to deliver reporting data so that management can obtain an overall picture of the situation.

PROTECTING THE SINGLE POINT OF TRUTH

“The target architecture included a database with a single point of truth,” says project manager Steiner. This data is protected and consistent, which ensures that the business units have a uniform picture of the KPIs. “Procurement or sales should not have to create a separate data repository when using the system.” The stable core is surrounded by a layer for governance and data quality and also supplemented by a data lake. This could include data from the market or from machines for inclusion in analyses, for example. Users have access to reporting, planning, consolidation, analytics and predictive functions.

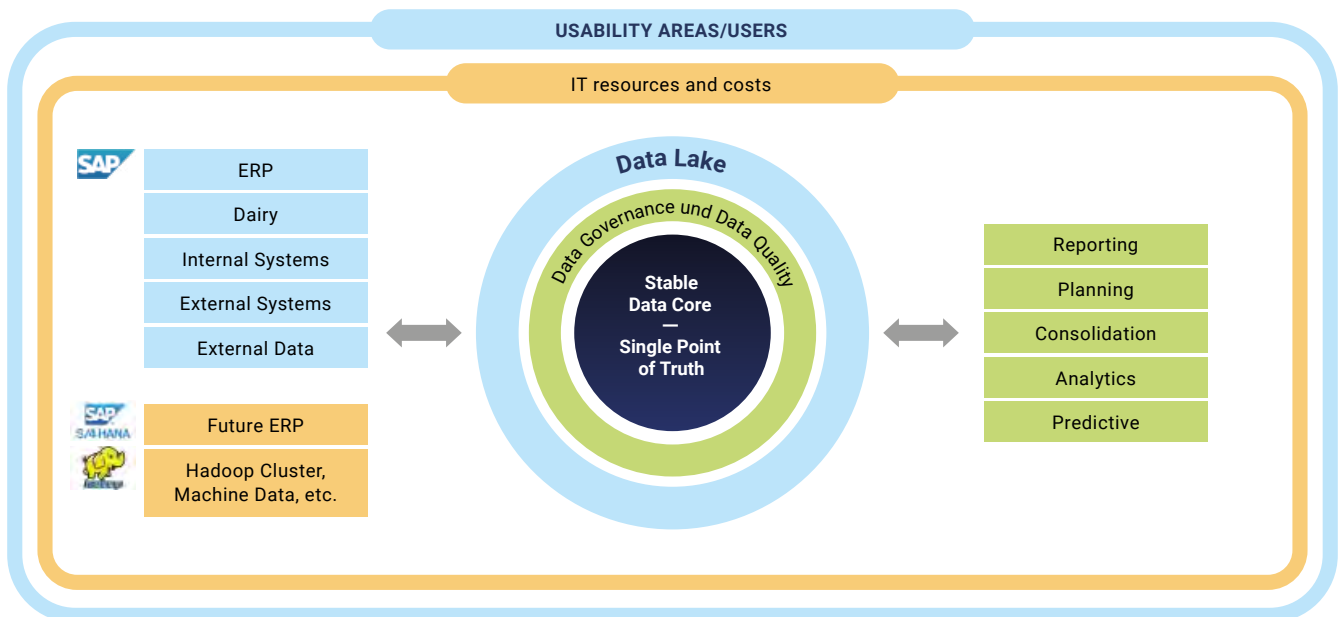
ON-PREMISES AND IN THE CLOUD

DMK has created the data warehouse on-premises with a parallel SAP Analytics Cloud (SAC) for KPI visualization and as a self-service tool for end user reporting. “These two implementations need to be based on a single technological platform in order to prevent major discontinuities and to allow data to be exchanged with good performance,” argues Steiner. DMK also uses a lot of SAP solutions, such as ECC systems and the Dairy Management

module for the dairy industry. “That is why it ultimately decided to harness the benefits of an integrative solution and take everything from a single SAP provider instead of connecting different software tools to the data warehouse, which would have also been technically possible.”

GREEN LIGHT FOR THE GREENFIELD APPROACH

In late 2020, DMK gave the green light to the plan to set up the new BW/4HANA using a greenfield approach. The first product to go live in fall 2021 was Profitability Analysis – an essential reporting component, Steiner says. “We have now added various modules to the system and are continuously expanding it to reflect the new methods developed by DMK’s specialists.” There have been some challenges along the way, even for an experienced BW expert like Christian Steiner. “Group consolidation in particular was technically demanding because different companies also sell products to each other for further processing.” And utilization statistics are a task that is specific to the dairy industry. As a cooperative, DMK has to optimally process and utilize the constituents of the milk produced by its members, i.e. dairy farmers, in order to achieve the best possible milk price.



From the very start, the cooperation with NTT DATA Business Solutions was built on mutual trust and open communication. We were able to openly discuss any issues in the knowledge that they would be understood and addressed by NTT DATA Business Solutions. It is very important for us to press ahead with this project together with the business unit, DMK IT and NTT DATA Business Solutions and to ensure that we always tackle the problems on an equal footing. Step by step, this brings us closer to the solution while also being aware that the process is key. After all, creating a single point of truth and implementing suitable analytics tools are continuous tasks.



Frank KeBling

Head of Business Intelligence & Data Analytics at DMK



FROM REPORTING TO PLANNING

Steiner feels like the journey is halfway complete. In addition to next-level reporting, the project involves next-level planning with strategic, medium-term and annual planning. This will be followed by profit center accounting and the integration of the dairy module into reporting. Sales, pricing and market data will then need to be connected, as will forecast planning. "We are establishing a comprehensive information system at DMK," summarizes Steiner. He has worked in the SAP environment for over 30 years and has been supported on the DMK project by up to ten colleagues with different professional and technological expertise, including specialists for the BW/4HANA back end system and the development of the reporting front end in SAC.

BY THE BUSINESS, FOR THE BUSINESS

According to Steiner, the objective was always to develop the process-oriented data visualizations and queries that DMK's specialists need to ensure efficient and proactive business process controlling. "Ultimately, this was not primarily an IT project; instead, it was driven by the specialist department and its requirements as

part of a close cooperation with IT." For example, the integration of profit center accounting had to satisfy 100 percent of the specifications – the result is what counts. One key factor in the project's success was establishing a homogeneous team of internal and external colleagues and IT experts from DMK and ensuring that they worked in a spirit of mutual trust and were motivated by success. "It was also important to build a strong bridge to the business unit that is ultimately responsible for reporting."

For Gerhard Baier from NTT DATA Business Solutions, the success achieved with the DMK project closes the circle: Once problems and symptoms have been identified, it is rarely effective for a company to seek to mitigate them through technical optimization alone. "Instead, we work with our clients to understand the true causes of the problems and draw the right conclusions so that we can develop and implement a solution that is tailored to their business and technological requirements." This demands a trust-based relationship between strong partners: the trusted advisor who contributes their experience and is willing to take risks for the client's benefit and the user company that acts on strategic initiatives, advances them and is willing to pursue them for the long term. ■



Gerhard Baier

Director Business Analytics &
Information Management
NTT DATA Business Solutions



Christian Steiner

Project Manager & Principal Expert
SAP Analytics Cloud Reporting
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**ANIMAL WELFARE,
SUSTAINABILITY,
EFFICIENCY**

HOW MACHINE LEARNING IS HELPING FARMERS AND LIVESTOCK

Animal welfare is compulsory, sustainability is a hot topic and efficiency is an evergreen. Thanks to digitalization, NTT DATA Business Solutions is helping the Norwegian meat producer Nortura to combine all three facets. In a pilot project, sensors and cameras in two stables are used to monitor the rearing of animals and optimally control the value chain.

Agriculture is facing huge challenges. Increasing yields, reducing the use of chemicals, protecting the environment, the climate and livestock, producing healthy food – and providing customers and suppliers with comprehensive documentation of the entire process. Digitalization is the only way to handle the various requirements. And the industry can certainly not be accused of procrastinating: GPS-controlled combine harvesters are increasingly automatically making passes through the fields, satellite imagery is optimizing the use of fertilizers, agriculture apps and applications are used to manage herds, smart feeding systems are lowering methane emissions and AI is learning to distinguish weeds from crops. According to a recent study in Germany, almost 80 percent of farmers now use digital solutions.

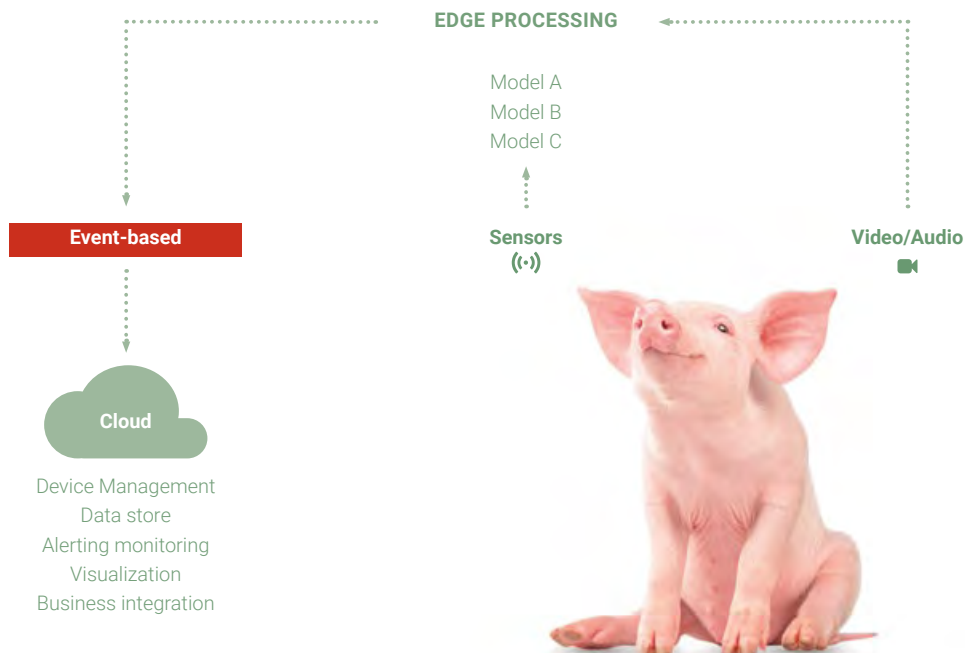
The Norwegian meat producer Nortura is also addressing these challenges, as Morten Arnesen, Managing Director NTT DATA Business Solutions for Norway and Sweden, explains: “Customers increasingly want to know the background and history of the animals before they buy the meat.” In addition to animal welfare and sustainable pig, cow and chicken farming, Nortura is seeking to improve the efficiency of its stable operations and logistics in the face of considerable competitive pressure.

DIGITAL FARM: TURNING THE STABLE INTO A SHOP FLOOR

New technologies are a powerful tool for gathering information on animals in stables and developing preventive measures to improve animal welfare. After all, very few farmers still work with a clipboard and paper. NTT DATA Business Solutions was tasked with developing an IoT concept for Nortura and advising the company on how to digitalize its farms, what sensors are required, and how cameras can be optimally configured to support machine learning models.

DATA AS THE BASIS FOR COMPLIANCE

In the proof of concept, cameras, microphones and other sensors were installed in a stable and machine learning techniques were used to collect data, recognize patterns and create reports. For example, the AI can check whether the farmer is meeting all of the legal requirements. Arnesen: “Data is the only way to show that statutory daytime light levels are being complied with.” And Nortura seeks to utilize data-driven insight to ensure that



identified animal welfare violations are tracked and farmers are advised accordingly.

AI TAKES OVER ROUTINE STABLE TASKS

About 1,500 farmers work for Nortura. The company is currently testing how the use of technology could solve some of their challenges. When farmers go into the stable, they have to check the animals, assess their weight, sense their stress level and provide them with feed and water. "These control rounds could be replaced by cameras, image recognition, microphones and sensors for CO₂, humidity and temperature," says Thomas Nørmark, Global Head of Innovation at NTT DATA Business Solutions, whose team is supporting the company in the pilot project. "Recording and carefully controlling the temperature in the stables and the animals' water consumption and feed intake helps to improve the conditions in which they are kept and leads to increased sustainability."

FINDING THE RIGHT SLAUGHTER DATE

In addition to their holding conditions, Nørmark says that the technology can be used to measure the farm animals themselves. "The AI records the size and weight of each pig and can tell the farmer in advance when the ideal slaughter date will be." The aim is to obtain the best meat and the best price while ensuring the efficient use of animal feed. Nortura can also use the information to optimize transportation from the stables to the slaughterhouse. Knowing the weight of the pigs means that truck loads can be optimized without breaching the statutory regulations.

PLANNING IN THE SAP SYSTEM

The digital twins of stables and livestock also mean that simulations can be run and forecasts prepared. "Transferring the data to Nortura's SAP system in the future would enable the company to improve its planning," adds Morten Arnesen. Because the data could be recorded at a very early stage – and not only when the animals are slaughtered – supply and demand on the meat market could be adjusted ahead of time using a big data solution and

“The cooperation with NTT DATA Business Solutions as a transformation advisor and the exchange of knowledge have reinforced our belief that digital agriculture still offers considerable economic potential. We are at the start of a long journey with state-of-the-art solutions that can benefit farmers, customers and animals in equal measure.”



data analytics, for example. “NTT DATA Business Solutions has developed an SAP backbone for Nortura, the Digital Core. Now the company can use this as a framework for innovation.”

THREE STRONG DRIVERS FOR TRANSPARENCY

According to Arnesen, the agriculture industry is increasingly interested in making its processes more transparent. “The good thing is that the impetus for these innovations is coming from different directions – animal welfare, sustainability and efficiency,” he says. Economies of scale are another consideration: “Expanding the approach to all farmers in Norway or even Western Europe serves to underline the incredible potential offered by the meat production industry.” Furthermore, the animal data as a whole is useful, e.g. for other institutions on the market, such as authorities, or the livestock owners themselves.

BROADBAND INTERNET IN THE STABLE

The main problem is not a lack of AI, IoT or big data, but a more fundamental IT requirement: Farmers need broadband Internet access if they want to digitalize their stables. The corresponding costs – Norway is bigger than Japan and Germany in terms of area – must be included in the business case. “That is why the focus right now is on identifying barriers along the way and looking for solutions,” explains AI expert Nørmark. It will take some time to determine which architecture and infrastructure best meet the requirements so that the system can be scaled for the Norwegian market.

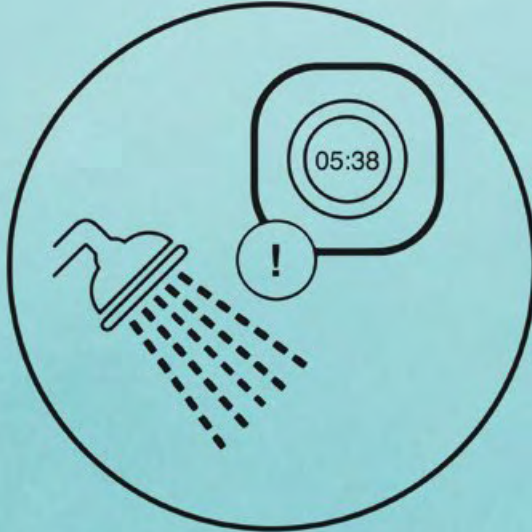
But time is on the side of the digital stable as long as consumers continue to care about animal welfare. Managing Director Arnesen is confident: “Lots of customers in Norway are now prepared to pay a few kroner more per kilo if they know the animal was well looked after.” This is particularly important for younger generations. Moreover, quality has always played a key role in food and production conditions in Norway – it is not a country where cheap meat and social dumping are tolerated. Norway produces almost 99 percent of the pork it consumes. Although it can scarcely become more self-sufficient, the digital stable would at least help it to maintain this high level. ■



**USING RESOURCES
SMARTLY**

THE DATA AND IOT PLATFORM FOR SUSTAINABLE BUSINESS MODELS

The IoT is incredibly versatile – for instance, the right technology can be used to save water, make field observations and record tourist flows. The “Nordic Green Data & Innovation Platform” from NTT DATA Business Solutions provides the state-of-the-art foundations for various use cases. It helps companies to realize business innovations and scale them successfully.





The average shower in Central Europe lasts six minutes, with considerable variation on either side. The same is true for water usage, which can range from 30 to 80 liters. However, reducing resource consumption is not simply a matter of automatically shutting off the tap after a certain amount of time. A subtler approach is called for – one that encourages people to shower for shorter periods and occasionally turn off the water while doing so. This approach is called nudging, and it aims to gently change people's habits.

SUSTAINABLE SHOWERS WITH IOT SENSORS

The Danish start-up Aguardio intends to harness this principle to lower water and energy consumption. The company has developed a sensor device for showers that shows how long the water has been running using a stopwatch-style display. Tempus fugit! An appeal to the conscience with ulterior financial motives: Aguardio's customers are not individual households, but water suppliers, hotel operators and housing companies. As such, its devices are not just isolated timekeepers, but intelligent edge



devices with sensors for sounds, temperature and humidity as well as a motion detector. They are connected to a central control station via IoT wireless standards: the Nordic Green Data & Innovation Platform from NTT DATA Business Solutions.

MODULAR, SCALABLE, CLOUD-BASED

The modular platform is cloud-based and aggregates various standard IT services. It uses a data warehouse as well as big data and machine learning tools. Due to the large number of devices and other sources whose information is processed, IoT device management is the other mission-critical aspect. Security by design gives rise to a secure platform that meets all of the requirements of customers and regulators. "As a large company, we can help with our experience and solutions", explains Thomas Kierkgaard, Director at NTT DATA Business Solutions Nordics. And the platform is also sustainable by design: "We have consistently developed and programmed the software according to green criteria." Here, too, it was important not to consume more resources than necessary.

ONE DATA PLATFORM, MANY USE CASES

There are countless use cases for a streamlined and efficient data platform. These include benchmark comparisons of heating and electricity consumption in social housing and Kierkgaard's team also uses it to collect data from field observations for municipal organizations. The data platform has achieved its greatest successes so far in the tourism sector: A team from NTT DATA Business Solutions participated with Copenhagen Business School, Danish Coastal and Nature Tourism and Destination Sønderjylland in a pilot project on the Danish vacation island of Rømø in 2020, transforming it into a "Smart Island". The analyses and forecasts were about people flows, the buying behavior of vacationers, their water and energy consumption, car traffic, weather information and social media posts. "The data converges on our platform and provides insights into contexts you wouldn't otherwise have access to - in real time."

SCALABLE FOR ALL REQUIREMENTS

In the meantime, other tourist regions have also adopted Rømø's goals: to drive sustainability, get to know guests and their preferences better, increase their satisfaction on vacation and support business in the resorts. The actual flagship project is called "Westcoast Digital" and already covers 550 kilometers of Danish coastline, with three destinations, more than 16 million overnight stays and 50 percent of the international bed nights in Denmark. Data sources for this project include mobile crowd data, ticket sales from attractions, anonymized regional card spend, summer house bookings and weather metrics. Under the name "Destination Denmark," at least five additional destinations will be connected this autumn including destinations on Zealand and the island of Bornholm, with a plan of a national rollout to follow in 2023. In addition, expansion into other travel regions has been successful, with the project Destination Bærekraft in Norway under development and a project on the Faroe Islands starting just after summer; discussions are underway in Germany, Scotland, Africa, Japan, Singapore and the USA.



“We systematically developed and programmed the software in line with green criteria.”

FROM START-UP TO SCALE-UP

“What our target industries have in common is that there is no dominant player, but rather a community of small organizations”, says Kierkgaard. One problem, therefore, is the funding of a data project. Small tourism companies and start-ups do not have the money to buy a platform of their own: “But they can afford smaller amounts over time.” In this way, the technical innovation has also given rise to a strategic business innovation at NTT DATA Business Solutions: “We help start-ups to scale up – they can start out small, and when their business takes off, everyone benefits.”

SIMPLE, SCALABLE PRICING MODEL

The financial outlay depends on the customer’s business model: In Aguardio’s case, the bill includes the number of devices sold and data sources in addition to the monthly platform fee. The focus is on simple pricing and low costs, including operating costs if no one uses the software. However, the aim of the platform is not to simply meet the requirements of a single customer. “The more the better” is the motto. “Aguardio was the pioneer, but we are now discussing the same topics with a number of start-ups.” The platform concept is ready and around 80 percent are pre-assembled. This means the solution can be quickly adapted by NTT DATA Business Solutions to the needs of the respective customer and rolled out to support their business innovation. “But we don’t sell the technologies, but access to the functionality. This allows us to flexibly redesign the platform in the back end.”

STANDARDIZED PLATFORM, INDIVIDUAL APPS

The many diverse customers differentiate themselves primarily through the custom app portal, which allows companies to put their own stamp on the design and functions of their app. “It used to be the case that water suppliers sent a bill once every billing period. Now, customers can connect their telephone to the device in the shower and be taken to a website showing their personal consumption data,” says Kierkgaard about the Aguardio case.

Utilities can also use this channel to communicate with customers and send messages about the company, water rates or sustainability. No wonder that the start-up has already attracted a number of accolades: “IoT Solution of the Year” in Denmark, recognized by the UN for sustainability and nominated for an award at the CES trade fair as well as the Danish Design Award.

SOLVING THE RIGHT PROBLEMS

The platform itself may be used to generate savings, but its own financial goals are ambitious, cloud-based office software is the blueprint for the strategy, as Kierkgaard explains. In the future, more small companies will have access to a data platform where they can share and process data. “Collecting data from an entire sector allows us to make optimizations at a much higher level and with a bigger impact.” Thanks to the data platform, a housing company can immediately see where water is leaking, which buildings consume the most electricity and which heating systems need replacing first. “The objective of data analytics is to prioritize the problems that are most worth solving – enabling customers to generate greater benefit from less investment.” ■

What our target industries have in common is that there is no dominant player, but rather a community of small organizations. We help start-ups to scale up – they can start out small, and when their business takes off, everyone benefits.



Thomas Kiergaard

Director Innovation & Technology LoB
NTT DATA Business Solutions
Nordics

Nordic Green Data & Innovation platform principles





**WINGCOPTER:
TAKING OFF WITH INTELLIGENT
PLATFORMS AND SOFTWARE**

CHANGE CREATES ROOM FOR GROWTH

A start-up on the move: Wingcopter is using SAP S/4HANA Private Cloud best practices and develops future-oriented, intelligent structures and processes. It aims to harness the power of IT so that it can work more efficiently, increase data and process transparency and adapt to new innovations in an agile manner. In this interview, **AYCA ICINGIR** from the management team of NTT DATA Business Solutions Germany explains how young companies with modest IT budgets can be supported in their digital transformation – and why change can be mutually beneficial.

Ms. Icingir, NTT DATA Business Solutions is seen as an IT partner for established companies in the upper mid-market. How did you find yourselves working with a high-flying start-up like Wingcopter?

AYCA ICINGIR: It is true that the company does not fall within our traditional target segments. But a dynamic company like Wingcopter also needs to keep its value chain as well as corresponding processes and systems under control as it progresses on its steep growth path. There is no real difference between Wingcopter and other midmarket companies in this respect. And not having a complex IT history or outdated processes and solutions can actually be very advantageous. Bolstered by the company's openness to the cloud and best practices, we have already achieved the first milestone on our journey with Wingcopter in our joint first project with S/4HANA Cloud. Wingcopter commissioned us with its SAP S/4HANA Cloud Private Edition project in early 2021 and our cooperation developed from there.

"What I found fascinating about the client was not only its openness to new technologies and the speed at which it operates, but also the vision of the company and how it clearly serves a good cause: a humanitarian service that creates added value through globally state-of-the-art, sustainable technology and services. Everywhere."

Switching to standard software is a critical transition period for a start-up organization, isn't it?

ICINGIR: It is fair to say that making the step is a big challenge, yes. On the one hand, a start-up needs scope for creativity and wild ideas. On the other hand, Wingcopter was already four years old and was swamped by the informal nature of its day-to-day business with no documented processes. It realized that this was inhibiting its systematic growth strategy and that it would be unable to optimally leverage future economies of scale if it did not begin the digital transformation of its own processes. This made it exactly the right time for it to opt for standardized processes – so that it could grow efficiently. But it was also interesting for us to experience how a company can quickly transition from this unstructured phase to a fit-to-standard approach.

What approach did you decide to take?

ICINGIR: We went in with best practices and looked at how we could fit the SAP Best Practices processes to the practical requirements within the company. The number of deviations and accompanying change requests was manageable. This kind of approach can be successful only if the customer demonstrates a great willingness to adapt to standards. The project teams from Wingcopter and NDBS followed this guidance extremely successfully. As Wingcopter did not have any established processes and was open to consulting, digitalization and innovation, the potential of expanding our cooperation was evident to us from very early on in the process.

What exactly does that mean?

ICINGIR: At the start of the ERP project, for example, we learned that Wingcopter was planning to implement the ordering, tracking and drone-based delivery of medicines using a service platform and mobile apps. As we have a proprietary product – it.XIA service – that meets exactly these requirements, we entered into discussions and quickly established that Wingcopter would probably have been unable to take on the project at the same time as the ERP project. So we had to find an unconventional way of supporting them. I am fascinated by what drives Wingcopter – the humanitarian vision of providing everyone with rapid access to medical care. That was what convinced me it was worth investing energy in a new kind of cooperation and seeking a sponsor at senior management level.





THE START-UP

Wingcopter was founded in Germany in 2017 with the aim of quickly delivering relief supplies and medicine to people in challenging terrain with no infrastructure. The company gained attention for a project in the African nation of Malawi, where medical treatment typically relies on poor road infrastructure that is heavily impacted by seasonal fluctuations and climate events. This means that health care is impaired by frequent bottlenecks affecting key medicines and medical supplies. Wingcopter supports regional health centers in Malawi by using drones to transport pharmaceuticals, health products, antibiotics and medical supplies. In addition to manufacturing delivery drones, Wingcopter now acts as a service provider for a wide range of drone applications.

www.wingcopter.com





THE WINGCOPTER VISION:
WE CREATE EFFICIENT
AND SUSTAINABLE DRONE
SOLUTIONS TO IMPROVE AND
SAVE LIVES. EVERYWHERE.

What did you have in mind?

ICINGIR: The first priority was to persuade our senior management of the merits of this type of investment, which is unusual for NTT DATA Business Solutions Germany, and the accompanying business case. The plan ultimately involved providing our it.XIA software solution for Wingcopter to use free of charge in the first year while establishing the MVP, as well as providing free consulting and development services. The aim was to continue to support Wingcopter in its digitalization process during the critical growth phase and to expand the SAP S/4HANA Private Cloud foundations to include cloud services. Our model required our senior management to believe in Wingcopter's business model in order for the business case to pay off for us in subsequent years. Initial meetings and discussions were held at C level with a view to establishing a precise understanding of the business model and building mutual trust. One objective of my plan was, and still is, for a dynamic start-up to show us how business models grow and scale up – and how the corresponding IT, process requirements and solutions can be adapted in an agile manner. The growing importance of start-up networks and sustainability has shown that Wingcopter has exactly the right customer profile we need to take unusual approaches to investing in co-innovation.

How did senior management respond to your proposal?

ICINGIR: With skepticism at first. We have some experience of these models in the cloud and with start-up companies, which means we also have a different risk assessment. By contrast, this is the first time we have invested in a start-up company in Germany in this form. Although the project does not involve us acquiring an equity interest, it does mean providing consulting services and software ahead of being paid, and that is new. Naturally enough, our CEO and the management of NTT DATA Business Solutions Germany wanted to know why we were willing to accommodate the customer to this extent. Wingcopter CEO Tom Plümmer personally outlined the company's growth

plan to our senior management as part of an open dialog in the spirit of mutual trust. This plan forms the basis for our transaction-based cloud billing models: as Wingcopter's business and services scale up, so too do the cloud services provided by NTT DATA Business Solutions. We believe in the medium- to long-term potential of the company and want to use the right IT strategy and solutions to spur on its business model so that the project becomes more profitable as the number of deliveries and services supported by our solutions increases. That is when things start to get fun financially as well as at a human level and the business case begins to pay off.

Wingcopter won an NTT DATA prize in 2020 and SAP also had the company on its radar.

ICINGIR: The timing was right. SAP has been investing in start-ups for years and had Wingcopter in mind as one of the first customers for SAP S/4 HANA RISE – Private Cloud. A cooperative dialog with SAP made us believe that this business model represents a good investment in the future. And the

Spotlight Prize at the NTT DATA Open Innovation Contest in Tokyo completed the picture. The category is open to companies that use innovative technology to help achieve the United Nations Sustainable Development Goals (SDGs). That certainly helped when it came to the investment decision.

Can you give specific examples of how your software is supporting the company?

ICINGIR: The development project for the cloud service project started very recently. The aim is to enable Wingcopter to use mobile devices to handle processes and customer services relating to drone transport. The basis is a scalable cloud solution using Azure and Business Technology Platform. The postings are then integrated into the SAP back end. Our it.XIA product was an ideal fit for the company's requirements in terms of the mobile applications. From fall 2022, people in Malawi will be able to order medicines and blood tests on their smartphone. The entire delivery process will be reduced from several days to a few hours and the use of drones with solar batteries will minimize the CO₂ emissions generated.



The project has a time frame of 36 months. What are the next steps?

ICINGIR: Wingcopter is on a growth path and open to new technologies and services. Our journey together will open up all kinds of interesting projects and potential as far as we are concerned. That is already clear from the scoping for the current MVP, where requirements for additional solutions and optimizations are being formulated. First and foremost, we will ideally have a satisfied client with a stable, modular and scalable IT landscape, a high degree of data transparency and integrated, digitalized and largely automated processes. We intend to provide continuous support throughout the different growth and stabilization phases so that Wingcopter also becomes a satisfied reference customer for the long term.

And what are the prospects for your new revenue model?

ICINGIR: Promising, because we will generate more revenue for our cloud solutions as the number of drone deliveries increases. For example, our services will scale up to an above-average extent if Wingcopter expands the scope of its drone deliveries to include consumer goods as well as medical products. Given the current growth path of the company, you can imagine how pleased we are by the success Wingcopter is enjoying. ■

What I found fascinating about the client was not only its openness to new technologies and the speed at which it operates, but also the vision of the company and how it clearly serves a good cause: a humanitarian service that creates added value through globally state-of-the-art, sustainable technology and services. Everywhere.

Ayca Icingir

Member of management
Innovation & Portfolio Management
NTT DATA Business Solutions
Deutschland



THE INTERVIEWEE

Ayca Icingir has been with NTT DATA Business Solutions Germany for 16 years and is a member of management in the Innovation & Portfolio Management unit. Her responsibilities include overall responsibility for portfolio management in Germany, product business with proprietary NTT DATA Business Solutions products and innovation management. Ms. Icingir has been an SAP Partner Business Manager for Germany since 2013 and is responsible for the programs and initiatives that contribute to the successful partnership and cooperation between NTT DATA Business Solutions and SAP SE in Germany.

WE TRANSFORM.
COFFEE INTO DATA

THE GLOBAL IOT PLATFORM FOR PROFESSIONAL COFFEE MACHINES

Melitta Professional has developed an IoT platform to collect and analyze data from over 30,000 coffee machines worldwide. This benefits the service team, operators and customers.



Mario Lütkebohle has been with NTT DATA Business Solutions for more than 21 years. He has supported numerous customers as a product developer and consultant, as well as working on the development of established tools like it.x-press and it.x-change. Keen to find the next big thing, he then trained as an innovation manager. "That is how I found myself working on the Melitta IoT project." It involved topics like IoT, data management and big data for the client, Melitta Professional Coffee Solutions. The Melitta Group company is an end-to-end partner for coffee in the out-of-home market. It serves customers in restaurants and bars, hotels, catering, community catering, offices, highway service areas, bakeries, convenience stores, cafés and coffee shops around the world, including with the professional coffee machines it develops and produces in Minden. "The project was and is exceptional," recalls innovation manager Lütkebohle. "Not necessarily because it involved incredibly innovative concepts, but because of the complexity resulting from the sheer number of machines and the need to optimally integrate all of the system components."

PROFESSIONAL COFFEE MACHINES MEET THE IOT

The amount of coffee the world consumes can only be guessed at, but estimates suggest it is more than 2.5 billion cups a day. "Melitta began making its first coffee machines IoT-ready around five years ago," Lütkebohle explains. As a result, the company can at least say for sure how many coffee drinks are prepared every day using its own IoT-connected machines – which currently number around 30,000 worldwide. All of the relevant results are sent to a central platform in real time, where they are processed and monitored. However, this first platform was only integrated into the SAP landscape to a limited extent: The two worlds existed in parallel and independently of each other.

HARNESSING THE ECONOMIC POTENTIAL OF DATA

Leveraging the considerable potential in the integration of the IoT platform and the SAP systems is where innovation manager Lütkebohle came in. His team and two other expert partners were commissioned to help Melitta to prepare for continued growth in data volumes and to open up new business opportunities:

"Melitta was not looking for a big bang transformation for one major use case, but to establish stable foundations for the realization of numerous small IoT projects involving the data from its machines." After all, in addition to statistics on drinks orders, the coffee machines send information on all kinds of events to the central platform. Data is generated when someone prepares a cappuccino or cleans the machine, when a fault occurs, when the coffee grounds container is full or when the bean fill level drops below the recommended minimum. Around a million items of data are received every day.

EVERYTHING IN REAL TIME

The portal provides real-time information on which drinks are being produced by which machines, including flavor shots like hazelnut or strawberry. Lütkebohle: "There are two machines at NTT DATA's headquarters in Tokyo – we could see which drinks our colleagues were ordering in real time." The system provides incredibly detailed insights into the machine data for service technicians and machine operators alike.

- The Melitta Professional IoT hub forms the basis for all digital services and products. It is the nerve center for telemetry-based data and applications.
- Melitta INSIGHTS is the web-based customer portal. The intuitive platform offers full transparency with regard to the machine fleet's current performance and status.

Operators can use the data in the customer portal to obtain information on the consumer habits of their end customers. For example, they can identify the best and worst performers in their product range, find out which times have stronger and weaker demand, leverage new potential and optimize machine utilization. Operators who want to change their recipe can also do this in the portal. "Now there is no need to turn on the machine just to add three grams of coffee or raise the water temperature by one degree," Lütkebohle explains. And when the machines are not in use, their display screens can be also used for promotional purposes, e.g. to show commercials or artwork from current campaigns – all of which can be controlled easily and remotely.

OPTIMIZING SERVICES, SUPPORTING CAMPAIGNS

The project also aims to ensure that service technicians can respond quickly to faults in order to guarantee an optimal customer and operator experience. The data allows service staff to intervene proactively and determine spare part requirements in a targeted manner. For example, they can see how much coffee each individual grinder has processed, when it needs to be replaced and when best to schedule the necessary downtime. The new transparency with regard to supply and demand allows Melitta Professional to address commercial operators far more accurately than previously. A tailored offer of ten kilos of espresso beans, a proposal for a joint campaign or innovative recipes to try out together with the customer – the platform makes it all possible.

SAP AND COFFEE MACHINES: THE PERFECT MATCH

The project itself lasted over two years. The predecessor to the new platform was “a huge monolith, a highly compact proprietary system that was used to analyze the data,” recalls Lütkebohle. This had to be broken down into a micro-service-based system and integrated into the SAP environment. Every coffee machine is ultimately also managed in the SAP system – “bringing together these two worlds was one of the key objectives of the project.” For example, this involved combining maintenance schedules and contracts that were previously stored in different applications.

According to Lütkebohle, another objective was to achieve the greatest possible flexibility when it comes to quickly changing and expanding the architecture. “This used to be a laborious task, but the flexible platform has made handling a lot easier.” The next step is to leverage the benefits of having combined the “knowledge” of the SAP environment and the IoT data. The integration also allows new business models to be calculated and implemented on the basis of the machine data, which would not otherwise be possible.



ONE GOAL, MANY OBSTACLES

One particular challenge was the master data that had to be enriched and reconciled ahead of being used. This is a time-consuming task for any project and the quality of this data has a significant influence on the quality of the overall solution. “We had to find out what belongs together and create a clean data set.” This was exacerbated by the coronavirus-specific circumstances and the fact that the project had to take place while business continued and new technical features were implemented on the machines. In all, around 35 to 40 experts of NTT DATA Business Solutions were involved in the project, with the core team comprising around 15 employees. “We had to continuously switch between the worlds of SAP, web and big data in order to turn the components into an overall solution”, says project manager Lütkebohle. In other words, they had to be open to new things, ready to learn and willing to step outside their comfort zone.

INTEGRATION PROJECTS NEED A “NEVER SAY DIE” ATTITUDE

The project also showed why digitalization is not progressing as planned in some regions. “Integration projects are the hardest of all,” says Lütkebohle. “But they are invariably the most rewarding projects, too.” After all, they are not about optimizing an SAP silo, but opening up to traditionally IT-adjacent areas. “We have to be prepared to put in the hard work.” This takes extensive expertise and nerves of steel – a “never say die” attitude, so to speak. Above all, however, integration projects require visionary clients with the willingness to commit to a lengthy journey of transformation. Lütkebohle: “In my 20 years of working on projects like these, I have yet to encounter any low-hanging fruit.” ■





**A NOSE
FOR
INNOVATION**

NEW SENSES FOR THE INTERNET OF THINGS

ADRIAN KOSTRZ is working on teaching artificial intelligence to perceive smells, evaluate them and use the results to control processes. Making technology that can compete with humans is no easy task. But it has started well at least – thanks to a strict training program and a good dose of coffee.

Ever since IT was invented, it has been accompanied by the question: Will humans be replaced by machines? After all, the very purpose of technical development is to perform activities more effectively – and ideally more cheaply. While this applies mainly to mechanical tasks, it is also true of human senses like sight and hearing. Today's artificial sensors are miles ahead of their human counterparts. They can screen 12,000 beer bottles an hour or hear whether pumps are suffering from wear and tear.

When it comes to smell, however, the situation is different. Admittedly, humans are not known for being especially good at sniffing things out either. But what we can do is use our nose and tongue to associate smells with objects, feelings and events in our memory – and that is where the technical challenge lies. Technology has yet to develop the skill to accurately record and interpret every scent it encounters. As the interpretation part happens in the brain, however, that is where artificial intelligence (AI) comes into play.

HOW CAN YOU SMELL QUALITY?

"My dream is for AI to be able to successfully interpret different smells," says Adrian Kostrz, Manager Global Innovation and Products/Technology Adoption at NTT DATA Business Solutions. "But we are still some way from achieving that." His goal is not to develop an artificial gourmet, but a solution that will provide process support – for example, as part of production quality control. After all, ketchup should always taste the same regardless of which tomatoes are used in its production and how ripe they are. Even when you have a standardized ingredient list and a well-established process, natural fluctuations are a part of life. Qualified testers are employed to compare the smell and taste with the standard in their heads.

AI CAN DO MORE THAN JUST DETECT GAS

"We wanted to see whether this process could be replicated using an AI nose that knows the ideal state," reports innovation manager Kostrz. Various business applications would benefit from an "artificial nose" whose capabilities exceed that of a specialized gas sensor. A classic example: Should a public toilet be cleaned on a regular cycle or as required in order to make quality assurance more efficient? In another case, a food producer might want to sniff out the actual expiry date of a batch rather than relying on rigid best before dates so that it does not unnecessarily throw out good food in the name of safety.

Will humans be replaced by machines? My dream is for AI to be able to successfully interpret different smells but we are still some way from achieving that.

Adrian Kostrz

Manager Global Innovation and
Products/Technology Adoption
NTT DATA Business Solutions



PUTTING COFFEE POWDER TO THE TEST

To train the AI's regression model, a team member had to spend three days placing coffee samples under the AI nose and labeling them. There were three potential responses: "good coffee powder", "bad coffee powder" (mixed with vinegar), and "not coffee powder" (banana). "If the coffee meets the standard, the sample is released by the process, recorded in the ERP system and sent for storage," explains Kostrz. If the nose reports a quality issue affecting the ERP system, it submits a standardized Q notification and the coffee is blocked for further use. If a banana is detected, an alarm is triggered to stop the system and a human is called.



THE HUMAN QUALITIES OF AI

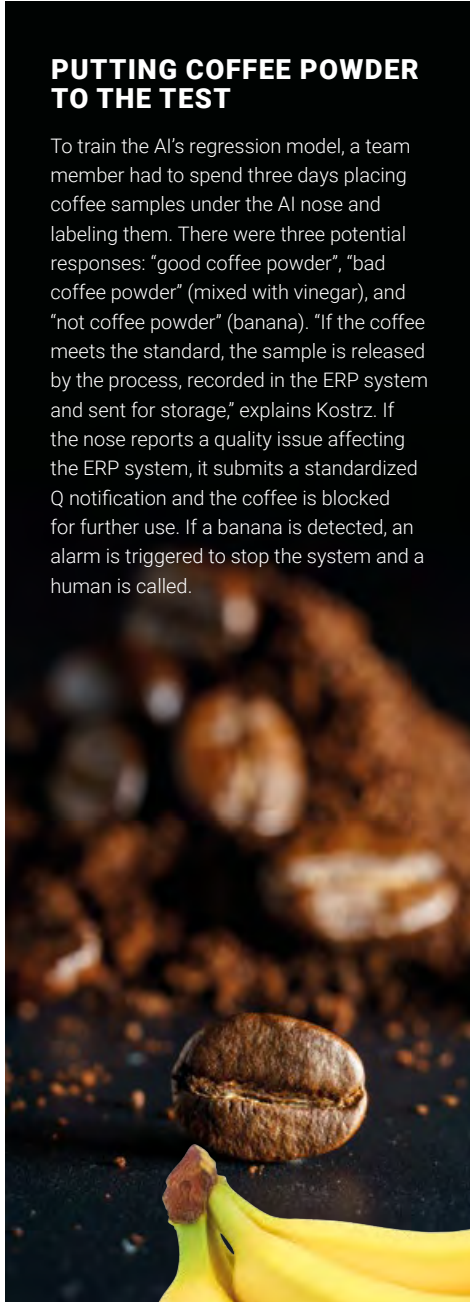
"Despite the complexity involved in the creation and detection of smells, we successfully distinguished the samples using the trained AI," summarizes Kostrz. However, there were some real challenges along the way. For example, fine tolerances were required when it came to the distance between the sensor and the object being measured. "And when the room was ventilated, the detection rate fell." The AI also turned out to have some surprisingly human qualities: The AI nose got "tired" and had to be recalibrated every few hours. And it didn't like mornings – it typically achieved better hit rates later in the day.

NOSING AHEAD

Innovation manager Adrian Kostrz and his team not only took part in SAP's #Hack2Build competition with their "AI nose", but also won the competition. The technical basis was provided by the new SAP AI Core and SAP AI Launchpad services, which are used to teach machine learning models to record and analyze data and deliver results. The hackathon involved developing a use case on the platform in the space of a week.

The model for the artificial nose is not a new invention: It was developed by Microsoft manager Benjamin Cabé and made freely available to the community. Inspired by this idea, a colleague at NTT DATA Business Solutions used a 3D printer to print the model and fit it with sensors. Kostrz: "That made us wonder whether we could combine the nose and the AI Core to create a useful application and develop a real SAP process."

The international team at NTT DATA Business Solutions consisted of two data scientists, one developer, one process expert and two innovation managers. The test process was called "incoming goods" and the nose was tasked with testing coffee samples. It used four sensors to measure different gas values. The specific combination of these four values represents the "fingerprint" of a smell.



ONE PLATFORM, NUMEROUS APPLICATIONS

In logistics, the AI system could also be used to identify products that have gone bad. Or an oven could be developed to smell when a pizza is ready. "This involves smaller AI components, not large neural networks that need a month of learning," says Kostrz. An AI nose could also be trained to discover the leaks that can bring a plant to a standstill. "Or a potential customer might want to know when the plants in their greenhouses are suffering from pests, fungi or bacteria and when they are struggling." After all, some plants emit a scent as a "cry for help" to warn other plants or call for support, such as attracting parasitic wasps to combat caterpillar infestations. By using an AI nose to detect this fragrance, gardeners can take targeted action before the problem spreads.

INTEGRATION INTO THE PROCESS WORLD

However, success also depends on connecting the platform to the production IT and ERP systems in order to trigger follow-up processes and ensure continuity in the process. This ensures that action is always taken when the nose sends back a notification on what it has sniffed out – whether that means adding salt to a soup, lowering the temperature or calling a human. Although "artificial noses" already exist, they are veritable specialists. Kostrz: "From talking to various sensor manufacturers and scientists, we have established that you can develop dedicated sensors if you know which molecule or aroma you are looking for." However, it is not possible to pack thousands of different sensors into an artificial nose in order to pick up a wide spectrum of olfactory impressions.



WINNER OF THE SAP HACKATHON

In any case, the hackathon competition that Kostrz and his team won with four sensors in an artificial nose (see box) was just the beginning. Now they are looking for new use cases for a scalable smell detection solution with no human interaction or bias: "In my opinion, quality assurance using sensory analysis is the most important area of application, but we might identify other possible uses for the AI." However, Kostrz draws the line at fine wine – in this case, the standard is not what matters, but the individual character. ■

**SENSIBLE
PROTECTION FOR
SAP SYSTEMS**

INFORMATION SECURITY IS A MANAGEMENT RESPONSIBILITY

Nowadays, information security enjoys top priority on the IT agenda. This is hardly surprising, since attacks can have serious consequences for a company's business – and its economic survival. In this interview, security experts **HOLGER BUCZIOR** and **PETER JAEGER** from NTT DATA Business Solutions discuss the most important aspects when it comes to protecting SAP systems and value chains.



Mr. Buczior, SAP security is a hot potato. Why are people only gradually becoming aware of this challenge?

HOLGER BUCZIOR: Security was treated quite shabbily in the SAP environment for many years, but times are changing. Think about manufacturers of cameras or mobile phones with keyboards – the iPhone destroyed these markets like a tidal wave. A similar development is currently taking place in SAP security: The threats are piling up, the attacks are becoming increasingly complex and they are being carried out by people with detailed technical knowledge of SAP. Many organizations are almost entirely unprepared.

Why?

BUCZIOR: There are several reasons. Firstly, companies find themselves caught between the conflicting priorities of security specialists and the people tasked with running SAP on a day-to-day basis, who already have a very high workload. Secondly, the potential points of attack in the SAP environment are increasing: web interfaces, IoT connectivity and the public cloud are just a few examples. And finally, there is a shortage of resources and security expertise. This makes it difficult to adequately implement security.

Mr. Jaeger, why is it so complicated to protect an SAP environment?

JAEGER: In years gone by, SAP security primarily focused on user authorization: Who has access to which areas of the system? Today, it is clear that there are many more areas that need to be addressed. The SAP Secure Operations Map provides a good overview of how complex the situation is. Users and their authorization are just a small facet of a significantly larger and more complex security panorama. When we present the results of a security assessment to a customer, we often talk about the “uncomfortable truth”. While there is not much customers can do to change the threats they face, they can control their susceptibility to attacks and reduce their risk to a certain extent. However, this requires an understanding of the risks and what their vulnerabilities are.

What should companies be doing? What aspects do they need to consider?

JAEGER: SAP security is a team sport. No one can protect every area alone. Different resources need to work together strategically. As a result, security governance is an essential component of all security measures. It ensures that there is a responsible officer for all areas. For example, a high-ranking Chief Information Security Officer (CISO) may have a different perspective on the subject than an IT Operations Manager tasked with efficiently providing services for the organization. Although CISOs are not completely independent, they can define security requirements and monitor their implementation.

“Requirements” sounds like investment. How do companies respond to this?

BUCZIOR: Companies obviously understand the importance of IT security because we can outline the acute threat situation to them: international hacker groups like the Russia-based CONTI, paralyzed wind farms, a hospital offline here, a municipality offline there – and Costa Rica has even declared a state of emergency over ransomware attacks. As a rule of thumb, 50 percent of managing directors have internalized the issue, whereas the rest are still playing it down. The perception of relevance alone is not enough, however, and SMEs frequently tell us that security is too expensive and unprofitable. But when a company’s SAP system is encrypted, it cannot take orders, make deliveries or perform accounting. It is incapacitated.

JAEGER: An attack does not necessarily mean disappearing from the market immediately, but it typically has a serious impact on business and that is something that puts off customers and investors. It also takes a long time to return the systems to normal operation. We have seen many organizations that have been compromised with serious consequences.

BUCZIOR: One particular organizational problem is expert silos for SAP, infrastructure and security. Quite often, the different specialists fail to communicate with each other sufficiently and pull in the same direction. Companies should ideally establish virtual

centers of competence composed of members of the different groups. Instead, these groups more often resemble fiefdoms that do not recognize each other's needs – a situation that essentially invites attacks.

Which brings us back to the question of the governance role of a CISO who can coordinate a company's defense?.

JAEGER: The CISO acts as a kind of team coach. Someone needs to be in charge and ensure that the other experts work together strategically. But this also goes one level higher: At the end of the day, information security is a management responsibility, not an IT responsibility. The CEO is ultimately accountable as the person who provides and allocates the necessary resources, or he accepts the risk and decides to invest less.

How can a company know it is investing enough in security?

JAEGER: If you asked me what it would cost to completely protect an SAP system, I would say there is not enough money in the world. This is where an organization's risk appetite comes in. Some companies are highly prudent and do not accept any risk, while others are agile and less worried about stability. There is no easy answer to this question. That is why looking at the KPIs

of other organizations is pointless – after all, the fact that an organization is "best in class" means very little if the rest of the class is completely incompetent.

How can a company decide on its risk appetite?

JAEGER: When we talk about security, we always refer to "CIA" – Confidentiality, Integrity and Availability. The vital secrets of a company need to be laid down, the data in the systems needs to be reliable and the operation of the systems needs to be guaranteed. That gives me the framework to decide which risks I am prepared to accept and which risks I want to mitigate in a targeted manner.

BUCZIOR: The aim of an analysis like this is to address security in multiple phases – it doesn't have to happen all at once. Instead, companies should identify where their biggest problems are, what could happen and what their response might look like. Companies need to understand that there is no out-of-the-box solution. Every company has its pain points that it has to work out for itself. For some, this might be design drawings; for others, recipes or production data that needs to be kept out of competitors' hands.



HOLGER BUCZIOR is Manager Business & Cybersecurity at NTT DATA Business Solutions in Germany. He works as a solution architect for SAP security and is head of the Center of Excellence for Data and Cybersecurity.

THE THREE KEYS TO SAP SECURITY

SAP systems are becoming increasingly open to interfaces in all kinds of areas, from IoT through to smart lamps and coffee machines. But the more open a system is, the more susceptible it is to attack. Security experts Holger Buczior and Peter Jaeger recommend a three-pronged approach to identifying and resolving weaknesses.

KEY PEN TESTING: In a penetration test, specialist service providers simulate an attack on the customer's systems – with or without advance warning – in order to examine how secure the Windows systems are, for example. However, SAP pen tests require specialists who also know the vulnerabilities in the SAP environment.

KEY MONITORING/TOOLS: Organizations should also use software to monitor whether attacks are taking place within their systems, as otherwise there is no way of knowing whether they have fallen victim to an attack. SAP security itself is impossible without tools for tasks such as patch management, Segregation of Duties, hardening system configuration and assessing custom code for vulnerabilities.

KEY CLOUD/SAAS: Many companies see the cloud as a comprehensive package that takes care of everything, but "security by default" is a common misconception. Every company needs to establish the conditions for the security of their cloud system, as otherwise their ecosystem will be vulnerable and insecure. One example is passwords and authentication.

What would you recommend?

BU CZIOR: Again, there is no one single answer. Should we coach the customer, should we solve their problem through consulting, or is application management required? It all depends on the analysis. However, it is important for companies to adopt a serious focus on security and monitor the development of threat situations. If they are not attentive, this makes them more likely to lose their bearings and be swallowed up by the wave. Security awareness means more than just stopping employees from carelessly clicking on links. It is especially important at senior management level, because that is where overall responsibility lies. ■

PETER JAEGER is Principal Expert for SAP Security at NTT DATA Business Solutions Nordics in Denmark. Prior to this role, he worked for 15 years as a security specialist for international companies.



DIALOG WITH
A DEEPPFAKE

HOW TO CREATE DIGITAL AVATARS OF REAL PEOPLE

The AI innovation team headed by **THOMAS NØRMARK** has made an important technical breakthrough: real-time conversation with a virtual avatar whose face and facial expressions resemble that of a real person. Tests are currently taking place to see whether this technology can be used to stimulate dementia patients.

According to the Organisation for Economic Co-operation and Development (OECD), dementia is on the rise around the world. In the 38 OECD member states, there were 15.7 cases of dementia per 1,000 inhabitants in 2021 – but by 2050, almost 30 in every 1,000 people is expected to be living with dementia. Industrialized nations like Japan and the countries of Western Europe are affected to an above-average extent. There are 1.5 million dementia sufferers in Germany alone – as well as their family members who are also affected by the situation.

The need to address this issue is becoming ever more pronounced. “And it is increasingly being discussed by the tech community across various formats,” reports Thomas Nørmark, Global Head of Innovation at NTT DATA Business Solutions. This is also because the underlying technology is becoming increasingly capable of facilitating innovative approaches to alleviating the condition. For the Danish AI expert, the key question is: “How can we replicate a person virtually and ensure that they exist permanently?”

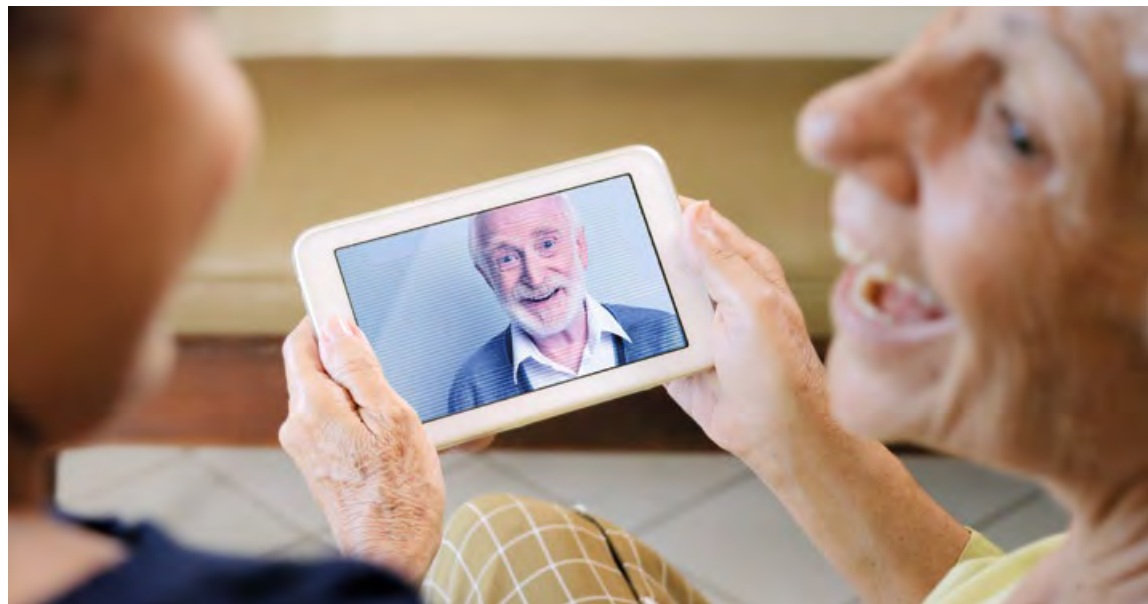
KEEPING A PERSON'S MEMORY ALIVE

Nørmark asked himself this question after a family member was affected by dementia. In her later years, the only person his

grandmother still remembered was her husband – but he had passed away several years earlier. “She asked about him every morning and finding out that he had died always upset her greatly.” In the end, the family resorted to little white lies. “These experiences led us to think about how the memory of a dead person could be brought back.” The aim of the “Living Memory” research project was to improve the quality of life of a dementia patient in their final years and stimulate their memory in order to slow the progress of their symptoms.

AI AVATARS IN ACTION

For the AI team headed by Thomas Nørmark, it was evident that AI is one of the answers to this question. For more than three years, the experts have been working on a platform for “digital humans” – using artificial intelligence to create human-like avatars for real-time interaction. The technology has already proven its worth in various use cases, including as a sports promoter at the Tour de France person for a children's helpline, a customer greeter at a car showroom and a tutor for young children learning to read English. This year, an avatar named Victoria is working in tourist information in the Danish city of Vejle, which is hosting a stage of the Tour de France. She provides visitors with information on destinations in the region and sightseeing tours.



DEEFAKE AVATARS – THE NEXT LEVEL

In the meantime, the door to a new technological dimension has opened. “Thanks to deepfake technology, we can now combine any face with a digital avatar to give people the impression that they are communicating with another human being,” explains Nørmark. A kind of interactive deepfake in real time, in other words. Previously, it was only possible to add a different face to a video of a person. The user heard and saw a human but was unable to interact with them, because everything had to be produced and recorded in advance. “Our platform and the deepfake technology mean that users can now enter into a dialog with a digital human.” The AI team researched the real-time deepfake avatars in cooperation with the renowned Massachusetts Institute of Technology (MIT) in Cambridge.

STIMULATING DEMENTIA PATIENTS THROUGH DIALOG

This technical breakthrough means that dementia patients can communicate with loved ones using a tablet or computer. For example, the avatar of their deceased husband knows birthdays, anniversaries, shared vacations, pets and other family members. Nørmark says that these facts are implemented in the knowledge base along with common interests like gardening, hiking and cycling. This information allows the AI to initiate and hold a conversation. “A lot of questions need to be answered in order to train a personality and create an entire virtual character.”

USE CASES FOR VIRTUAL HUMANS

While the first phase of the “Living Memory” project was about the technical design, the second phase focuses on potential use cases. After all, in addition to filling an avatar with information after a person dies, this can be done proactively while they are still alive. For example, users can choose to leave behind memories for their families – or take memories of their families with them on a flight to Mars. Could the technology even help people to cope with bereavement? The team is also developing use cases together with MIT and a focus group of older people who are

being asked about their needs. Nørmark: “Before the technology can be used in the real world, our research needs to establish what is the right approach in the first place.”

DIGITAL IMMORTALITY?

At the end of the day, it is worth remembering that talking about digital immortality and bringing dead people “back to life” – even virtually – is a highly sensitive matter. “Are we still on the right side of the ethical debate or have we crossed a line?” Nørmark is not the only one asking himself this question. After all, the technology is far more than just an interactive photo album. Senior citizens were asked for their thoughts at a conference. Around half were in favor, whereas almost one in five of them categorically rejected the idea.

EVEN VIRTUAL HUMANS HAVE A LAST DAY

Another interesting question concerns the deletion of the virtual avatar. Who should be allowed to determine when this happens or should avatars live forever? NFTs – non-fungible tokens – are one potential solution. Who owns an avatar, when is it born and when exactly should it go offline? “All of that can be documented in a blockchain and regulated in a smart contract,” says Nørmark. In other words, the moral framework needs to be accompanied by a legal framework that supports the technical development of a digital life.

According to Nørmark, the technical side of things is the least complex of the problems: “It is all made possible by our Digital Human Platform, which we have been working on for three years. In theory, we could start building an avatar tomorrow.” However, the more urgent question is whether we are ready to see the technology in action. Nørmark is confident that the first pilot projects will begin next year. After all, time keeps moving on. “The problem is that the technology can no longer be stopped. It will soon be available to everyone. That is why it is so important for us to establish how best to deal with virtual humans.” ■

DEEPPAKES

Deepfake is a portmanteau of "deep learning" (based on deep neural networks) and "fake". Deepfakes are fake images, audio files, texts or videos. The latter is the most famous use of deepfake technology, with celebrities frequently being portrayed in compromising situations and saying things they did not say.

Face swapping involves substituting a person's face with another face with the same expressions, lighting and line of sight. State-of-the-art AI technology needs just a few minutes of video material to adapt the new face to all of the situations in the original video. And face reenactment allows a person's head movements, facial expressions and lip movements to be reproduced to create deceptively realistic videos.

The team headed by Thomas Nørmark has succeeded in creating deepfakes in real time using a virtual avatar. The technology generates a virtual human who can access an information store for real-time conversation and use AI to speak the relevant sentences as part of a dialog.



“ Thanks to deepfake technology, we can now combine any face with a digital avatar to give people the impression that they are communicating with another human being. It is all made possible by our Digital Human Platform – in theory, we could start building an avatar tomorrow.



Thomas Nørmark

Director Global Head of AI & Robotics
Innovation Technologies
NTT DATA Business Solutions
Nordics



#TRANSFORMATION2021

As the people in the project responsible for implementing the global change of brand, we on the global Marketing team are extremely proud to have accomplished this transformation in such a short time. But this was possible only thanks to great teamwork and interdisciplinary collaboration by all colleagues, divisions and countries! A strong brand is always created from the inside out. So it is now up to us to give this brand a meaning, character and identity and to convey our unique spirit and culture to the NTT DATA Business Solutions brand!

Torsten Scholz

Vice President Marketing
Germany

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REPORT OF THE SUPERVISORY BOARD

**Ladies and gentlemen,
dear friends of the Company,**

Renewal was the dominant theme in 2021. itelligence AG became NTT DATA Business Solutions AG. Our new name serves as an expression of the large-scale global growth and branding initiative pursued by our parent group NTT DATA and a reflection of our Company's steadily growing international importance. Even as NTT DATA Business Solutions AG, we remain an independent company based in Bielefeld. In the past year, we also changed the Company's fiscal year so that it now runs from April 1 until March 31 of the next calendar year. Appropriately enough, this fiscal year was the best in the Company's history in terms of revenues, income and orders on hand. Our workforce also increased to its largest size since our formation as a Company.

Despite the sustained difficult conditions as a result of the pandemic, NTT DATA Business Solutions AG generated revenues of BEUR 1.24 in fiscal 2021/22, an increase of 15.8% on the prior-year figure of BEUR 1.072. Once again, we would like to express our particular gratitude to our 12,176 employees around the world (March 31, 2021: 10,601), who have responded to these unusual challenges outstandingly and made a significant contribution to our success. In terms of earnings, NTT DATA Business Solutions AG generated EBITA of MEUR 65.3 after MEUR 31.0 in the previous year, representing an increase of 104.8%. The EBITA margin amounted to 5.1% after 2.9% in the previous year. Overall, our Group can look with confidence to the new fiscal year. Our aim for the coming year is to further expand our excellent market position, which is reflected in these figures.

The Supervisory Board performed the tasks assigned to it by law, the Articles of Association and its Rules of Procedure with great diligence in the 2021/22 reporting period. It regularly advised and monitored the Management Board in its management activities and was involved in all decisions of material importance to the Company immediately and at an early stage. The Supervisory Board also thoroughly examined, extensively discussed and ultimately voted on the reports and proposed resolutions of the Management Board.

In all cases, the reporting by the Management Board met the requirements of the Supervisory Board in full. The Supervisory Board

received detailed, timely information from the Management Board in both written and verbal form on the Group's position. There was a particular focus on presenting the development of the net assets, financial position, results of operations, fundamental issues of corporate planning and strategy, the financing and liquidity situation, the risk situation, risk management, compliance requirements and significant transactions. Above and beyond this, the Chairman of the Supervisory Board was regularly informed about current business developments, the outlook and other key issues. Potential future scenarios and the future focus of the divisions were also discussed with the Management Board. No conflicts of interest arose within the Management Board or the Supervisory Board in the year under review.

The Supervisory Board held five meetings in fiscal 2021/22. All the members of the Supervisory Board attended more than half of the meetings of the Supervisory Board. In some cases, Supervisory Board members were connected by video or telephone. Members unable to attend submitted their votes on resolutions in writing.

The Supervisory Board meetings regularly discussed the Company's economic position and development, the financial and liquidity situation, planned investments, the risk situation and risk management and corporate planning and strategy.

In addition, the meetings in the past fiscal year focused on the following topics and resolutions in particular:

- Examination, approval and adoption of the single-entity and consolidated financial statements for 2020
- Examination and adoption of the single-entity financial statements for the short fiscal year 2021
- Commissioning of KPMG AG Wirtschaftsprüfungsgesellschaft, Berlin, as the auditor for fiscal 2021/22
- Budget definition and budget review for 2021/22
- Annual planning for 2022/23
- Investments and planned acquisitions

- Proposals for the election of new Supervisory Board members and composition of committees
- Monitoring of the early risk detection system established by the Management Board
- Management Board matters
- Oversight of projects in the Finance department and of escalation projects
- Oversight of the rebranding and renaming of the Company as NTT DATA Business Solutions AG

In fiscal 2021/22, the Audit Committee intensively discussed the audit of the single-entity and consolidated financial statements, new accounting provisions and their future inclusion in the annual and consolidated financial statements, matters relating to the planning process and risk management and compliance issues.

In particular, the Personnel Committee discussed Management Board matters, matters relating to employee development, the integration process for acquired companies, developments in the management team and the management structure, and the future objectives and programs of the people organization.

The Strategy Committee primarily discussed the Company's orientation within the NTT DATA Group, investments, acquisitions and the global cost and efficiency program initiated at the Company.

The Annual General Meeting on July 14, 2021 adopted resolutions on the appropriation of the unappropriated surplus from the short fiscal year 2021, the approval of the actions of the members of the Management Board and the Supervisory Board and the election of the auditor of the single-entity and consolidated financial statements for fiscal 2021/22. Two new Supervisory Board members were already elected in March 2021: Steven Heller, employee representative since March 26, 2021 (Senior Professional Managed Cloud Administrator), and Peter Huusom Nielsen, employee representative since March 26, 2021 (Senior Expert, SCE LoB). They replace Mersun Sezer and Jens Christian Derdau Sørensen, to whom we extend our gratitude for their work and their commitment to the Company.



Friedrich Fleischmann, Chairman of the Supervisory Board

As in the previous years, the Supervisory Board regularly addressed the adherence to and further development of corporate governance at the Company and intensively discussed the recommendations and suggestions of the German Corporate Governance Code together with the Management Board in fiscal 2021/22. The Management Board and the Supervisory Board of NTT DATA Business Solutions AG identify with the objectives of the German Corporate Governance Code, namely to promote good, trustworthy company management that is oriented towards benefiting shareholders, employees and customers. The Management Board and the Supervisory Board report on corporate governance in the corporate governance report, which is published together with this annual report.

The Annual General Meeting on July 14, 2021 elected KPMG AG Wirtschaftsprüfungsgesellschaft, Berlin, as the auditor of the single-entity and consolidated financial statements for fiscal 2021/22. KPMG had previously declared to the Chairman of the Supervisory Board that there were no circumstances that could compromise its independence as an auditor. KPMG consequently audited the single-entity financial statements of NTT DATA Business Solutions AG and the consolidated financial statements and the management reports of NTT DATA Business Solutions

AG and the NTT DATA Business Solutions Group. As stated in its unqualified audit opinions, these examinations did not give rise to any objections. The dependent company report prepared by the Management Board was also audited and issued with an unqualified audit opinion by the auditor. The audit opinion is worded as follows:

“Following the completion of our audit in accordance with professional standards, we confirm that

- a.** the factual statements made in the report are correct,
- b.** the Company’s compensation with respect to the transactions listed in the report was not inappropriately high and
- c.** there are no circumstances that would justify a materially different opinion of the measures listed in the report than that held by the Management Board.”

At its meeting on July 14, 2022, the Audit Committee discussed the single-entity and consolidated financial statements for 2021/22 and the management reports with the Management Board and the auditors. The relevant documents, including the audit reports, were provided to all of the members of the Audit Committee and the Supervisory Board in good time prior to the meeting. The responsible auditors informed the members of the Audit Committee of the key findings of their audit and answered additional questions. The Committee concluded by recommending that the Supervisory Board approved the financial statements.

At the meeting of the Supervisory Board to adopt the financial statements on July 15, 2022, the consolidated financial statements and Group management report prepared in accordance with the International Financial Reporting Standards (IFRS), the single-entity financial statements and management report prepared in accordance with the German Commercial Code (HGB), the audit reports and the dependent company report were discussed in detail by the Supervisory Board in the presence of the Management Board and the auditor. The auditor reported on the key findings of its audit and was available to the Supervisory Board to provide additional information and answer questions as necessary.

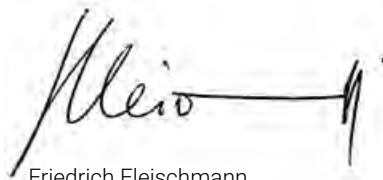
Based on its own careful examination of the documents relating to the financial statements and the audit reports, the Supervisory

Board did not raise any objections and consequently approved the findings of the audit by KPMG. The Supervisory Board thus adopted the annual financial statements of NTT DATA Business Solutions AG prepared by the Management Board and approved the consolidated financial statements for the year ended March 31, 2022. Following its own examination, the Supervisory Board also approved the Management Board’s proposal for the appropriation of net profit. Based on its own careful examination of the dependent company report and the audit report, the Supervisory Board did not raise any objections to the declaration by the Management Board at the end of the dependent company report and approved the findings of the audit by KPMG.

As the Supervisory Board, we will continue to actively support NTT DATA Business Solutions AG’s strategic focus and course of business in the future. Together with the Management Board, we will therefore make our contribution towards the further positive development of the Company, which has now been in existence for more than 30 years. In particular, the Supervisory Board would like to thank all of the employees around the world and the members of the Management Board for their high level of personal commitment and performance in a dynamic and challenging market environment.

Bielefeld, July 15, 2022

On behalf of the Supervisory Board



Friedrich Fleischmann
Chairman

CORPORATE GOVERNANCE REPORT 2021/2022

The Management Board and the Supervisory Board of NTT DATA Business Solutions AG attach great importance to corporate governance. We believe that responsible corporate governance is the only way to increase enterprise value sustainably and in the long term. Accordingly, both bodies are committed to the principles of the German Corporate Governance Code (GCGC). The implementation of these principles is intended to stabilize the trust of customers, employees and the public in the company at a high level.

The Management Board and the Supervisory Board addressed corporate governance topics on several occasions in the past fiscal year. NTT DATA Business Solutions AG's Management Board and Supervisory Board are guided by the recommendations and suggestions of the current version of the GCGC, dated December 16, 2019. While the GCGC is intended for listed companies and companies with access to the capital market, the Management Board and the Supervisory Board of NTT DATA Business Solutions AG believe that the nationally and internationally recognized standards of good, responsible corporate governance set out in the GCGC also provide a suitable framework for ensuring the quality of corporate governance at NTT DATA Business Solutions AG. As a wholly owned subsidiary of NTT DATA, NTT DATA Business Solutions AG's structure differs from that of a listed company, the intended subject of the GCGC, including in terms of its shareholder structure and capital market access. Nonetheless, the Management Board and the Supervisory Board of NTT DATA Business Solutions AG believe that the GCGC is a reasonable guideline for ensuring the quality of corporate governance at NTT DATA Business Solutions AG. Material deviations from the principles of the German Corporate Governance Code arise in legitimate instances only due to NTT DATA Business Solutions AG's size, structure, the fact that it is not a listed company or special considerations specific to the company.

As a Group company of NTT DATA, NTT DATA Business Solutions AG also complies with the corporate governance principles of the NTT DATA Group and the NTT Group.

MANAGEMENT BOARD AND SUPERVISORY BOARD

As a German stock corporation, NTT DATA Business Solutions AG has a two-tier management and supervisory structure in the form of

its Management Board and Supervisory Board. The Management Board is responsible for managing the company. The Supervisory Board monitors and advises the Management Board and is responsible for appointing and dismissing Management Board members. These two bodies of NTT DATA Business Solutions AG have always worked together in a trusting and efficient manner.

In fiscal 2021/2022, the Management Board reported to the Supervisory Board regularly, promptly and comprehensively on all material aspects of planning, business development and the position of the Group by way of written and verbal reports. These reports focused in particular on the risk situation, risk management and compliance. Transactions of material importance require the approval of the Supervisory Board.

Under certain circumstances, the Supervisory Board also meets regularly without the Management Board.

The Management Board of NTT DATA Business Solutions AG had two members in the 2021/2022 fiscal year: Norbert Rotter (CEO) and Jürgen Pürzer (CFO). There were no conflicts of interest within the Management Board in the 2021/2022 fiscal year.

Together with the Management Board, the Supervisory Board ensures long-term succession planning. Typically, members of the Management Board are initially appointed for not more than three years. As a general rule, members are then subsequently appointed for not more than five years.

The Supervisory Board of NTT DATA Business Solutions AG advises and monitors the Management Board in its management of the company and is of the opinion that it has a sufficient number of independent members. The Supervisory Board ensures that its composition takes into account the principles expressed in the Code concerning diversity and appropriateness with regard to the geographical, industry-specific and other material requirements of the company. The six-person Supervisory Board of NTT DATA Business Solutions AG has two members – Mr. Friedrich Fleischmann and Prof. Heiner Schumacher – who are independent of the company, its Management Board and NTT DATA as the controlling shareholder. The Supervisory Board of NTT DATA Business Solutions AG also has two shareholder representatives from NTT DATA and two employee representatives. The Supervisory

Board of NTT DATA Business Solutions AG therefore has two independent shareholder representatives in accordance with the recommendations of the GCGC, even though NTT DATA Business Solutions AG has no minority shareholders in addition to NTT DATA.

The members of the Management Board and the Supervisory Board do not perform any material functions outside the Group or hold material supervisory board mandates at other external companies.

As in previous years, the Supervisory Board formed an Audit Committee, a Personnel Committee and a Strategy Committee from among its members in the 2021/2022 fiscal year. There were no conflicts of interest within the Supervisory Board in the 2021/2022 fiscal year.

In accordance with the recommendations of the GCGC, the Chairman of the Supervisory Board, the Chairman of the Audit Committee and the Chairman of the Personnel Committee that handles Management Board remuneration are independent of the company and its Management Board. The Chairman of the Audit Committee is independent of the controlling shareholder.

Details of the remuneration paid to the members of the Management Board and Supervisory Board can be found in the notes to the annual financial statements and in the management report. The remuneration of the members of the Management Board is disclosed individually.

Further information on the cooperation between the Management Board and the Supervisory Board and the work of the Supervisory Board and its committees can be found in the report of the Supervisory Board.

SHAREHOLDER STRUCTURE AND ANNUAL GENERAL MEETING

NTT DATA EUROPE GmbH & Co. KG is the sole shareholder of NTT DATA Business Solutions AG.

NTT DATA Business Solutions AG is incorporated into NTT DATA's corporate strategy. Given this, the Management Board and the

Supervisory Board also supported the renaming of itelligence AG to NTT DATA Business Solutions AG at the start of 2021. As previously, NTT DATA Business Solutions AG operates on the market autonomously and reports on its performance autonomously and transparently. NTT DATA Business Solutions AG is managed by the Management Board and Supervisory Board of NTT DATA Business Solutions AG on their own responsibility.

ACCOUNTING AND AUDITING

The Management Board prepares consolidated financial statements as at the end of a fiscal year. NTT DATA Business Solutions AG adapted its fiscal year to that of NTT DATA in 2021. Since 2021, the fiscal year began on April 1 and ended on March 31 of the following year. Group financial reporting is consistent with the International Financial Reporting Standards (IFRS), thereby ensuring a high degree of transparency and international comparability.

The audit for fiscal 2021/2022 was performed by the auditor elected by the Annual General Meeting at the proposal of the Supervisory Board and the recommendation of the Audit Committee, KPMG AG Wirtschaftsprüfungsgesellschaft, Berlin. The Audit Committee has agreed with the auditor that the auditor must inform the Audit Committee without delay of any findings or incidents material to its activities of which it becomes aware in the performance of its audit of financial statements. The Audit Committee regularly assesses the quality of the audit of financial statements.

TRANSPARENCY

NTT DATA Business Solutions AG has been providing timely, comprehensive and detailed information for many years. The company's website – <https://nttdata-solutions.com> – is the central communication instrument and is available in various languages, reflecting the company's international activities. NTT DATA Business Solutions AG uses press releases to provide information on current events. The annual report, together with key content from the consolidated financial statements, is published on the company's website. The consolidated financial statements are also published in the Federal Gazette.

CORPORATE GOVERNANCE REPORTING

The Management Board and the Supervisory Board report annually on corporate governance at the company. This corporate governance report is included in the annual report.

Since fiscal 2020, the Management Board and the Supervisory Board of NTT DATA Business Solutions AG have dispensed with a separate corporate governance statement in accordance with section 161 AktG, which is only a legal requirement for listed stock corporations. This does not change the fact that NTT DATA Business Solutions AG is largely guided by the recommendations and suggestions of the GCGC. The new version of the GCGC of December 16, 2019 is also taken into account extensively in ensuring the quality of corporate governance at NTT DATA Business Solutions AG. However, the Management Board and the Supervisory Board of NTT DATA Business Solutions AG now believe that comprehensive reporting in the corporate governance report is preferable to a formal corporate governance statement, as the form and content of corporate governance statements are geared to listed companies.

GROUP MANAGEMENT REPORT OF NTT DATA BUSINESS SOLUTIONS FOR THE FISCAL YEAR FROM APRIL 1, 2021 TO MARCH 31, 2022

KEY FIGURES FOR FISCAL 2021/2022

Record year for NTT DATA Business Solutions AG: consolidated revenue rises by 15.8% to BEUR 1.24, EBITA more than doubles to MEUR 63.5

- Organic growth of 14.6%
- Revenue up by +1.2% as a result of acquisitions
- Revenue distribution: 59.5% outside Germany, 40.5% within Germany

NTT DATA Business Solutions AG generated EBITA of MEUR 63.5 for 2021/2022 year as a whole after MEUR 31.0 in the previous year, an increase of 104.8%. EBIT climbed by 182.5% to MEUR 48.3 after MEUR 17.1 in the previous year

- The EBITA margin thus improved to 5.1% in fiscal 2021/2022 (previous year: 2.9%).
- The EBIT margin climbed to 3.9% in the past fiscal year after 1.6% in the previous year.

In the past fiscal year, cashflow from operating activities increased by MEUR 34.8 to MEUR 136.9

- This development is thanks to continuing systematic working capital management.
- Another key driver is the sharp rise in EBITDA.

Orders on hand improved as well

- NTT DATA Business Solutions AG's orders on hand amounted to BEUR 1.405 as of March 31, 2022, up by 11.3% on the previous year's level of BEUR 1.262 as of March 31, 2021.
- Non-current orders on hand amount to MEUR 665.7, a significant increase on the previous year (previous year: MEUR 622.3).

Headcount has risen by 14.9% to 12,176 as of the end of the reporting period (previous year: 10,601)

- 1,575 new employees in total, 126 of whom through acquisitions.
- The share of women within the Group has risen to 29.0% as against 27.4% in the previous year.

Forecast for 2022/2023 as a whole

- Further growth in revenue to between BEUR 1.24 and BEUR 1.30 is anticipated.
- NTT DATA Business Solutions is still aiming for organic growth and growth through acquisitions.
- The EBITA margin is to improve further to around 6%.

PROFILE OF THE NTT DATA BUSINESS SOLUTIONS GROUP

BUSINESS ACTIVITIES

NTT DATA Business Solutions AG (until 2021: itelligence AG) was formed in 1989 as an SAP consulting company and is today a leading international full-service IT provider and partner of SAP SE. As an expression of the large-scale global growth and branding initiative pursued by our parent group NTT DATA, itelligence was renamed NTT DATA Business Solutions AG in 2021. The new name is also proof of the company's growing international significance as an SAP consulting firm. Customers in the traditional and upper mid-market with a strong international presence are the main target group. Today, NTT DATA Business Solutions operates at 90 locations in 30 countries, working on behalf of more than 8,000 customers.

The company is focused on the sale of rights of use to SAP software solutions for the mid-market, SAP Managed Services consulting business, solution and product business.

Extensive industry and IT expertise are used to develop and preconfigure various industry solutions for the more efficient implementation of SAP in Germany and abroad. Key sectors addressed by the Group include manufacturing and the automotive supply industry, mechanical and plant engineering, steel and non-ferrous metal companies, the wood and furniture industry, food processing, the process and pharmaceutical sector, the life science sector, the service industry, retail and expertise in the area of educational institutions. NTT DATA Business Solutions is also driving ahead digitization and the industry-specific integration of mobile and analytical solutions.

ORGANIZATION

NTT DATA Business Solutions AG is represented by subsidiaries with local sales and consulting teams in the following regions: DACH (Germany, Austria and Switzerland), Western Europe (Spain, France, Belgium, Netherlands, UK, Ireland), Northern and Eastern Europe (Denmark, Norway Sweden, Finland, Poland, Czechia, Slovakia, Hungary, Bulgaria, Turkey, UAE), the Americas (USA, Canada, Brazil), Asia (China, Malaysia, Thailand, Australia), Other APAC (India, Qatar) and Others (ITC, Recruit).

The Group comprises 56 subsidiaries worldwide. The largest subsidiaries are located in Germany, the US, India, Brazil, Switzerland, the UK, Denmark and Turkey. NTT DATA Business Solutions AG is domiciled at its head office in Bielefeld. NTT DATA Business Solutions AG is a wholly owned subsidiary of NTT DATA EUROPE GmbH & Co. KG.

The Global Managed Services business unit operates globally via a matrix organization to optimally serve the requirements of local and international customers for a scalable, cost-efficient and innovative range of services in this segment. The company provides managed cloud and application management services for more than 4,000 customers from seven global off-shore and near-shore centers with local front-ends in 30 countries. As a leading managed cloud services provider focusing

on SAP, NTT DATA Business Solutions operates state-of-the-art data centers in Germany, Poland, Malaysia, Denmark, Switzerland and the US, and works closely with the leading hyperscalers. The geographical and portfolio positioning is rounded off by intensive cooperation with affiliates within the NTT Group and operations as a global strategic supplier for SAP and its consumers.

GROWTH STRATEGIES (unaudited management report content)

The company's success is based on a clear corporate strategy and its systematic implementation and continuous further development. NTT DATA Business Solutions maintains lasting partner relations with its customers and takes responsibility for the success of the IT projects it carries out for customers.

Customers face intensive global competition and must constantly adapt to an extremely dynamic environment. Continuous improvements to internal structures and the value chain are therefore strategically important. NTT DATA Business Solutions sees itself as a strategic partner to SMEs and large corporations worldwide, and helps its customers to manage these challenges with innovative IT solutions and services. In particular, this includes actively shaping the relentlessly rapid advancement of digital technology and ensuring greater efficiency and transparency in workflows.

Growth strategies are the centerpiece of the company's long-term orientation and, working with the NTT DATA Group, are systematically augmented in four-year cycles. The current strategy cycle covers the fiscal years 2022 to 2025. Compared to the previous strategy cycle, NTT DATA Business Solutions is focused on further efficiency and margin enhancements as well as growth.

MANAGEMENT SYSTEM

To manage its operating business, the Group uses selected financial and non-financial key figures that are consolidated into central performance indicators at Group level. These are presented under II.5.

ANNUAL AND MULTI-YEAR PLANNING FOR ALL REGIONS AND DIVISIONS

All management and controlling processes at NTT DATA Business Solutions are based on an established planning process. Building on strategic multi-year planning, the Management Board manages the Group's long-term focus and derives annual operating targets applying a top-down approach. The annual plans developed at the level of the national subsidiaries are then coordinated with the overall targets. Planning data are then compared against rolling forecasts each quarter to identify deviations. In addition, target and actual figures are compared each month and reported as a management tool so that deviations from the agreed targets can be identified early on and corresponding measures for ensuring target achievement can be initiated in good time.

MARKET POSITIONING (unaudited management report content)

As one of the leading international full-service IT providers for the SAP environment, NTT DATA Business Solutions is mainly positioned in the traditional and upper mid-market segment and offers its customers a coordinated range of solutions and services over the entire lifecycle of an IT investment. The company's portfolio has been continuously enhanced over recent years and now consists of consulting, development and system integration in the SAP environment, the sale of SAP licenses, cloud subscriptions and Managed Services. NDBS offers these products and services worldwide through its long-established market presence in Germany, Western Europe, Eastern Europe, the Americas and Asia. NTT DATA Business Solutions will also continue to expand this excellent market position through both organic growth and targeted acquisitions.

ACQUISITIONS

NTT DATA Business Solutions performed further acquisitions in fiscal 2021/2022. The Management Board of NTT DATA Business Solutions also held talks with potential future acquisition candidates. Moving ahead as well, NTT DATA Business Solutions AG will continue to grow through acquisitions – the expansion strategy of recent years will be continued, thereby actively expanding the service portfolio. With its acquisitions, NTT DATA Business Solutions is pursuing the strategic objective of being one of the leading SAP partners on each of its key sales markets and further expanding this position.

NTT DATA Business Solutions acquires Business Services and Technologies in Bulgaria

As of March 31, 2022, NTT DATA Business Solutions AG acquired Business Services & Technologies OOD in Bulgaria, one of the country's leading SAP service providers, to further expand its capacity in the field of Global Managed Services. Business Services & Technologies OOD has already been providing services with a high degree of quality and flexibility for several years as an external partner to NTT DATA Business Solutions. Thanks to its new location in Bulgaria, NTT DATA Business Solutions will have six global managed services centers.

Business Services & Technologies, based in the Bulgarian capital of Sofia, was founded in 2012. The company specializes in digital transformation processes based on SAP, offering business and implementation consulting as well as managed services for SAP solutions such as Ariba, S/4HANA and SuccessFactors. Its extensive managed services portfolio includes managed cloud services, software development services and application management services for customers in various sectors such as the food and beverage industry, construction and automotive.

Acquisition of 100% interest in NTT DATA Middle East FZ-LLC Dubai

NTT DATA Business Solutions AG acquired 100% of shares in NTT DATA Middle East FZ-LLC effective April 1, 2021. The acquisition expands NTT DATA Business Solutions AG's presence in the Middle East and highlights its position as a leading SAP consulting firm.

Acquisition of 100% interest in NTT DATA Danışmanlık ve Bilişim Çözümleri Limited Şirketi

NTT DATA Danışmanlık ve Bilişim Çözümleri Limited Şirketi, Turkey, was acquired effective April 1, 2021. By way of a share purchase agreement dated March 24, 2021, itelligence Bilgi Sistemleri A.Ş. acquired all shares in NTT DATA Danışmanlık ve Bilişim Çözümleri Limited Şirketi.

PARTNERSHIPS (unaudited management report content)

Partnerships are central to NTT DATA Business Solutions AG's business model. With more than 8,000 customers around the world, NTT DATA Business Solutions seeks long-term relationships that are trust-based and profitable for both parties. Other long-standing partnerships on top of this also provide an important basis for the company's long-term success.

SAP partnership

NTT DATA Business Solutions AG is a partner of SAP, whose products form the core of its service portfolio along with the related services. NTT DATA Business Solutions' prominence within the SAP ecosystem is regularly demonstrated by various awards and the most important partner status titles that SAP currently confers on its strategic partners. The most important awards include SAP Global Platinum Reseller, SAP Global Strategic Services Partner and Global SAP-Certified Provider of Hosting Operations. NTT DATA Business Solutions is also a global SAP-certified provider of: SAP Business Suite Solutions Operations, S/4HANA Solutions Operations, Cloud and Infrastructure Operations and SAP HANA Operations.

NTT DATA Business Solutions won 31 SAP awards in total in 2021/2022. Highlights include the SAP Pinnacle Awards, of which NTT DATA Business Solutions won two in May 2022. NTT DATA Business Solutions AG received the SAP Pinnacle Award 2022 in the categories "Sales Excellence – Cross Segment" and "Sales Excellence – Midmarket" for its outstanding achievements as an SAP partner. NTT DATA Business Solutions was also nominated as a finalist for the SAP Pinnacle Award 2022 in the categories "Demand Generation" and "Delivery Excellence". The winners and finalists of the SAP Pinnacle Awards 2022 were selected in 22 categories on the basis of recommendations by SAP, customer feedback and performance indicators.

The SAP Pinnacle Awards are SAP SE's opportunity to honor top-performing partners who have helped customers to achieve more with outstanding success. The winners were chosen because they made a special effort towards achieving value added for customers, exponential growth and simplification. Together with SE, NTT DATA Business Solutions is helping customers on their journey to becoming smart and sustainable businesses.

With these prestigious awards, SAP has been recognizing partners that have rendered outstanding service to the development and expansion of their collaboration with SAP and help customers realize their full potential for 20 years now.

Marking the 20th anniversary of the SAP Pinnacle Awards, the criteria for recognition were revisited. In 2022, the SAP Pinnacle Awards focused even more on honoring achievements through partnership. As a result of the changes, partners are no longer recognized based on the type of their relationship, their solution or their industry focus, the prize categories instead now apply to the SAP partner ecosystem as a whole, which increases participation entitlement and makes the awards SAP's most comprehensive.

In 2022 as well, NTT DATA Business Solutions was a prize-winner at the SAP Innovation Awards. In May 2022, NTT DATA Business Solutions announced that it had been honored at the SAP Innovation Awards 2022 in the category "Partner Paragon – Professional Services" for its "AI Learning Helper". The AI-based learning application uses a digital avatar that helps children learn to read in a play format. The learning application is based on a proprietary AI technology – the "it.human platform" – from NTT DATA Business Solutions. The AI Learning Helper automates and humanizes the learning experience using advanced AI and robotics technology in the form of a digital avatar that personally and interactively helps children learn to read. The avatar helps children with vocabulary, pronunciation and comprehension. The digital avatar can even ask questions and recognize emotions.

The AI Learning Helper is the result of an international cooperation between NTT Business Solutions Denmark, NTT DATA in the UK and NTT DATA in Romania. The proof of concept study that emerged from the multi-site cooperation was submitted for this year's SAP Innovation Awards. Under the leadership of NTT DATA Business Solutions Denmark, NTT DATA specialists from the UK contributed their knowledge in designing and optimizing a digital user experience. In turn, the experts from NTT DATA in Romania contributed their expertise in IoT and voice recognition. Using this unique and innovative learning application, NTT DATA Business Solutions successfully beat other impressive nominees.

The AI Learning Helper is helpful for parents and teachers as well. This is because the AI software solution tracks the learning progress. In a clear display on a tablet, for example, parents and teachers can view progress in learning to read and see the areas where a child has improved. This allows transparent tracking and active support of the learning process.

The it.human platform is already in use in various other applications today. Digital avatars assist companies in day-to-day operations, for instance in the hospitality industry (digital receptionist), in the sports and entertainment industry (digital promoter) or in retail (digital sales staff).

In March 2022, NTT DATA Business Solutions AG received four SAP MEE Partner Excellence Awards 2022 for the Middle and Eastern Europe (MEE) region. NTT DATA Business Solutions was honored by SAP in the categories "Top Midmarket Cloud Performer", "Net-New Names – Cloud Business", "RISE with SAP" and "Cloud Delivery", achieving victory over other competitors in the region.

SAP presented the awards to leading SAP partners in the Middle and Eastern Europe (MEE) region that implement and manage SAP solutions for customers. The prize-winners help customers to apply and effectively use SAP solutions to promote innovation, fast results and sustainable growth.

Also, in March 2022, NTT DATA Business Solutions AG again received the acclaimed certification as a Partner Center of Expertise (Partner COE) from SAP SE. This certificate shows companies that work with SAP technologies that NTT DATA Business Solutions offers a consistently high level of service and support worldwide in software maintenance. To receive this award, partners submit to a new certification process and the associated review every two years.

NTT DATA

The long-standing partnership with the Japanese NTT DATA Group is the strategic basis for NTT DATA Business Solutions to keep on significantly expanding its own international market position. NTT DATA Business Solutions AG is a wholly owned subsidiary of NTT DATA EUROPE GmbH & Co. KG. This relationship under company law forms the basis for a tightly-knit partnership within the framework of a cooperation agreement.

With NTT DATA as a strong partner, NTT DATA Business Solutions intends to press ahead with its development as an international provider of IT systems and services for SAP. As a company that operates independently within the growth-oriented NTT DATA Group, NTT DATA Business Solutions can steadily increase its growth potential on the international stage, particularly in Asia, through its close relationship with NTT DATA. NTT DATA is also a very strong partner for NTT DATA Business Solutions in terms of its financial and capital resources. A number of joint international customer projects serve to underline the successful partnership between NTT DATA and NTT DATA Business Solutions.

Within the NTT DATA Group, NTT DATA Business Solutions won two major awards in 2022: the NTT DATA Award and the NTT DATA Business Award. NTT DATA Business Solutions won the NTT DATA Award for the “Melitta IoT Hub” project. The outstanding co-innovation project was chosen as the sole winner of the NTT DATA Awards among all affiliates. The NTT DATA Business Award, which honors outstanding success in the areas of sales and business, this year went to staff in the US for their project with the customer Stone Canyon Industries.

Other partnerships and awards

In April 2022, NTT DATA Business Solutions AG and SecurityBridge announced the intensification of their strategic partnership. In conjunction with the collaboration, NTT DATA Business Solutions is integrating SecurityBridge’s security platform, specially developed for SAP systems, into its software range for SAP solutions. The customers of the world’s most successful SAP consultant for the mid-market thus benefit from increased cybersecurity and failure protection for their systems. The two IT service providers have been working together successfully on the North European market since 2019. Now this cooperation is going global.

With the SecurityBridge platform, NTT DATA Business Solutions offers extended functions and applications for the continuous review, improvement and maintenance of the security situation of the user’s SAP landscape. Security warnings are sent in real time, enabling an immediate response. The platform’s automation functions reduce manual work for customers’ SAP department and ensure a more reliable and precise output.

The partnership between the two companies makes the added value of the integrated and holistic SAP security solution and the SecurityBridge platform available to many SAP customers to create a resilience to cyberattacks on critical SAP applications.

In May 2022, NTT DATA Business Solutions entered into a partnership with Soley GmbH in Munich. The SAP partner Soley provides a software solution that offers portfolio optimization for industry companies with a complex product portfolio and allows straightforward integration into SAP S/4HANA. Founded in 2015 as a spin-off company of the Laboratory for Product Development at the Technical University of Munich (TUM), Soley GmbH already counts renowned German industrial corporations among its customers.

Soley developed a cloud-based software-as-a-service solution for product mining. This enables industrial companies to systematically examine their product portfolio with the help of pattern recognition – an aspect of predictive analytics – and to derive measures from it. This way, they can sustainably reduce the complexity of their product portfolio and their value stream.

Many companies are facing the challenge of having to flexibly adapt their product range in line with market changes. The complex dependencies between products and value stream demand deep expert knowledge to inform decision-making. Soley digitalizes this process. The solution guides users through a digitalized decision-making process and makes prioritized suggestions not just in terms of economic viability, but also resilience, sustainability and flexibility.

A network analysis uncovers critical dependencies between components, products, suppliers, production, warehousing and customers. Thanks to automated analysis, updating the product portfolio becomes a cyclical process with Soley. Companies maintain their product portfolio using continually refined criteria, dispose of unnecessary ballast and focus on their core business. This allows them to reduce their component variety by up to 50 percent. Reference customer Viessmann, a manufacturer of heating systems as well as climate control and cooling systems, is unlocking savings potential worth millions through this type of portfolio management.

NTT DATA Business Solutions also maintains a number of other technology partnerships with the aim of expanding its own expertise and solutions portfolio. The objective of these partnerships is to meet the needs of existing NTT DATA Business Solutions customers even more effectively by offering additional services and complementary solutions. NTT DATA Business Solutions also seeks to acquire new customers through technology issues, SAP industry solutions and partner recommendations.

EMPLOYEES

NTT DATA Business Solutions' headcount surpassed 12,100 in fiscal 2021/2022. Of our 12,176 (previous year: 10,601) employees as of March 31, 2022, 3,570 (previous year: 3,423) worked in Germany and 8,606 (previous year: 7,178) outside Germany. Headcount was therefore up by 14.9% year-on-year. 126 of the 1,575 additional employees in total come from acquisitions.





The share of women at NTT DATA Business Solutions AG rose to 29.0% in 2021/2022 (previous year: 27.4%). The global average age was reduced from 37.6 to 36.7 years.

KEY AREAS FOR PEOPLE FUNCTION

(unaudited management report content)

As in the previous year, 2021/2022 was also dominated by the challenges of the COVID pandemic. Naturally, our attention was again focused on the well-being and safety of our NTT DATA Business Solutions personnel. We ensured this as far as possible with regular COVID calls between global People Functions and the measures developed as a result, such as providing free FFP2 masks and COVID tests. One highlight was our vaccination campaign in Germany: 420 employees in total received coronavirus vaccinations at eight different locations between July and August 2021. Furthermore, we facilitated a booster vaccination for our employees in Germany between December 2021 and February 2022.

The number of contracts signed in recruitment more than doubled as against 2019 (pre-COVID), though the number of applications has declined by 12%. Using a deliberately chosen combination of activities in conjunction with our global employer branding campaign, "Empowering You", we have created a uniform, appealing image to attract and retain talented employees. The transformation into NTT DATA Business Solutions AG, combined with the uniform international brand presence, has bolstered our position as the leading SAP company within the NTT DATA Group. The numbers clearly illustrate the additional push that the new branding has given us in combination with recruitment activities geared even more closely towards attracting talented employees.

Further progress was made with the "new work" concept that was launched in 2020 as well. Initial activities are being implemented at the German sites with the slogan "Cool place to rock business", boosting the appeal for current and potential employees alike. The advantages of remote working and flexible work time models will be combined in a way both timely and cost-effective in state-of-the-art offices. The activities have already been implemented under the "Cool place to rock business" aspect in countries such as Turkey, Poland or Denmark.

In 2021/2022, we again carried out employee surveys using our **EMPLOYEE EXPERIENCE TOOL QUALTRICS**. Supplementing personal talks, options for which were limited during the pandemic, this is a good way to keep a close eye on our employees' needs nonetheless. We have completed the analysis phase and 185 activities have already been initiated and implemented around the world as a result. To ensure the success of these activities in the long term as well, we have introduced the Employee Engagement Index (EEI) as a goal for our top management.

Naturally we are aware of the challenges of the coming years that we will face in the People department. In recent years we have observed a constant rise in demand for well-trained specialists while shortages have become apparent in the talent pool. There is high competitive pressure in the SAP field especially. At the same time, the young generation is more focused on sustainability and resi-

lience than efficiency and profitability. The desire for individualism and work-life balance is becoming ever greater. The effects of the COVID pandemic, combined with the fear of the next pandemic, are also contributing to current developments. To rise to precisely these challenges, we created our "People First Strategy 2022 and beyond" in 2021. Global think tanks developed five imperatives and set up eight global projects with which we intend to find answers to these developments. The five imperatives are briefly presented below.



We will exhaust every possibility to attract the best talent to our company and of course to keep it as well. To do so, we not only intend to recruit significantly more young talent, but also to ensure that we retain them in the long term through a number of activities in a wide range of areas. Also, partly by offering an attractive and individual career design, we want to inspire strong motivation and significantly increase investment in training. This is also about fanning the passion for digitalization by intensifying digital training. We wish to orchestrate sustainable agility and provide efficient processes and services to fulfill our employees' needs. The foundation for this will be formed by the full utilization of the opportunities afforded by SuccessFactors. We will continue to assist our leadership team in practicing this entrepreneurial and digital management style.

Sadly, the end of the fiscal year was overshadowed by the war in Ukraine. We immediately initiated a wide range of support activities to help our employees from Ukraine. In addition to fundraising within the People department, a platform was also created on our intranet for our employees to post housing opportunities for refugees and their families. We are engaged in a continuous dialog with our employees in neighboring countries and are still coordinating aid efforts. The incredible willingness to help among our employees has shown us once again that our corporate culture is alive and well, and that we can only successfully overcome the challenges as a team.

ECONOMIC REPORT

GENERAL ECONOMIC SITUATION IN 2021

As a wholly owned subsidiary of NTT DATA, NTT DATA Business Solutions AG is globally positioned. It supports more than 8,000 customers at more than 90 locations in 30 countries around the world. Thanks to this international orientation, global economic developments and the resultant investment decisions of customers have a significant impact on the performance of NTT DATA Business Solutions AG.

According to the International Monetary Fund (IMF), the global economy grew by around 6.1% in the 2021 calendar year, which is a significant economic recovery following the slump in the global economy caused by the pandemic in the previous year. This positive trend was largely influenced by the revival of international trade and positive signals from the manufacturing industry and the service sector. A resurgence in COVID infection numbers put the brakes on an even more impressive recovery.

After a real decline in GDP of 6.4% in the 2020 calendar year, growth in the euro area amounted to 5.3% in 2021. While the rise in GDP in Germany was relatively moderate at 2.8%, the economies of France and Italy enjoyed stronger growth of up to 7%. This goes for the UK as well.

NTT DATA Business Solutions AG generated 47.2% of its consolidated revenue in euro area countries in 2021/2022 after 46.2% in the previous year (2020/2021).

The US economy grew by 5.7% over the year (previous year: -3.4%). In particular, this was driven by higher consumer spending, investment in equipment, exports and investment in inventory.

NTT DATA Business Solutions generated 13.1% (previous year: 11.7%) of its consolidated revenue in the US and Canada.

Unstable domestic and economic policy conditions largely influenced developments in Turkey in the 2021 calendar year. The poor exchange rate between the Turkish lira and the euro was particularly memorable.

NTT DATA Business Solutions generated 5.1% (previous year: 5.0%) of its consolidated revenue in Turkey in 2021/2022.

In Brazil, high world market prices for commodities and the recovery of the service sector especially led to an economic revival and a rise in GDP of 4.6% (previous year: -3.9%). Nevertheless, the economy in Brazil is suffering from high inflation and the dramatic removal of monetary policy incentives that had been intended to spark economic growth in the previous year.

NTT DATA Business Solutions generated 2.6% (previous year: 2.3%) of its consolidated revenue in Brazil in 2021/2022.

The Chinese economy, which was sent reeling at the start of the pandemic, quickly got the virus under control in the 2021 calendar year thanks to its zero-COVID strategy, mass testing, quarantines and travel restrictions. China's national economy recovered significantly in 2021. Strong exports are supporting the Chinese economy, enabling a year-on-year increase of 8.1% (previous year: 2.2%).

China accounted for only a small share of NTT DATA Business Solutions' revenue at 0.8% (previous year: 0.8%).

Even though it does not generate revenue directly in Japan, the Japanese economy is highly important to NTT DATA Business Solutions as it is part of the NTT DATA Group. Nonetheless, there are customer relationships with Japanese groups, both directly and through affiliates. The economy in Japan recovered from the slump triggered by the pandemic in the previous year, leading to growth in GDP of 1.6% (previous year: -4.5%).

Against this backdrop, exchange rates were highly volatile.

The US dollar/euro exchange rate fluctuated between 1.101 and 1.190 over the year, with the euro around 7.5% weaker as of the end of the year (March 2022) than as of March 2021.

Pound sterling ended the year (March 2022) approximately 2.7% higher than at the end of the previous year. The Brazilian real dropped by around 18% against the euro, while the euro rose by almost 80% against the Turkish lira.

SECTOR DEVELOPMENT IN 2021

According to the Gartner study from January 2022, global IT spending was up by 9.0% in the 2021 calendar year (previous year: 0.9%). The sub-markets relevant to NTT DATA Business Solutions, software and IT services, expanded by 14.4% and 10.7%, thereby outpacing the IT market as a whole.

BUSINESS DEVELOPMENT AND ECONOMIC POSITION

The following table shows the changes in revenue in the segments and revenue areas compared to the corresponding prior-year figures and the Group's earnings development in MEUR

MEUR	Apr 1, 2021 – Mar 31, 2022	Apr 1, 2020 – Mar 31, 2021
Total revenues	1,241.3	1,071.7
Revenue division		
Consulting	554.7	449.6
Licenses	65.4	63.8
Cloud Subscription	57.3	38.4
Managed Services	558.0	511.4
Other	5.9	8.5
Revenue segment		
Germany/Austria/Switzerland (DACH)	541.8	482.9
Western Europe	183.9	157.8
North and Eastern Europe (NEE)	218.8	188.3
America	193.5	149.3
Asia	63.0	59.4
Other APAC	30.0	25.7
Other	10.3	8.3
EBIT	48.3	17.1
EBIT margin	3.9%	1.6%
EBITA	63.5	31.0
EBITA margin	5.1%	2.9%
EBITDA	107.9	75.5
EBITDA margin	8.7%	7.0%
IFRS net profit	27.0	2.1
IFRS earnings per share in EUR/ Share of shareholders NTT DATA Business Solutions AG	0.64	-0.13

REVENUE DEVELOPMENT

NTT DATA Business Solutions continued its positive revenue performance in fiscal 2021/2022. Revenue climbed by +15.8% from MEUR 1,071.7 to MEUR 1,241.3 (adjusted for currency effects: +16.3%). Average revenue growth (CAGR) for the past ten years amounts to 13.1%.



Revenue development
2011/2012 – 2021/2022
Page 92

A look at the quarter-on-quarter performance shows that NTT DATA Business Solutions significantly outperformed prior-year revenue in all quarters in fiscal 2021/2022. The increase in revenue was +13.8% in the first quarter, with the largest percentage change achieved in the second quarter at +17.4%. The change in the third and fourth quarters was +16.2% and 15.9% respectively. The companies in Finland, the US and Germany acquired in 2020/2021 contributed +1.2% to revenue growth. Organic growth amounted to +14.6%. Exchange rates also reduced revenue performance by -0.5%.



Revenues by quarter
Page 93

NTT DATA Business Solutions breaks down revenue by both segment and division. The corresponding changes are shown in the charts on page 92.



Revenue development
by regional segment, by division
Page 92

The breakdown of revenue by segment in fiscal 2021/2022 was as follows: DACH 43.6% (previous year: 45.1%), Western Europe 14.8% (previous year: 14.7%), Northern and Eastern Europe 17.6% (previous year: 17.6%), the Americas 15.6% (previous year: 13.9%), Asia 5.1% (previous year: 5.5%), Other APAC 2.4% (previous year: 2.4%) and Other 0.8% (previous year: 0.8%).

The individual units generated the following revenue shares: Consulting 44.7% (previous year: 42.0%), Licenses 5.3% (previous year: 6.0%), Cloud Subscription 4.6% (previous year: 3.6%), Managed Services 45.0% (previous year: 47.7%) and Other 0.5% (previous year: 0.8%).

The development of recurring business in the individual units of Maintenance, Application Management and Managed Cloud and Cloud Subscription from fiscal years 2011/2012 to 2021/2022 is set out on page 93.



Recurring business as a
proportion of total revenue
Page 93

REVENUE DEVELOPMENT IN THE REGIONS

The NTT DATA Business Solutions segment with the highest revenue, which comprises the countries Germany/Austria/Switzerland (**DACH**), increased its revenue by +12.2% to MEUR 541.8 (adjusted for currency effects: 11.0%).

The highest absolute increase in revenue in the DACH segment was achieved in Consulting, which grew by MEUR +37.6 (+21.1%) from MEUR 178.4 to MEUR 216.0. License revenue outstripped the previous year's level by +5.2%, rising by MEUR +1.3 from MEUR 26.1 to MEUR 27.4. Cloud Subscription revenue rose by MEUR +5.5 from MEUR 9.9 to MEUR 15.4 (+55.8%). Managed Services revenue rose by MEUR +15.8 from MEUR 263.3 to MEUR 279.1.

Revenue in the **WESTERN EUROPE SEGMENT** rose by +16.5% (adjusted for currency effects: 15.0%) from MEUR 157.8 to MEUR 183.9. Revenue developed positively in all countries.

Consulting business in the Western Europe segment grew as against the same period of the previous year. Revenue rose from MEUR 66.0 to MEUR 77.5, an increase of MEUR +11.5 or +17.5% (adjusted for currency effects: +15.6%).

Revenue in Licenses business rose by MEUR +0.3 from MEUR 10.9 to MEUR 11.2. Cloud Subscription business reported a strong increase of MEUR +4.1 or 33.5% to MEUR 16.4 as a result of the good performance in the UK, France and Benelux. Managed Services also achieved revenue growth of MEUR +10.3 from MEUR 68.5 to MEUR 78.8. This increase mainly related to the UK, Benelux and France.

The **NORTHERN AND EASTERN EUROPE SEGMENT** generated revenue of MEUR 218.8 in the past fiscal year, outperforming the previous year by MEUR +30.5 or 16.2%. Adjusted for currency effects, revenue increased by +17.4%. This highly positive development is essentially thanks to Turkey at MEUR +13.0 and Nordics at MEUR 14.4.

In the Northern and Eastern Europe segment, Consulting business grew by MEUR +16.8 or +17.5% year-on-year from MEUR 95.5 to MEUR 112.3 (adjusted for currency effects: +18.4%). The figure for Managed Services was MEUR 80.1, an increase on the prior-year figure of MEUR 72.0 of MEUR +8.1. At MEUR 10.0, license revenue was down MEUR -0.6 on the prior-year figure of MEUR 10.6. Adjusted for currency effects, revenue would have been MEUR -0.3 lower year-on-year.

In the **AMERICAS SEGMENT**, revenue climbed by +29.6% from MEUR 149.3 in the previous year to MEUR 193.5. Adjusted for currency translation effects, revenue even grew by +33.2%. This positive development was carried by all companies. The effect was further amplified by the acquired company MSCG in the US, which made a strong positive contribution to the region's revenue.

Consulting business improved very significantly in the Americas segment, rising by MEUR +27.8 year-on-year from MEUR 64.5 to MEUR 92.3. Besides the outstanding revenue performance in Brazil and the US, much of this effect relates to the acquired company MSCG, which made a major revenue contribution of around MEUR 18.0. Managed Services business climbed by MEUR +11.3 from MEUR 72.7 to MEUR 84.0. In addition to revenue growth in Brazil (MEUR +2.2) and the US (MEUR +8.9), all other companies further increased their revenue. License business grew as well to MEUR 10.3, an increase of MEUR +1.8 (adjusted for currency effects: +22.9%). This is thanks to the positive development in Canada and Brazil.

Revenue outperformed the previous year's level in the **ASIA SEGMENT**, rising by MEUR +3.6 from MEUR 59.4 to MEUR 63.0. This marks an increase in revenue of +6.1% (adjusted for currency effects: -1.6%).

At MEUR 32.7, revenue from Consulting business was up by MEUR +3.2 on the prior-year figure of MEUR 29.5, essentially due to the company in China. License business in Asia climbed by MEUR +0.8

to MEUR 4.1 (previous year: MEUR 3.3). Managed Services generated revenue of MEUR 24.0, outperforming the previous year's level by MEUR +0.8 (MEUR 23.2).

Revenue in the new **OTHER APAC SEGMENT** rose by MEUR +4.3 from MEUR 25.7 to MEUR 30.0 (16.7%). This increase in revenue relates to the company in India. Adjusted for currency effects, the increase would have amounted to +18.8%.

The **OTHER SEGMENT** contains the revenue of ITC GmbH and Recruit GmbH. At MEUR 10.3, the revenue generated by these two companies was above the previous year's level of MEUR 8.3 thanks to the good business performance of ITC GmbH.

REVENUE DEVELOPMENT BY DIVISION

NTT DATA Business Solutions achieved a highly dynamic increase in revenue as against the previous year in fiscal 2021/2022.

CONSULTING revenue rose by +23.4% year-on-year from MEUR 449.6 to MEUR 554.7. This development was as a result of higher capacity utilization among consultants and stable daily rates. Growth through acquisitions also contributed around MEUR 18.0 from the US.

LICENSE revenue increased slightly by MEUR +1.6 or +2.5% from MEUR 63.8 in the previous year to MEUR 65.4 in fiscal 2021/22.

The highest percentage increase (+49.2%) was achieved in **CLOUD SUBSCRIPTION**, where there was revenue growth of MEUR +18.9, from MEUR 38.4 in the previous year to MEUR 57.3. The increase is essentially thanks to the positive performance in the UK, Germany, Turkey and the Nordics region.

MANAGED SERVICES achieved significant growth of MEUR +46.5 from MEUR 511.4 to MEUR 557.9. This increase of 9.1% is due to volume growth in the Americas, Germany, the UK and the Nordics region.

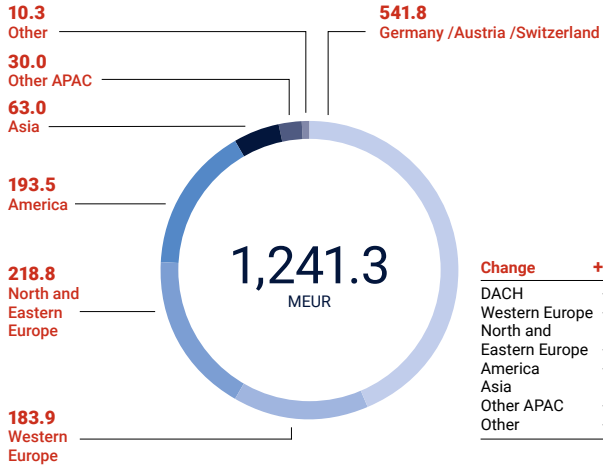
Orders on hand at NTT DATA Business Solutions climbed by +11.3% from BEUR 1.262 to BEUR 1.405. The book-to-bill ratio for 2021/2022 was 1.13.



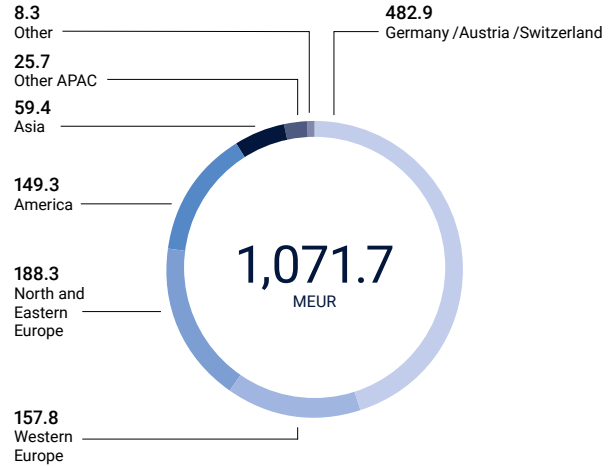
REVENUE DEVELOPMENT BY SEGMENT

MEUR

March 31, 2021/2022



March 31, 2020/2021

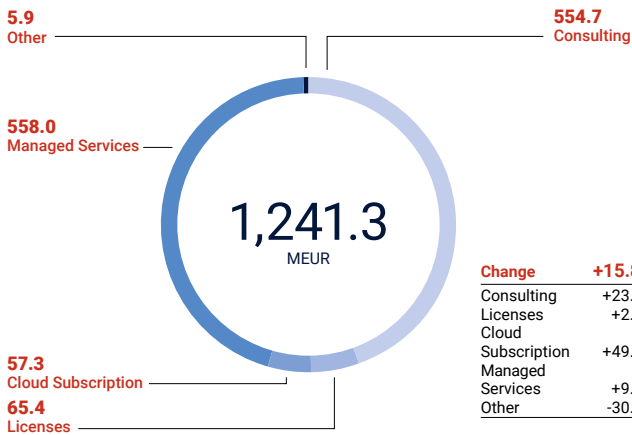


Change	+15.8%
DACH	+12.2%
Western Europe	+16.5%
North and Eastern Europe	+16.2%
America	+29.6%
Asia	+6.1%
Other APAC	+16.7%
Other	+24.1%

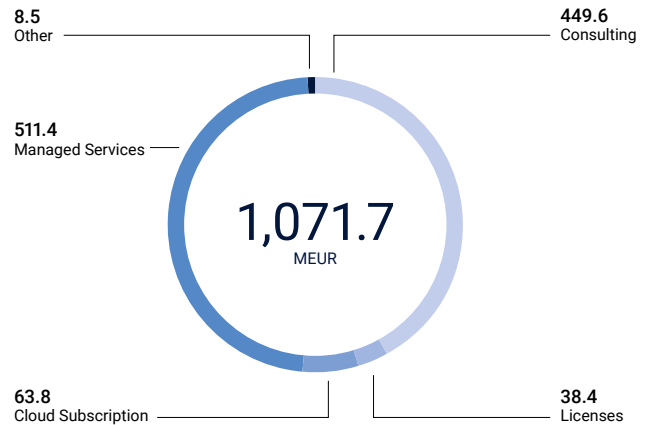
REVENUE DEVELOPMENT BY DIVISION

MEUR

March 31, 2021/2022



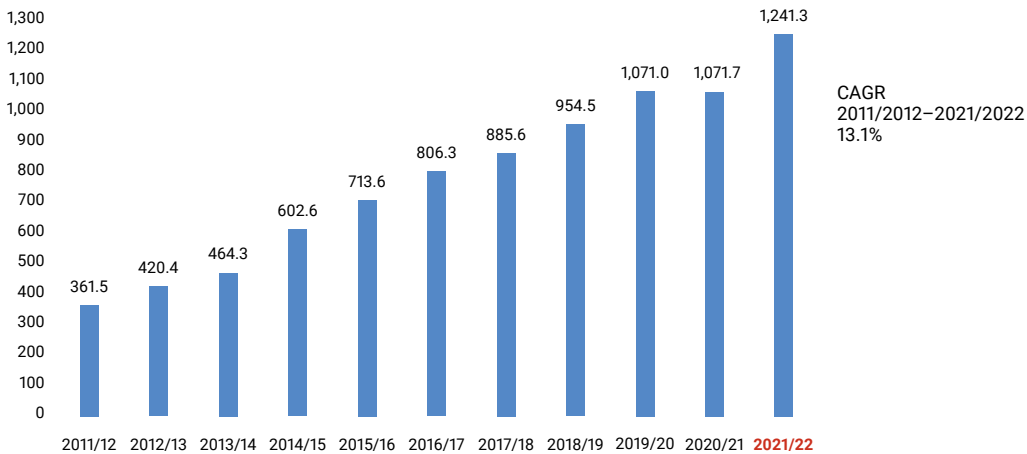
March 31, 2020/2021



Change	+15.8%
Consulting	+23.4%
Licenses	+2.5%
Cloud Subscription	+49.2%
Managed Services	+9.1%
Other	-30.6%

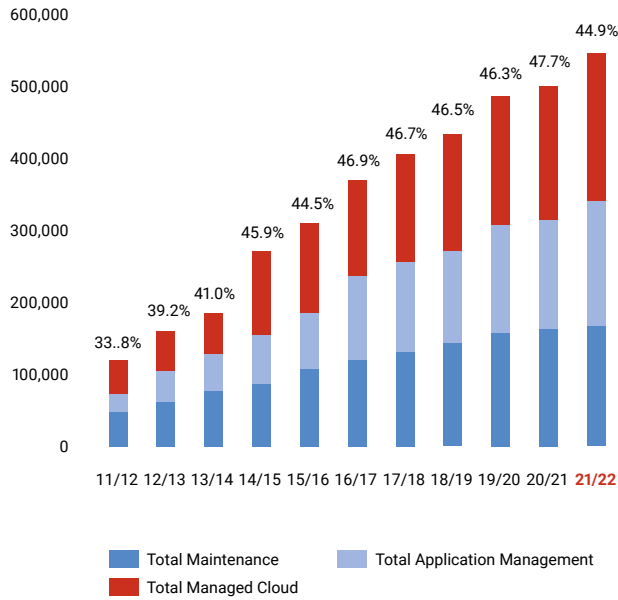
REVENUE DEVELOPMENT 2011/2012–2021/2022

MEUR



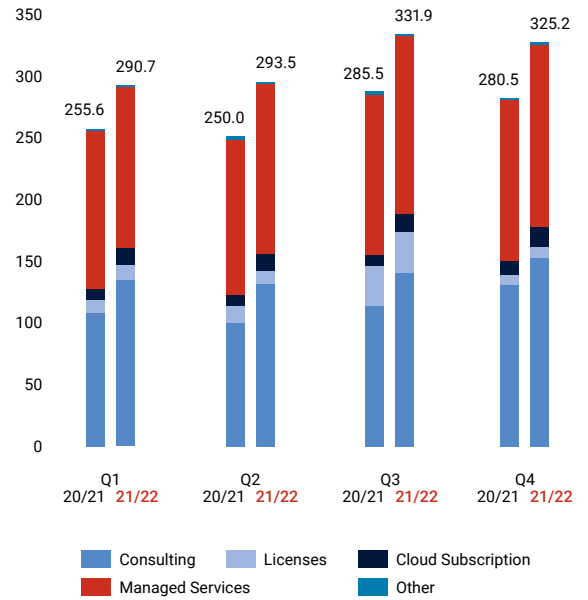
RECURRING BUSINESS

as a proportion of total revenues in MEUR



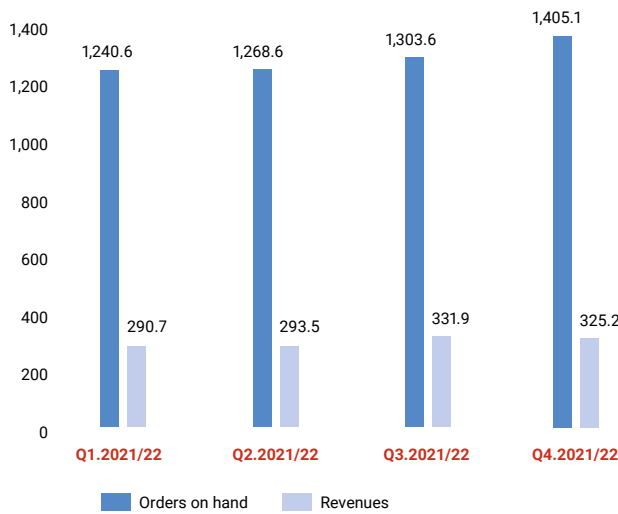
REVENUES BY QUARTER

MEUR



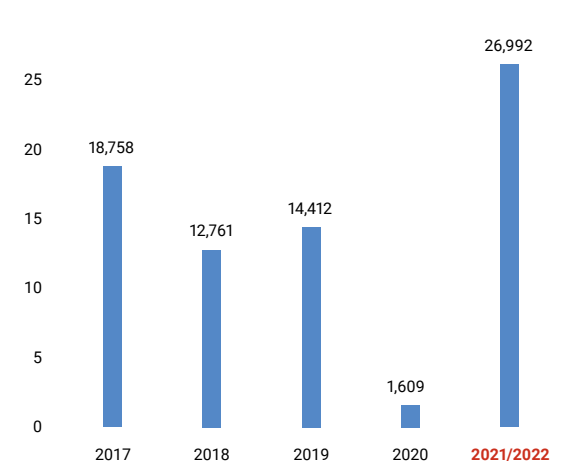
ORDERS ON HAND & REVENUES

per quarter in MEUR



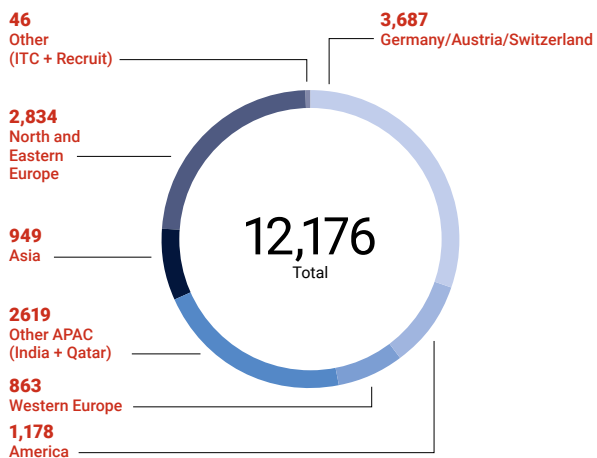
CONSOLIDATED NET PROFIT

KEUR

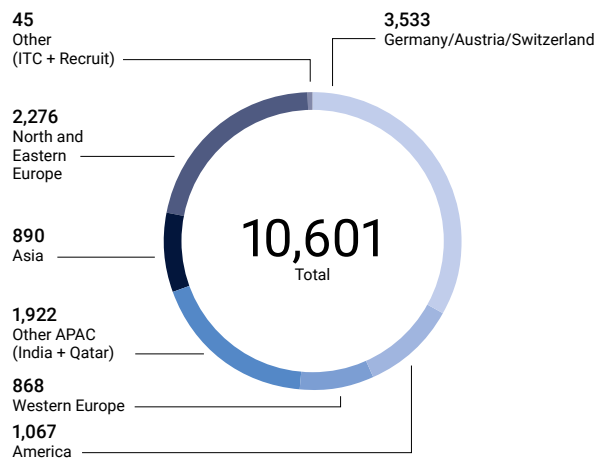


EMPLOYEES BY SEGMENT

March 31, 2022

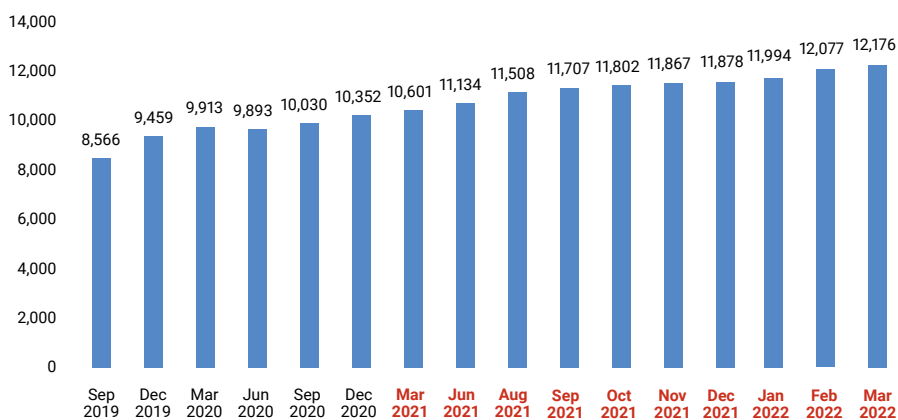


March 31, 2021



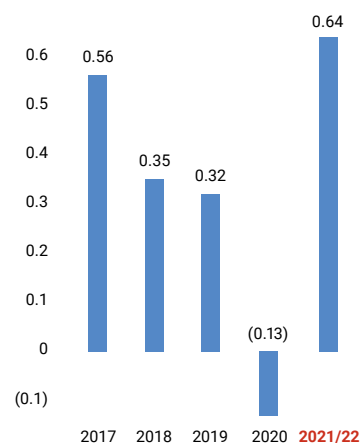
EMPLOYEE DEVELOPMENT

at the end of the month



EARNINGS PER SHARE

EUR



NET ASSETS, FINANCIAL POSITION AND RESULTS OF OPERATIONS

RESULTS OF OPERATIONS

NTT DATA Business Solutions AG likewise experienced very significant and strong growth in earnings in fiscal 2021/2022. EBITA amounted to MEUR 63.5 in the past fiscal year after MEUR 31.0 in the previous year, an increase of +104.8%. The EBITA margin thus climbed to 5.1% after 2.9% in the previous year.

Both the global cost and efficiency program initiated in the previous year and the rebranding project were successfully implemented in fiscal 2021/2022. Operating EBITA (= EBITA before non-recurring and rebranding costs) rose by MEUR +39.9 year-on-year, from MEUR 50.8 to MEUR 90.7. While strategic investments of MEUR 19.8 were incurred in the previous year, in the year under review – in coordination with the shareholders – MEUR 27.2 was invested in measures relating to long-term profitability enhancement and the name change. The operating EBITA margin was therefore 7.3% (previous year: 4.7%), outperforming the previous year's forecast figure of more than 5%.

EBIT amounted to MEUR 48.3 in the fiscal year, bettering the prior-year figures by MEUR +31.2 (previous year: MEUR 17.1). The EBIT margin was therefore 3.9%, marking a year-on-year increase of +2.3 percentage points (previous year: 1.6%).

The difference of 1.2 percentage points between the EBIT margin and the EBITA margin is due to amortization of intangible assets of MEUR 15.2 (previous year: MEUR 13.9). Capitalized customer relationships and orders on hand are amortized over periods that reflect the respective contractual terms.

EBITA in the **WESTERN EUROPE SEGMENT** amounted to MEUR 15.5 in the past fiscal year, while operating EBITA amounted to MEUR 17.8 (prior-year EBITA: MEUR 10.6). All companies made a positive contribution to earnings and the level in the UK especially improved greatly.

EBITA in the **DACH SEGMENT (INCLUDING HEADQUARTERS)** amounted to MEUR 9.9 in 2021/2022, while operating EBITA amounted to MEUR 26.8 (prior-year EBITA: MEUR -5.7). Higher capacity utilization at all operating companies, higher daily rates and optimized project management contributed to this strong earnings development.

The **NORTHERN AND EASTERN EUROPE SEGMENT** generated EBITA of MEUR 14.1, while operating EBITA amounted to MEUR 18.5 (prior-year EBITA: MEUR 12.3). Higher profitability in the Nordics region and Turkey in addition to the positive developments in Poland and Czechia allowed earnings to improve significantly.

EBITA in the **AMERICAS SEGMENT** amounted to MEUR 24.4, while operating EBITA was MEUR 24.8 (prior-year EBITA: MEUR 9.9). In addition to the very strong earnings contribution by the existing company in the US, a strong contribution to growth was also made by the acquisition of MSCG. Developments in Brazil and Canada remained at a high level.

The **ASIA SEGMENT** generated EBITA of MEUR -2.5, while operating EBITA amounted to MEUR -1.3 (prior-year EBITA: MEUR +0.8). The positive development of the companies in Malaysia and Thailand proved unable to compensate for consulting business in China, which was again significantly beset by project risks and valuation allowances.

The **OTHER APAC SEGMENT**, comprising the companies in India and Qatar, generated EBITA of MEUR 2.3 in fiscal 2021/2022. By contrast, operating EBITA amounted to MEUR 3.5 (prior-year EBITA: MEUR 2.2).

In the **OTHER SEGMENT**, the EBITA contribution of MEUR -0.3 did not match the previous year's level and was down by MEUR -1.1 compared to 2020/2021.

NET FINANCE COSTS

Net finance costs amounted to MEUR -4.5 in the past fiscal year after MEUR -9.5 in the previous year. This figure includes finance income from short-term investments of MEUR 0.9 (previous year: MEUR 1.3) and finance costs of MEUR 6.9 (previous year: MEUR 5.4). Net finance costs also include income and expenses from the remeasurement of derivatives and the exercise of options. In total, the past fiscal year saw income of MEUR 0.8 (previous year: expenses of MEUR -5.4). Overall, this results in earnings before taxes (EBT) of MEUR 43.9 after MEUR 7.5 in the previous year, an increase of 482.6%.

TAX EXPENSE

The tax expense amounted to MEUR 16.9 in fiscal 2021/2022 after MEUR 5.4 in the previous year. At 38.5%, the consolidated tax rate was down significantly on the prior-year figure of 71.7%. The year-on-year reduction in the tax rate essentially resulted from the use of loss carryforwards. Further information on income taxes can be found in note (9) of the notes to the consolidated financial statements.

CONSOLIDATED NET PROFIT AND EARNINGS PER SHARE

NTT DATA Business Solutions AG's consolidated net profit for the current fiscal year rose to MEUR 27.0, up by MEUR 24.9 on the prior-year figure of MEUR 2.1.

The share of consolidated net profit attributable to the shareholders of NTT DATA Business Solutions AG decreased from MEUR -3.8 in the previous year to MEUR 19.2 in the past fiscal year. Accordingly, earnings per share climbed by EUR 0.77 from EUR -0.13 in the previous year to EUR 0.64. Earnings per share were calculated on the basis of 30,014,838 shares.



Consolidated net profit
Page 93



Earnings per share
Page 94

NET ASSETS

Reflecting the Group's growth, total consolidated assets rose by MEUR 66.0 or around 7.3% in the past fiscal year.

ASSETS MEUR	Mar 31, 2022	Mar 31, 2021	Change
Intangible assets	317.2	304.6	12.6
Property, plant and equipment	157.9	175.2	-17.3
Non-current receivables and other assets	24.1	13.9	10.2
Non-current assets	499.2	493.7	5.5
Current receivables and other assets	343.4	300.2	43.2
Cash and cash equivalents	128.9	111.6	17.3
Current assets	472.3	411.8	60.5
Total assets	971.5	905.5	66.0
EQUITY AND LIABILITIES MEUR	Mar 31, 2022	Mar 31, 2021	Change
Equity (including non-controlling interests)	322.1	287.6	34.5
Financial liabilities	203.5	215.9	-12.4
Provisions for pensions and other provisions	14.6	11.1	3.5
Other non-current liabilities	22.7	20.5	2.2
Non-current liabilities	240.8	247.5	-6.7
Trade payables	167.4	147.7	19.7
Financial liabilities	55.4	90.8	-35.4
Other current liabilities and provisions	185.8	131.9	53.9
Current liabilities	408.6	370.4	38.2
Total capital	971.5	905.5	66.0

At MEUR 499.2 in the past fiscal year, non-current assets were up by 1.1% on the prior-year figure of MEUR 493.7. Non-current assets accounted for 51.4% of total assets as of the end of the reporting period (previous year: 54.5%). The main items under non-current assets are goodwill at MEUR 245.2 (previous year: MEUR 240.7) and property, plant and equipment of MEUR 157.9 (previous year: MEUR 175.2). The acquisition of the 51% majority interest in Business Services and Technologies OOD in Bulgaria increased goodwill by MEUR 1.8. Currency translation effects led to an increase of MEUR 11.4. The reclassification of orders on hand and customer relationships reduced goodwill by MEUR -9.3.

Current assets rose to MEUR 472.3 as of the end of the reporting period compared to MEUR 411.8 in the previous year. They thus accounted for 48.6% of total assets (previous year: 45.5%). As a result of international cash pooling accounts with the NTT DATA Corporation and the excess of plan assets over pension liabilities, the most significant increase here was in other financial assets. Trade receivables increased year-on-year from MEUR 184.7 to MEUR 203.9 as a result of higher growth in

revenue. The average days sales outstanding – defined as the average number of days from invoicing to receipt of payment from the customer – decreased by four days to 46 days as of the end of the reporting period (previous year: 50 days). Cash and cash equivalents grew to MEUR 128.9 after MEUR 111.6 in the previous year. Assets held for sale of MEUR 19.3 were reported for the first time (previous year: MEUR 0.00). These are assets that can be sold in their current state and whose disposal is highly likely. On the one hand, they have been reported to reflect the reclassification of the assets of the subsidiaries in Russia, Ukraine, Qatar and ICS GmbH. On the other, assets held for sale were increased by the reclassification of the real estate in the US. The intention is to sell the companies and the building, including the land, within twelve months. Further information on assets and liabilities held for sale can be found in note (29) of the notes to the consolidated financial statements.

On the liabilities side of the consolidated statement of financial position, equity essentially grew by MEUR 27.0 as a result of consolidated net profit and by MEUR 13.1 as a result of a capital increase. The increase of MEUR 10.6 in other equity is due to positive exchange rate effects of MEUR 11.7 and actuarial losses of MEUR 2.9, offset by the effects of put/call options in conjunction with acquisitions of MEUR -4.0. The reported net accumulated profit attributable to the shareholders of NTT DATA Business Solutions AG rose by MEUR 19.2. Overall, equity rose by MEUR 322.1 to MEUR 34.5 (previous year: MEUR 287.6). The equity ratio, which describes equity as a share of total assets, climbed from 31.8% in the previous year to 33.2%.

Non-current liabilities accounted for 24.8% of the Group's total equity and liabilities as of March 31, 2022, lower than the previous year's level of 27.3%. Generally, the non-current financial liabilities predominantly relate to the financing of the data centers in Germany and abroad and to the Group's acquisition activities.

NTT DATA Business Solutions' current liabilities likewise increased by MEUR 38.2 to MEUR 408.6. This results from the rise in other non-financial liabilities as of the end of the year. A reduction in financial liabilities was essentially caused by the full repayment of international cash pooling accounts with the NTT DATA Corporation. In previous years, the funds utilized served to finance short-term working capital requirements in Germany and abroad. Further information on financial liabilities can be found in note (23) of the notes to the consolidated financial statements.

The increase in other non-financial liabilities is mainly linked to the rise in provisions. This increase mostly results from higher warranty provisions for work still to be performed under maintenance contracts and free additional work in customer projects. Furthermore, liabilities of MEUR 4.2 (previous year: MEUR 0.0) were reclassified in connection with the subsidiaries reported as held for sale.

At 42.1%, the ratio of current liabilities to total assets was up on the prior-year figure of 40.9%.

FINANCIAL POSITION

CASHFLOW MEUR	Mar 31, 2022	Mar 31, 2021	Change
Cashflow from operating activities	136.9	102.1	34.8
Cashflow from investing activities	-30.5	-61.8	31.3
Cashflow from financing activities	-86.4	-20.9	-65.5
Change in liquidity	20.0	19.4	0.6

In the past fiscal year, cash flow from operating activities increased by MEUR 34.8 to MEUR 136.9. Besides the continuing systematic working capital management, the key driver was the sharp rise in EBITDA. Days sales outstanding (DSO) declined by four days to 46 days in the reporting year.

The cashflow from investing activities was MEUR 30.5, significantly lower than the previous year's figure of MEUR 61.8. This was due in particular to purchase price payments for the acquisition of the new companies (less the cash funds acquired) in the amount of MEUR 4.1 (previous year: MEUR 23.9). Investments in intangible assets and property, plant and equipment (less investment subsidies and grants) amounted to MEUR 26.0 in the reporting period after MEUR 36.2 in the previous year. As in previous years, investments in property, plant and equipment focused on the expansion of data center capacity in Germany and abroad.

The DACH segment accounted for investments including finance leases of MEUR 17.6 (previous year: MEUR 15.0), Northern and Eastern Europe for MEUR 4.5 (previous year: MEUR 7.8) and the Americas for MEUR 1.5 (previous year: MEUR 5.6).

The cashflow from financing activities amounted to MEUR -86.4 in total (previous year: outflow of MEUR 20.9). The Group raised financial liabilities of MEUR 2.2 in fiscal 2021 and received a capital increase of MEUR 13.1. This was offset by repayments of financial liabilities of MEUR 43.7, payments for put and call options of MEUR 14.0, MEUR 4.9 in dividend payments to non-controlling interests and the repayment of finance lease agreements of MEUR 29.5.

The interest rates for non-current financial liabilities range from 0.25% to 2.57%. Given the fixed interest agreements in place for existing financing, a change in interest rates would not have a significant impact on the NTT DATA Business Solutions Group's financial position. For future growth finance, a change in interest rates would affect the Group's financial position and net interest income. Details on the nature, maturity and interest rate structure of the liabilities can be found in note (23) "Financial liabilities" in the notes to the consolidated financial statements.

Cash funds increased by MEUR 17.3 to MEUR 128.9 as of the end of the reporting period (previous year: MEUR 111.6). Cash of MEUR 25.6 was held in the euro area and was not subject to exchange rate effects. Cash funds held outside the euro area of MEUR 103.3 were invested and recognized in the currencies of the appropriate countries. They were translated at the closing rate as of the end of the year. The consolidated financial statements will continue to be subject to currency translation

effects in the future. The Group's liquidity reserves were invested solely in short-term investments, meaning that interest rate fluctuations for such investments on the money and capital markets affect NTT DATA Business Solutions' net interest income.

In order to increase financial flexibility, additional credit facilities of MEUR 26.8 were agreed in Germany. In the year under review, these were utilized for guarantees and loans in the amount of MEUR 3.9. In addition to credit facilities in Germany, subsidiaries also utilized credit facilities abroad. These credit facilities with a total volume of MEUR 35.4 were agreed in the respective local currencies and were partially guaranteed by NTT DATA Business Solutions AG. The utilization of these credit facilities by subsidiaries amounted to MEUR 8.9 as of the end of the reporting period.

The Management Board of NTT DATA Business Solutions AG expects the cash funds of MEUR 128.9, in conjunction with financial reserves in the form of various unutilized credit facilities, to be sufficient to cover its operating capital requirements and – together with the expected cashflow from operating activities – the scheduled debt repayments and other planned short-term and medium-term investments.

The partnership with NTT DATA also ensures the Group's financial flexibility.

OVERALL ASSESSMENT OF THE ECONOMIC POSITION

NTT DATA Business Solutions significantly outperformed its growth targets in fiscal 2021/2022. Despite aiming for revenue of BEUR 1.083 to BEUR 1.104 (+1.0% to +3.0%), it actually achieved growth of 15.8% to BEUR 1.241. Organic revenue rose by a strong 14.6%, while revenue growth of +1.2% was achieved through acquisitions.

The biggest increases in revenue were achieved in the Consulting segment on our European core markets and in the US.

The equity ratio increased significantly by 1.4 percentage points to 33.2% in the reporting year (previous year: 31.8%). While equity increased by MEUR 34.5, total assets rose by MEUR 66.0 to MEUR 971.5. Cash funds also rose significantly from MEUR 111.6 to currently MEUR 128.9. The cashflow from operating activities thus increased by MEUR 35.9 year-on-year to MEUR 138.0. This development is primarily due to improved receivables management in combination with a significant reduction in DSO. Payments for investments also decreased significantly from MEUR 61.8 to currently MEUR 30.5, with the result that the total cashflow from investing activities is down by MEUR 31.3.

The cashflow from financing activities amounted to MEUR -86.4 in total (previous year: MEUR -20.9). In addition to the reduced support for M&A transactions through capital increases (MEUR 13.1) compared to the previous year (MEUR 39.8), the change is largely as a result of the repayment of financial liabilities.

In compliance with global authorization processes, having NTT DATA as a parent company means that loans, financing and capital increases for major investment and acquisition projects can be provided at all times. The Management Board rates NTT DATA Business Solutions' financial headroom as sufficiently stable to finance the envisaged organic growth in Germany and abroad. The Management Board still regards the company's economic position as good.

FINANCIAL AND NON-FINANCIAL PERFORMANCE INDICATORS

FINANCIAL PERFORMANCE INDICATORS

The most important financial performance indicators used by NTT DATA Business Solutions AG are revenue and earnings before interest, taxes and amortization (EBITA).

As a result of the ongoing cost-efficiency program, a distinction is made between operating EBITA and EBIT before the cost-efficiency program and EBITA and EBIT including the effects of the ongoing cost-efficiency program. These performance indicators are presented to and discussed with the Management Board on a monthly basis as part of internal reporting, thus allowing measures to be initiated in a timely manner as required.

In addition to the above key financial performance indicators, NTT DATA Business Solutions AG also uses a wide range of operational key figures to measure strategic objectives in terms of growth and efficiency improvements. This includes utilization levels, the development of daily rates and project budget compliance in the Consulting business and the number of new customers in the Licenses and Maintenance business. Sales activities in all divisions are monitored and managed centrally through the regular monitoring of the sales pipeline and the development of orders on hand. The following financial performance indicators are also used:

- Net finance costs: This performance indicator provides information regarding interest on cash funds and interest payable on borrowed funds. The measurement of derivatives and the exercise of options also features prominently here.
- Days sales outstanding (DSO): Another important aspect is working capital management through monitoring of the days sales outstanding of operating receivables. Days sales outstanding (DSO) of receivables is defined as the average number of days from invoicing to receipt of payment from the customer.
- Tax rate: The tax rate corresponds to the ratio of income tax expense to earnings before income taxes in percent.
- Cashflow from operating, investing and financing activities: NTT DATA Business Solutions' statement of cashflows describes how the Group generated and used cash and cash equivalents.

NON-FINANCIAL PERFORMANCE INDICATORS

Employees

NTT DATA Business Solutions AG's business success and leadership claim as a strategic SAP full-service provider is essentially based on highly qualified and motivated employees who identify with the company. The performance indicator in this context is employee satisfaction, which is measured by regular surveys.

Customers and quality

Customer satisfaction is of central importance to the NTT DATA Business Solutions Group's business success. It forms the basis for trust-based partnership and long-term cooperation.

The success of extensive, complex projects depends to a large extent on high-quality implementation in line with the agreed budgets and deadlines. To prevent deviations from planning that could have a negative impact on its earnings situation, NTT DATA Business Solutions has established detailed, binding requirements for the tender process and for project and quality management.

The quality of NTT DATA Business Solutions' work is indicated by the number of SAP awards received.

A further non-financial performance indicator in this context is customer satisfaction. This is measured by customer surveys following the completion of projects.

Research and development

As NTT DATA Business Solutions does not perform any research and development in the narrower sense, it depends in particular on the many innovations in the area of industry solutions for more efficient implementation of SAP to maintain and expand its international competitiveness.

COMPOSITION OF THE MANAGEMENT BOARD AND SUPERVISORY BOARD AND ASSIGNMENT OF OTHER MANAGEMENT ROLES

(unaudited management report content)

Gender equality and diversity are issues of major importance to the NTT DATA Business Solutions Group. Staff diversity is promoted at all levels by a number of measures and activities around the world. The Group takes part in a number of programs to support young women in the workplace and advocates work-life balance activities. Companies of the NTT DATA Business Solutions Group in various countries have earned external awards for their family friendliness. Tolerance, openness and respect are core corporate values, which is why the NTT DATA Business Solutions Group supports the LGBTQ+ community through campaigns and activities during Pride Month.

In accordance with the German Act on Equal Participation of Women and Men Regarding Leadership Positions within the Sectors of Private Economy and Public Service, the following targets for the com-

position of the Management Board and Supervisory Board and for the assignment of other management roles are stated pursuant to sections 76(4) and 111(5) of the German Stock Corporation Act:

The share of women on the Supervisory Board (six members) and the Management Board (two members) is currently zero. A higher target was not set as currently no members of the Supervisory Board or the Management Board are women and no changes are planned. However, the company hopes to increase the share of women in the Supervisory Board and the Management Board by strategically embedding gender equality and diversity.

There are currently no women in the first management level below the Management Board. The share of women in the management level below that is 16%, or 14% combined for both management levels. This is not satisfactory at this key management level. The target for the next three years for the two management levels below the Management Board is 16%. To make this possible, the current share of women in the global workforce of the NTT DATA Business Solutions Group is to be increased from 29.0% (previous year: 27.4%) to more than 30%.

DEPENDENT COMPANY REPORT

All shares in NTT DATA Business Solutions AG are held by NTT DATA EUROPE GmbH & Co. KG, Bielefeld. NTT DATA EUROPE GmbH & Co. KG is a wholly owned subsidiary of NTT DATA Corporation, Japan. As there is no control or profit transfer agreement in place with NTT DATA EUROPE GmbH & Co. KG and no incorporation is planned, the Management Board of NTT DATA Business Solutions AG is required to prepare a dependent company report in accordance with section 312 AktG.

In accordance with section 312(3) AktG the Management Board hereby declares that, in the case of the transactions and measures contained in the dependent company report that were conducted on the basis of the circumstances known to the Management Board at the time the transactions were executed or measures were implemented or omitted, NTT DATA Business Solutions AG received appropriate consideration for each transaction and has not been disadvantaged by the implementation or omission of any measures.

REPORT ON RISK AND OPPORTUNITIES

REPORT ON RISK AND OPPORTUNITIES

NTT DATA Business Solutions AG's internal control system (ICS) essentially consists of five pillars: 1. Group-wide controlling; 2. financial reporting based on IFRS; 3. compliance management; 4. internal audit; and 5. Group-wide risk management.

In close coordination within the NTT DATA Group, the corporate internal audit and reporting system was continued and greatly expanded in 2021/2022 as well. The controls at business process level were reviewed again and new controls were added. The functionality of the controls within the business areas, such as the order-to-cash process, and the internal IT systems is monitored by management annually and reviewed in internal and external audits.

The risk inventory is updated once a year and corresponding measures are initiated.

OPPORTUNITY MANAGEMENT

NTT DATA Business Solutions is a long-term partner to its customers and assumes responsibility for the enhancement of IT initiatives and IT challenges to provide added value for its customers. NTT DATA Business Solutions provides Consulting, Software and Managed Services for its customers in close cooperation with SAP. SAP technology leadership, industry solutions and NTT DATA Business Solutions' process expertise continue to form the basis for successful cooperation.

NTT DATA Business Solutions' successful business model is based on a full-service provider approach with the above functions. NTT DATA Business Solutions is working to improve its customers' value chains through innovative solutions based on existing expertise. Management particularly anticipates opportunities on new markets with corresponding growth potential. Cloud computing, productivity enhancement based on Industry 4.0 solutions, S/4HANA and mobility also offer huge sustainable growth opportunities for NTT DATA Business Solutions.

OPPORTUNITIES OF FUTURE BUSINESS DEVELOPMENT

As a result of its customers' technological requirements, NTT DATA Business Solutions has a large number of economic growth opportunities at its disposal. These chiefly result from innovations in SAP products and the possibilities they create for further process automation. This position is supplemented by the international cooperation with SAP SE. Further opportunities arise from the continuous development of in-house products, which also enable further automation in customer processes. NTT DATA Business Solutions' global partnerships and international orientation allow it to provide intensive and successful support to small and medium-sized enterprises and, in particular, upper mid-market companies with a strong international focus in Germany and abroad.

The parent company NTT DATA Corporation supports NTT DATA Business Solutions AG's growth. Activities are concentrated on cooperation with NTT DATA in joint projects, tapping new markets and support for M&A activities. Moreover, NTT DATA Business Solutions works with its NTT DATA affiliates. NTT DATA Business Solutions uses the capital resources provided by the partnership with NTT DATA to grow its market share through targeted acquisitions.

RISK MANAGEMENT

In accordance with section 91(2) AktG the Management Board of NTT DATA Business Solutions AG has established a risk management system for the Group in order to identify risks early on. The risk management system is implemented on a Group-wide basis as one of the integral components of the business and decision-making processes. A permanent and systematic approach is derived based on a defined risk strategy. This procedure comprises the integrated planning process, which is being implemented both top-down and bottom-up, the monitoring and controlling of business processes and the IFRS-compliant consolidated financial statements. The defined standards, which are based on the requirements of the NTT DATA Group, are set out and published in Group-wide guidelines such as the Accounting and Account Assignment Manual, Compliance Management, the Risk Management Guideline, the Internal Audit Manual and the Information Security Guideline.

The requirements are regularly examined in close cooperation with NTT DATA and processes are continuously improved. This entails monthly management meetings at which the operating divisions report on business developments, risks and opportunities of their areas of responsibility, monthly organized sales meetings where new sales opportunities, orders on hand, customer and market developments are discussed and international business review meetings.

Above and beyond the operating processes described, the risk and opportunity management system is supplemented by committees in which Management Board and Supervisory Board members meet regularly.

The NTT DATA Corporation is also striving to establish a global and uniform audit and reporting system for all Group members with the aim of bundling and analyzing the information required for efficient risk and opportunity management as quickly as possible and making the findings available to all Group members in good time.

RISKS OF FUTURE BUSINESS DEVELOPMENT

THE PANDEMIC

In the past fiscal year as well, there were economic and therefore operating risks on account of the pandemic, the effects of which on the economy, and thus on the company's business performance as well, are still difficult to assess. While the cost-efficiency programs implemented made their contribution to profitability in the past fiscal year, it may only be partially possible to compensate for future slumps in revenue. There therefore remains the industry-wide risk that is estimated by the monthly management of incoming orders and orders on hand.

Depending on how the situation develops, the company's own employees or customers' employees could be affected, which could lead to delays in project implementation and thus to temporary

declines in revenue. All employees around the world are still being repeatedly and regularly informed about the risks and preventive measures. Digital communication media are being used to reduce personal contact with customers and within the company, while project activities are continuing in this manner, thereby reducing the risk of revenue losses. The possibility of customers in the industries affected defaulting on payments is being handled as described in the section on financial risks.

IT SECURITY

No matter how well planned and implemented, every IT system can have its vulnerabilities. If a hacker exploits a gap or vulnerability to penetrate the IT system, this would pose a threat to confidentiality, data integrity and availability at NDBS AG. For NDBS, attacks on protected targets mean attacks on real corporate assets, typically the interception or alteration of internal company information are possible, extending as far as sabotage, intelligence gathering or even extortion, as customer data are hosted at data centers. Every possible threat is a risk to NTT DATA Business Solutions AG. NDBS AG uses risk management to attempt to reduce the probability of occurrence of damage and its extent.

Multifaceted security systems, the constantly evolving firewalls and Okta authorization reduce the risk. Embedded in the continuous revision of the risk analysis and the assessment of the company's specific IT systems, corresponding protection targets are defined. IT security procedures are then chosen for the respective business processes at NTT DATA Business Solutions AG, which is made possible by the use of IT standards.

Corresponding IT security standards are selected and implemented in conjunction with IT security management. To this end, there are various standards in IT security management. Applying ISO/IEC 27001 or the Baseline IT Protection Standards, accepted rules are used to attempt to reduce the complexity of socio-technical systems for IT security management and to find a suitable level of information security.

BUSINESS ENVIRONMENT RISKS

SAP partnership

As NTT DATA Business Solutions is focused on SAP as a full-service IT provider for the traditional and upper midsize market, it is largely dependent on the continued market success of SAP's products. This dependence directly affects its financial position and performance. In addition to providing support, the SAP partner model also poses an economic risk for NTT DATA Business Solutions. As long as SAP continues to provide customers with high-performance products, NTT DATA Business Solutions can implement these products for its customers, thus reducing the economic risk for NTT DATA Business Solutions.

Human resources risks and opportunities

Qualified employees and managers who implement the SAP projects in numerous projects are the key factor in NTT DATA Business Solutions AG's success. Ensuring long-term employee retention while at the same time actively keeping pace with technological change is a challenge.

Personal online training that teaches the technological expertise currently required ensures timely, balanced and diversified employee training at a high level. An international management development program also fosters the skills of managers and project members.

Despite the measures described, the possibility that qualified employees will leave the company early or that an insufficient number of new employees can be found and successfully recruited cannot be ruled out.

Industry risks

Technical progress entails not just opportunities but risks as well. These risks affect NTT DATA Business Solutions' financial performance. The company focuses on the following risk areas:

a) Customer-oriented market risks

Market influences on customers, such as economic cycles, exchange rate changes, liquidity shortages or changes in customers' investment habits, possible company concentration, customer insolvency risk, etc.

b) Supplier-oriented market risks

Supplier services requested by NTT DATA Business Solutions, in particular those of external service providers, including service quality, etc.

These developments are monitored through the monthly analysis of incoming orders and orders on hand. Furthermore, a weekly cash cockpit and weekly meetings help to keep the risk of bad debts as low as possible. Despite intensive customer and supplier care, it cannot be fully ensured that all developments will be identified at an early stage or that measures will be initiated in a timely manner.

PERFORMANCE RISKS

Project risk

The biggest risk to NTT DATA Business Solutions AG lies in project risks and the resulting adverse effects on its financial performance. This risk is countered by the continuous revision of project methodology and the corresponding training of project managers. Project controlling ensures project transparency. Starting with monitoring by the project manager, the project is accompanied through to roll-out. NTT DATA Business Solutions actively works to reduce product risks by using qualified employees and early warning systems embedded in the system. This enables everyone involved to identify risks at an early stage and take appropriate countermeasures.

Risks in the Managed Services division

A risk in the Managed Services division lies in the contractually agreed high availability and reliability of data center services. Contractual and statutory provisions form the basis for the planning of internal resources and processes, while clearly defined responsibilities, interfaces and workflows ensure compliance with these requirements, which are monitored by Internal Audit on an ongoing basis. Each new customer is integrated into the new or changed technology and the process structure following a defined testing and acceptance procedure. The same applies to existing customers if they require or wish for changes. The anticipated risks and opportunities are thus carefully considered together.

The corresponding audits were successfully completed in fiscal 2021/2022, as in the preceding year. The services and processes were certified in accordance with ISO/IEC 20000 – 1:2011 and ISO/IEC 27001:2013. NTT DATA Business Solutions Global Managed Services GmbH's internal control system has also been successfully tested and audited in accordance with ISAE3402. These certifications are supplemented by the SAP Global Partner Hosting certificate. Comprehensive security measures – from building access restrictions through to the internal authorization concept for the responsible employees – and regular security audits with subsequent recertification are being and have been implemented in data center operations. The change in European data protection legislation will pose further challenges for processes and technical measures in data center operations. These will be adhered to and implemented accordingly.

There is a commercial risk in the other SLAs agreed with customers in MCS and AMS. However, these are reduced to a minimum by professional product management, intensive offer approval processes and state-of-the-art monitoring and de-escalation processes.

FINANCIAL RISKS**Liquidity risk**

NTT DATA Business Solutions' central Financial Management team monitors and controls global liquidity. The Management Board receives information on liquidity, including a cash forecast, on a weekly basis, these issues are discussed with the departments concerned in monthly calls and the development of key performance indicators is explained. Analysis mainly focuses on the Group-wide monitoring of cash funds, enabling measures to be initiated at short notice as required. Weekly transparency of receivables helps to ensure that payment reminders are issued in good time. A constant level of cash funds and credit facilities in Germany and abroad increases security and independence. Changes in the inflation rate are also under observation.

Interest rate fluctuations on the money and capital markets affect NTT DATA Business Solutions AG's net interest income only to a limited extent.

Price risk

Despite internationalization, NTT DATA Business Solutions' value-added process is performed almost entirely in the same currency or on a euro basis. Therefore, while currency risk exists, its effects on earnings are limited. NTT DATA Business Solutions monitors exchange rate risks on the basis of items in the statement of financial position. Exchange rate fluctuations affecting intragroup receivables and liabilities and the resulting risk are monitored and documented continuously.

Goodwill is tested for impairment each year using the DCF method. The average cost of capital is used to discount cashflows. Capital costs may change due to current developments in interest rate levels. Significant changes arising from goodwill impairment testing would have a substantial impact on earnings.

General management risk

NTT DATA Business Solutions examines its customers' risks of insolvency at each of its national subsidiaries. This applies to new and existing customers alike. Nevertheless, this risk cannot be ruled out entirely. Therefore, all receivables within the Group are monitored each month and, depending on the maturity profile, payment reminders are issued and ultimately bad debts are written off. This measure is supplemented by ongoing credit checks, which also include risk provisions in the form of specific valuation allowances.

OTHER RISKS

Risks due to armed conflict

As NTT DATA Business Solutions has an international base of operations, risks exist as a result of armed conflict. While the company has suspended its activities in Russia and Ukraine, this conflict is very much affecting the economic situation in all countries – especially those in the Northern and Eastern Europe region. The future extent is unforeseeable.

Political risk

As an international service provider, NTT DATA Business Solutions is also exposed to international political influences and their consequences. Political risk is therefore taken into account and weighed up in all investment decisions, especially for acquisitions.

General management risk

NTT DATA Business Solutions is also exposed to general management risk. The company continuously improves its management, controlling and steering systems and extends them at all levels with a view to preventing mistakes.

OVERALL RISK SITUATION

The Management Board does not consider there to be any individual risks that could endanger the continued existence of the NTT DATA Business Solutions Group at the date of preparation of this annual report or in the foreseeable future. Similarly, the Management Board does not consider the aggregate risk at the date of preparation of this annual report as endangering the continued existence of the NTT DATA Business Solutions Group.

RISK REPORTING IN CONNECTION WITH THE USE OF FINANCIAL INSTRUMENTS

The risks relating to financial instruments are discussed in detail in notes (30) and (33g) of the notes to the consolidated financial statements.

FORECAST

ECONOMIC FORECASTS FOR 2022/2023

The world economy recovered from the effects of the global COVID pandemic in the 2021 calendar year and gross domestic product increased by 6.1% as against the previous year.

For the current 2022 calendar year, the EU Commission is assuming slower growth for the global economy of just 3.6%. The reasons for this modest forecast include the humanitarian crisis in Eastern Europe as a result of the war in Ukraine and the global rise in commodity prices. Rising prices for food and energy are already causing higher inflation rates and will have a negative global impact.

The EU Commission assumes that the forecast growth in the individual countries and regions will vary considerably.

Growth of 4.3% is anticipated for the euro area. The forecast for Germany is 4.1%, slightly below average for the euro area. Growth rates of 5.5% are expected for Spain, while more moderate growth of just 4.2% is projected for France. The estimate for the UK is 4.7%.

The growth forecast is 3.7% for the US, 3.9% for Canada and 0.8% for Brazil.

The EU Commission is forecasting much stronger growth momentum for India (+8.2%). Growth of 4.4% is expected in China.

OUTLOOK FOR THE SOFTWARE AND IT SERVICES MARKET

Gartner is forecasting that spending on the global IT market will increase by 5.1% in the current calendar year of 2022. This is significantly slower than the extremely strong growth of previous year, when spending rose by 9.0%, but still in line with pre-pandemic levels.

In USD billion	2020		2021		2022	
	Spending	Growth	Spending	Growth	Spending	Growth
Data center systems	178,836	2.5%	216,337	21.0%	226,475	4.7%
Enterprise software	529,028	9.1%	604,946	14.4%	671,732	11.0%
Devices	696,990	-1.5%	787,417	13.0%	813,699	3.3%
IT services	1,071,281	1.7%	1,186,103	10.7%	1,279,737	7.9%
Communication services	1,396,334	-1.5%	1,444,324	3.4%	1,462,712	1.3%
Overall IT market	3,872,470	0.9%	4,239,127	9.5%	4,454,354	5.1%

Source: Gartner (January 2022 and October 2021)

The software and IT services market, the sub-market relevant to NTT DATA Business Solutions, grew far faster than the IT market as a whole in 2021 (14.4% vs. 10.7%). Gartner is forecasting growth rates of 11.0% and 7.9% for the 2022 calendar year, indicating strong growth for these two areas once again.

According to Gartner, the reason for the anticipated strong increase in business software in particular is the stronger demand for cloud-based solutions that allow a greater degree of flexibility and agility.

After the market for cloud solutions was bigger than that for non-cloud-based solutions for the first time in the 2020 calendar year as a result of the pandemic, the cloud market is expected to be twice the size of the non-cloud market by 2025.

Other key areas in the coming years will be in digital transformation, data warehouse and data analytics.

FORECAST BUSINESS PERFORMANCE OF NTT DATA BUSINESS SOLUTIONS

The high level of orders on hand as of March 31, 2022, totaling BEUR 1.405 as against BEUR 1.262 in the previous year (+11.3%), gives NTT DATA Business Solutions AG a solid starting position for fiscal 2022/2023. Unlike in previous years, the Management Board is assuming higher daily rates in consulting business, not least as a result of global inflation trends and the associated pressure of staff costs as a result of salary increases.

In fiscal 2022/2023 as well, NTT DATA Business Solutions AG will continue to benefit from rising demand for cloud-based solutions and digital transformation. Market opportunities in the enterprise software and IT services are set to remain very strong, with NTT DATA Business Solutions benefiting from SAP's attractive product portfolio in these areas. Overall, SAP expects the software market relevant to SAP to grow by 11.5% on average from 2021 to 2025. The forecast for 2022 is currently +10.6%. The growth in database management is expected to be particularly rapid (29% in 2022, 26% from 2021 to 2025). NTT DATA Business Solutions anticipates particular growth and earnings potential in the development and sale of proprietary products. In particular, this includes the Gepardo software of the FH Group in Brazil. NTT DATA Business Solutions is increasingly also benefiting from its work with other affiliates of the NTT/NTT DATA Group. The Management Board expects these cooperations to be further intensified in all regions.

In particular, business with customers in the BEUR 1 to BEUR 10 revenue bracket is becoming increasingly important to NTT DATA Business Solutions AG. NTT DATA Business Solutions AG intends to provide these customers with an attractive range of consulting services relating to S/4HANA transformation and innovative solutions from the wider SAP portfolio. In particular, the S/4HANA transformation of the existing customer base means good opportunities for the Group in fiscal 2022/2023 and beyond.

Given NTT DATA Business Solutions AG's strong market position and attractive product portfolio, the Management Board is assuming that revenue will increase to between BEUR 1.24 and BEUR 1.30 in fiscal 2022/2023. With earnings continuing to rise, an EBITA margin of around 6% is anticipated. The company is aiming for one or two small to mid-sized acquisitions in the coming year as well.

Bielefeld, July 15, 2022

NTT DATA Business Solutions AG

Norbert Rotter
CEO

Jürgen Pürzer
CFO

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* This publication does not take the form required by law.

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CONSOLIDATED INCOME STATEMENT

IFRS

KEUR	Apr 1, 2021 – Mar 31, 2022	Apr 1, 2020 – Mar 31, 2021
Revenues	1,241,294	1,071,654
Cost of sales	-975,789	-866,836
Gross profit	265,505	204,818
Marketing and distribution expenses	-99,088	-94,457
Administrative expenses	-113,045	-90,091
Other operating income	8,155	7,177
Other operating expenses	-7,956	-5,752
Impairment of trade receivables	-5,247	-4,634
Total operating expenses	-217,181	-187,757
Operating earnings	48,324	17,061
Investment income	2	-61
Measurement of derivatives and exercise of options	817	-5,351
Exchange rate differences from financing activities	682	-7
Financial income	940	1,326
Finance costs	-6,896	-5,438
Net finance costs	-4,455	-9,531
Earnings before tax	43,869	7,530
Tax expenses	-16,877	-5,401
Consolidated net profit	26,992	2,129
of which attributable to the shareholders of NTT DATA Business Solutions AG	19,215	-3,760
of which attributable to non-controlling interests	7,777	5,889
Earnings per share (EUR) (basic/diluted)	0.64	-0.13
Number of shares on the basis of which earnings per share were calculated:		
– basic/diluted	30,014,838	30,014,838

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

IFRS

KEUR	Apr 1, 2021 – Mar 31, 2022	Apr 1, 2020 – Mar 31, 2021
Consolidated net profit	26,992	2,129
Actuarial losses IAS 19 *	4,411	1,699
Currency translation differences **	15,542	-8,676
Tax effects	-1,527	-105
Other comprehensive income	18,426	-7,082
Total comprehensive income	45,418	-4,953
of which attributable to the shareholders of NTT DATA Business Solutions AG	33,796	-8,034
of which attributable to non-controlling interests	11,622	3,081

* Item not to be reclassified to profit or loss.

** Item that can be reclassified to profit or loss.

*** No reclassification to the income statement in the current fiscal year.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

IFRS

ASSETS KEUR	Mar 31, 2022	Mar 31, 2021
Non-current assets		
Goodwill	245,235	240,659
Intangible assets	72,000	63,863
Property, plant and equipment	157,928	175,167
Other financial assets	10,517	5,462
Trade receivables	3,654	1,775
Income tax receivables	42	122
Prepaid expenses	1,323	0
Deferred tax assets	8,533	6,605
	499,232	493,653
Current assets		
Inventories	2,028	368
Trade receivables	203,936	184,667
Contract assets	48,213	51,184
Income tax receivables	9,429	10,505
Other financial assets	12,226	4,931
Other non-financial assets	5,186	3,805
Assets held for sale	19,281	0
Cash and cash equivalents	128,886	111,583
Prepaid expenses	43,057	44,769
	472,242	411,812
	971,474	905,465

EQUITY AND LIABILITIES KEUR	Mar 31, 2022	Mar 31, 2021
Equity		
Share capital	30,015	30,015
Capital reserves	194,281	181,153
Net accumulated profit	143,974	124,759
Other comprehensive income	-107,506	-118,125
	260,764	217,802
Non-controlling interests	61,297	69,772
	322,061	287,574
Non-current liabilities		
Financial liabilities	203,448	215,939
Deferred tax liabilities	17,016	14,450
Other non-current provisions	5,746	898
Pension provisions	8,884	10,250
Government grants	3,265	3,693
Other non-financial liabilities	2,401	2,258
	240,760	247,488
Current liabilities		
Trade payables	79,355	69,300
Contract liabilities	88,007	78,398
Financial liabilities	55,376	90,819
Other current provisions	33,140	23,648
Liabilities associated with assets held for sale	4,200	0
Tax liabilities	6,280	4,096
Income tax liabilities	8,135	2,975
Other non-financial liabilities	134,160	101,167
	408,653	370,403
	971,474	905,465

CONSOLIDATED STATEMENT OF CASHFLOWS

IFRS

KEUR	Apr 1, 2021 – Mar 31, 2022	Apr 1, 2020 – Mar 31, 2021
Consolidated net profit	26,992	2,129
Amortization of intangible assets and depreciation of property, plant and equipment	59,596	58,450
Other non-cash expenses and income	-1,771	-8,739
Net finance costs	4,455	9,531
Tax expenses	16,877	5,401
	106,149	66,772
Change in inventories	-1,661	475
Change in trade receivables	-19,261	33,151
Change in other non-current assets	1,228	-2,308
Change in other current assets	-5,704	1,934
Change in prepaid expenses	7,270	7,642
Change in trade payables	13,385	-3,482
Change in provisions for pensions	-1,269	-947
Change in other liabilities and provisions	55,625	15,978
	155,762	119,215
Interest received	940	1,326
Interest paid	-6,896	-5,438
Taxes paid	-12,893	-13,005
Cashflows from operating activities	136,913	102,098
Capital expenditure for intangible assets and property, plant and equipment	-25,955	-36,199
Cash received from the disposal of property, plant and equipment and intangible assets	719	0
Subsequent purchase price payments for acquisitions	-4,073	-23,936
Payments for acquisitions (less cash and cash equivalents acquired)	-1,170	-1,635
Cashflows from investing activities	-30,479	-61,770
Dividends paid to non-controlling interests	-4,916	-6,775
Capital increase	13,128	39,753
Cash received from Restricted Cash	-9,585	0
Payment for the acquisition of non-controlling interests	-13,991	-15,237
Borrowing of financial liabilities	2,226	176,014
Repayment of financial liabilities	-73,263	-214,690
Cashflows from financing activities	-86,401	-20,935
Increase in cash funds	20,033	19,393
Effects from exchange rate differences	973	0
Cash and cash equivalents as of January	111,583	92,190
Cash and cash equivalents included in assets held for sale	-3,703	0
Cash and cash equivalents as of December 31	128,886	111,583

Cash and cash equivalents are discussed in note (17).

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

IFRS

KEUR	Number of shares	Share capital	Capital reserves	Net accumulated profit	Other comprehensive income				Equity attributable to the shareholders of the parent company	Non-controlling interests	Consolidated equity
					Foreign exchange differences	Other equity IAS 19	Other equity	Other comprehensive income			
Apr 1, 2020	30,014,838	30,015	141,400	128,519	-23,717	-6,864	-53,800	-84,381	215,553	51,484	267,037
Consolidated net profit				-3,760					-3,760	5,889	2,129
Actuarial losses IAS 19						1,594		1,594	1,594		1,594
Foreign exchange differences					-5,868			-5,868	-5,868	-2,808	-8,676
Total comprehensive income				-3,760	-5,868	1,594	0	-4,274	-8,034	3,081	-4,953
Dividend payments										-6,775	-6,775
Capital increase			39,753						39,753		39,753
Acquisition of a subsidiary with non-controlling interests							-31,592	-31,592	-31,592	24,104	-7,488
Exercise of options (without change of control)							2,122	2,122	2,122	-2,122	0
Shareholder transactions			39,753				-29,470	-29,470	10,283	15,207	25,490
March 31, 2021	30,014,838	30,015	181,153	124,759	-29,585	-5,270	-83,270	-118,125	217,802	69,772	287,574
Consolidated net profit				19,215					19,215	7,777	26,992
Actuarial losses IAS 19						2,884		2,884	2,884		2,884
Foreign exchange differences					11,697			11,697	11,697	3,845	15,542
Total comprehensive income				19,215	11,697	2,884	0	14,581	33,796	11,622	45,418
Dividend payments										-4,916	-4,916
Capital increase			13,128						13,128		13,128
Acquisition of a subsidiary with non-controlling interests							-19,772	-19,772	-19,772	629	-19,143
Exercise of options (without change of control)							15,810	15,810	15,810	-15,810	0
Shareholder transactions			13,128				-3,962	-3,962	9,166	-20,097	-10,931
Mar 31, 2022	30,014,838	30,015	194,281	143,974	-17,888	-2,386	-87,232	-107,506	260,764	61,297	322,061

AUDIT RESULT

The statutory auditor has issued the full consolidated financial statements and Group management report with an unqualified audit opinion.

The full consolidated financial statements and Group management report have been submitted to the operator of the Bundesanzeiger (Federal Gazette).

SERVICE & PUBLICATION DETAILS

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