NTT DATA

Embracing new Technologies

To grow, optimize, and improve as an organization

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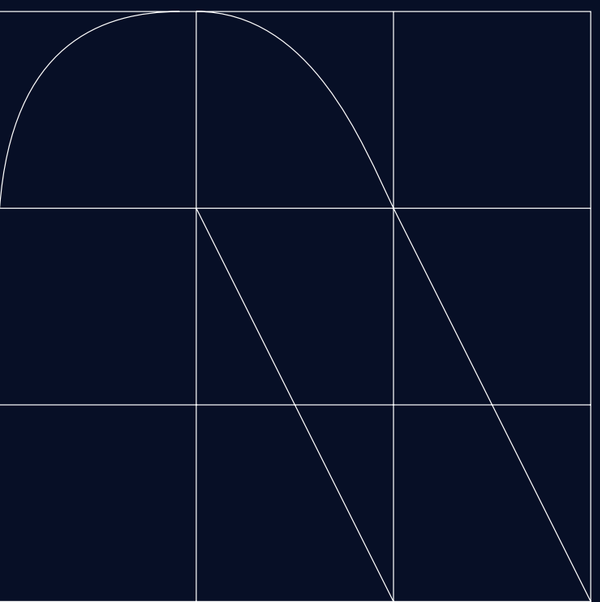

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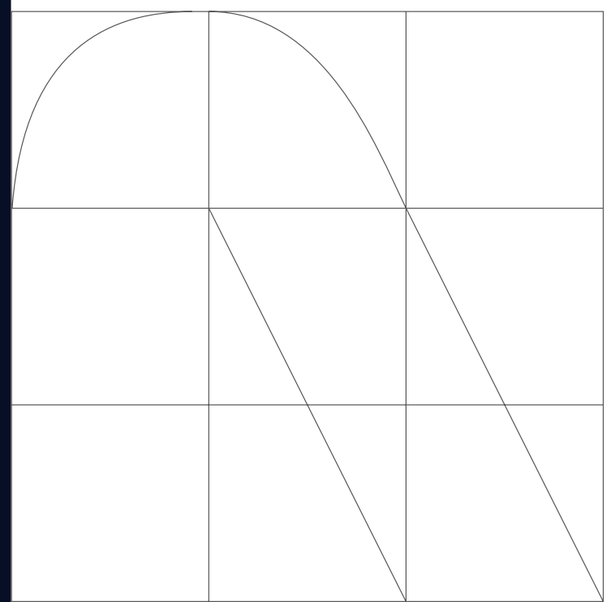
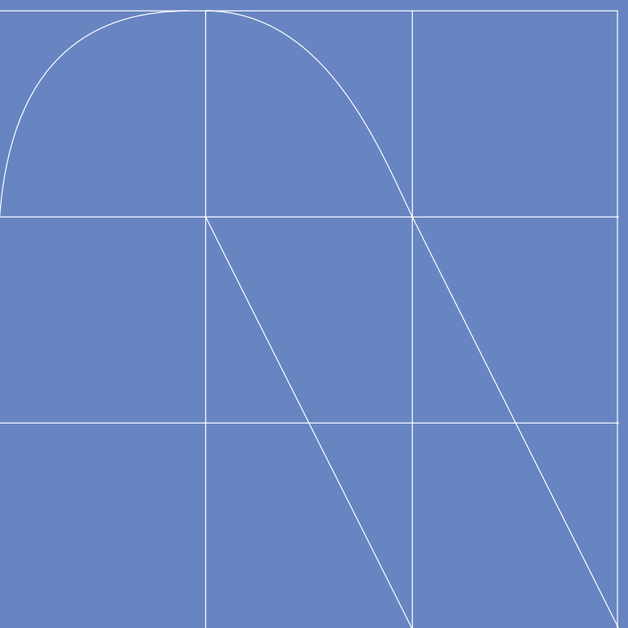


Embracing new technologies to grow, optimize, and improve as an organization

Technologies are evolving at lightning speed and can be decisive for the future of companies and the way they conduct their business. Therefore, innovations have not stood still in the IT sector. Emerging technologies, such as Artificial Intelligence (AI), Machine Learning (ML), XR (consisting of VR and AR), low code, Internet of Things (IoT), blockchain and Intelligent Automation, are playing an increasingly prominent role in organizations.

"It is essential for organizations to actively explore the opportunities that emerging technologies offer for their business. Our research makes it clear that organizations have already made good progress in this area: the interest of IT professionals has certainly risen. Yet there is still plenty to gain. For example, organizations will have to invest time and money to improve knowledge and skills of emerging technologies. This research report provides a good insight into the developments in the field of emerging technologies. Because the future of these technologies starts today!"

Daniel Fuster
CEO of NTT DATA Netherlands



As the above list shows, there is plenty to choose from when it comes to emerging technologies. Each technology in turn enables its own way of innovating. They can offer organizations opportunities to grow, optimize and improve. These technologies should therefore form an important part of a business strategy. But many companies are still hesitant and not entirely sure, and wondering; are these changes better? And how do you determine which technology can be valuable for your organization?

To gain more insight into what companies are hesitating about, we asked 500 IT professionals how they view the emerging technologies. For example, to what extent do they already use AI and what do they use it for? What is still holding organizations back from implementing emerging technologies and what steps still need to be taken to take full advantage of this?

The results of the research are bundled in this report. In the first part, we look at the current state of affairs, in particular which technologies do organizations find important and which do they use. In the second part, we take a closer look at the rationale behind why organizations are adopting or not adopting emerging technologies. In doing so, we look at the obstacles IT professionals experience when implementing new technologies. In the third part, we turn our gaze to the future and look at the developments that IT professionals expect these technologies to undergo and the way they will use these innovations in the future.

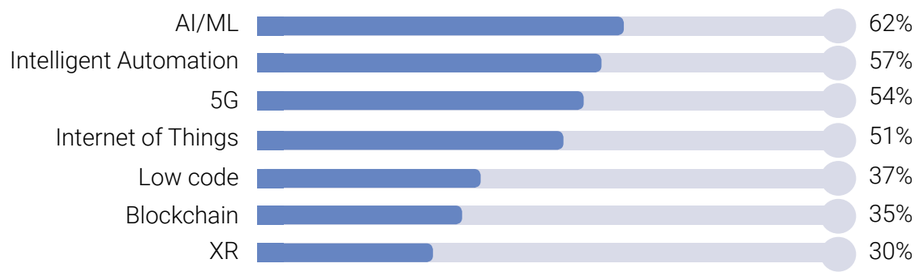
CHAPTER 1

Current State of Affairs

THE VALUE OF EMERGING TECHNOLOGIES

Before implementing technological innovations, it is good to investigate what it can bring to the organization. In addition, it is important that you do not just go along with the hype, but look at the challenges in different domains in your organization for which these technologies can be a solution.

IT professionals find the use of AI and ML (62%), Intelligent Automation (57%) and 5G (54%) especially important in business terms. For example, organizations can use AI and ML to fend off cyber-attacks, relieve workload and automate processes. They can also be crucial tools in the data management process of organizations. Intelligent Automation, in turn, is the key to qualitative insight, overview and context of available data and processes. This leads to efficiency, quality improvement and lower costs. IT professionals therefore experience AI and ML (20%) as the most positive from a business perspective. This is followed by Intelligent Automation (16%) and IoT (16%).



Importance of emerging technologies

THE USE OF NEW TECHNOLOGIES

After organizations have determined that emerging technologies can be of value to them, it is crucial that they actually use them. Several organizations have recently started implementing and developing these technologies.

The emerging technology that organizations are already using the most is 5G (47%). A possible reason for this is hybrid working, for which a fast connection is essential for collaboration. This technology is closely followed by IoT (44%), Intelligent Automation, and AI and ML (both 42%). One in five organizations (18%) are not currently using AI and ML, but they are definitely interested in doing so in the future. The research shows that there are also less popular technologies. For example, blockchain is not yet used by a third of the organizations (33%) and do not plan to do so. This may be because blockchain technology is often associated with unreliable cryptocurrencies.

Forty to fifty percent of organizations using one or more emerging technologies are in an advanced stage. This means that these organizations already have some experience with these innovations, but do not yet see themselves as experts. Only 15 to 25 percent consider themselves experts.

Minimal Budget

Organizations will have to invest time and money to implement these technologies. So, they need to make room for this in their IT budget. Yet two out of five organizations (40%) do not yet spend much of their IT budget on new technologies: less than ten percent. If money is then spent, it most often goes to 5G (16%), AI and ML (14%), IoT (14%) and Intelligent Automation (13%). The least amount is spent on low code (8%), XR and blockchain (6% each).

Only 9% of organizations spend more than 20% of their IT budget on AI, while IT professionals see it as the most promising.

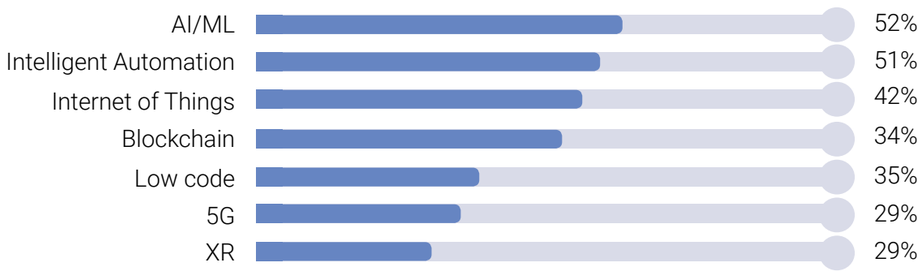
KNOWLEDGE LEVEL AND SKILLS OF EMERGING TECHNOLOGIES

To successfully implement technological innovations, it is crucial that employees have the right skills and knowledge. After all, organizations must prepare themselves well for the arrival and development of these technologies. But staying on top of new technologies — not to mention understanding their complexities — can be a daunting task for organizations.

Two out of five IT professionals (41%) therefore struggle to keep up with all the developments surrounding emerging technologies. In addition, a third (31%) often find these innovations difficult to understand. New technologies and their practical implications are not always easy for IT professionals to imagine, in particular low code (23%) and blockchain (22%). This may be because IT professionals cannot properly assess the added value of low code and blockchain for their organization due to a lack of knowledge (21% and 19% respectively). Still, half (51%) feel the pressure to go along with the sector and thus implement new technologies.

Organizational knowledge

For IT professionals, it is important that the entire organization has knowledge about AI and ML (52%), Intelligent Automation (51%) and IoT (42%).



Importance of organizational knowledge

In many organizations this is currently not the case and there is a need to improve skills and knowledge of new technologies. This is crucial for the implementation of these innovations. A good way to educate employees about emerging technologies is through crash courses.

AI, ML and IoT can be used in many domains in the government sector, such as health, safety, city and traffic management.

Government

In addition to the fact that organizations recognize that new technologies are valuable to their business operations, IT professionals also believe that these technologies can be of great value to the government. In order to benefit from the advantages of these technologies, the government must be better informed of the most recent developments.

Especially in the areas of AI and ML (71%), IoT (65%) and blockchain (63%).

For example, AI can improve citizens' experience with government digital services and make it more personal. Think, for example, of chatbots to answer citizens' questions. In addition, AI and ML can increase service efficiency by automating standard procedures. IoT in turn offers a large number of possibilities for the government, such as smart parking meters, smart electrical boxes, and streetlamps.

A successful implementation of a digital innovation is not only about the technology, but rather about the people and the change in attitude and behavior in order to take full advantage of all opportunities.

Conclusion

It goes without saying that new technologies are arousing the interest of IT professionals. They find the use of AI and ML, Intelligent Automation and 5G particularly important. These innovations are therefore already being used by organizations, but at the same time it is still a thing of the future for many organizations. The skills and knowledge to implement these technologies are there, but keeping knowledge up-to-date still requires some improvement. Furthermore, organizations only have a minimal budget available to implement the technologies. Therefore, there is still plenty of room for organizations to get to know and use new technologies and thus take full advantage of them.

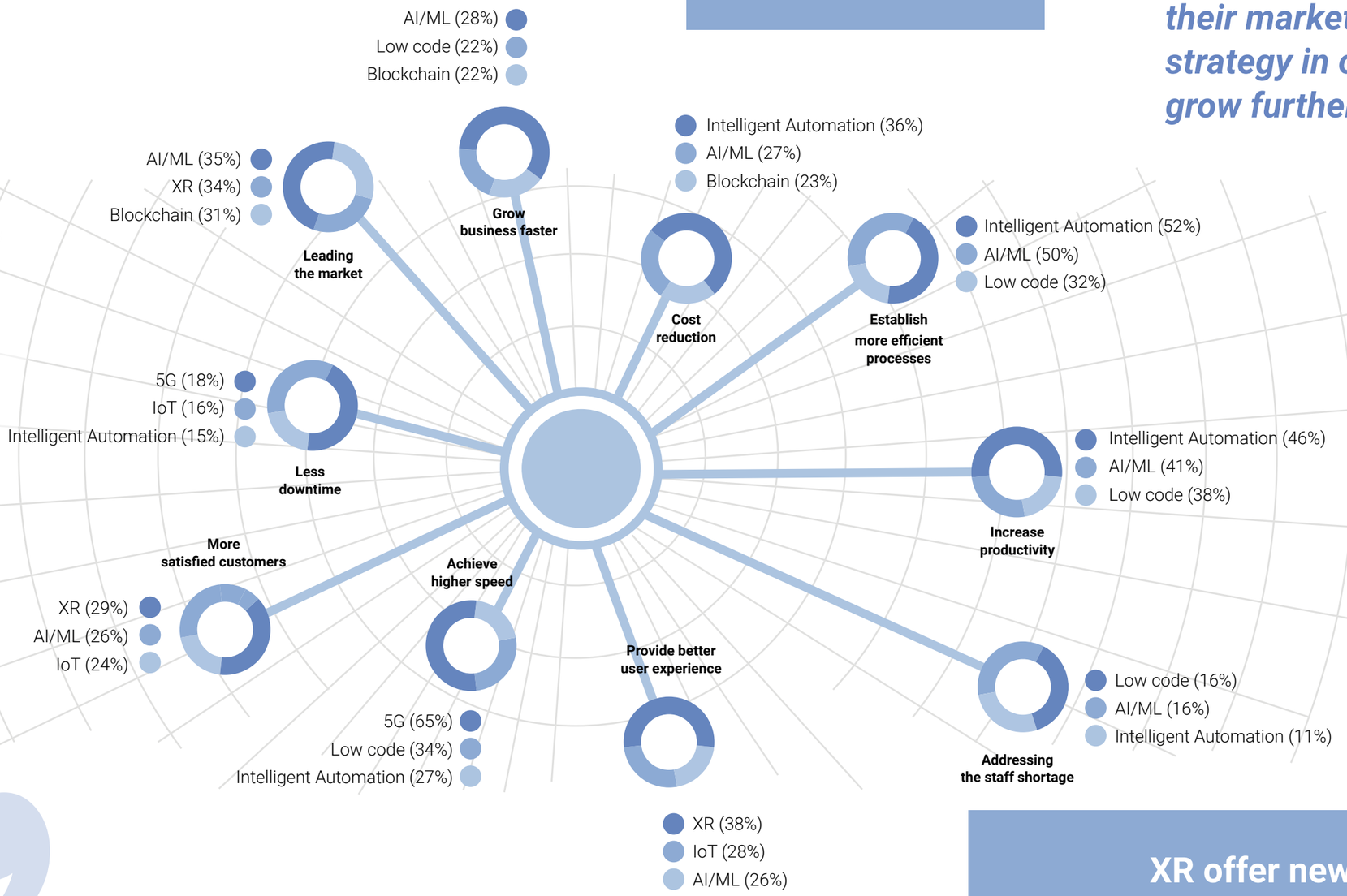
CHAPTER 2

Drivers for or against new technologies

The reasons for investing time and money in a particular innovation can differ per organization. After all, organizations have different goals for which they want to implement a technology. This can be an internal goal to work more efficiently. But this can also be externally focused, for example to have a head start on the competition. Here is an indication of which technologies organizations use most often for each goal.

Low code enables employees across the organization to support their work with analytics applications.

AI-powered analytics can give organizations greater insight into their customers' behaviour. With this information they can, for example, improve their marketing strategy in order to grow further



Organizations can use Intelligent Automation to perform time-consuming operations more efficiently. The result: saving time and less prone to errors.

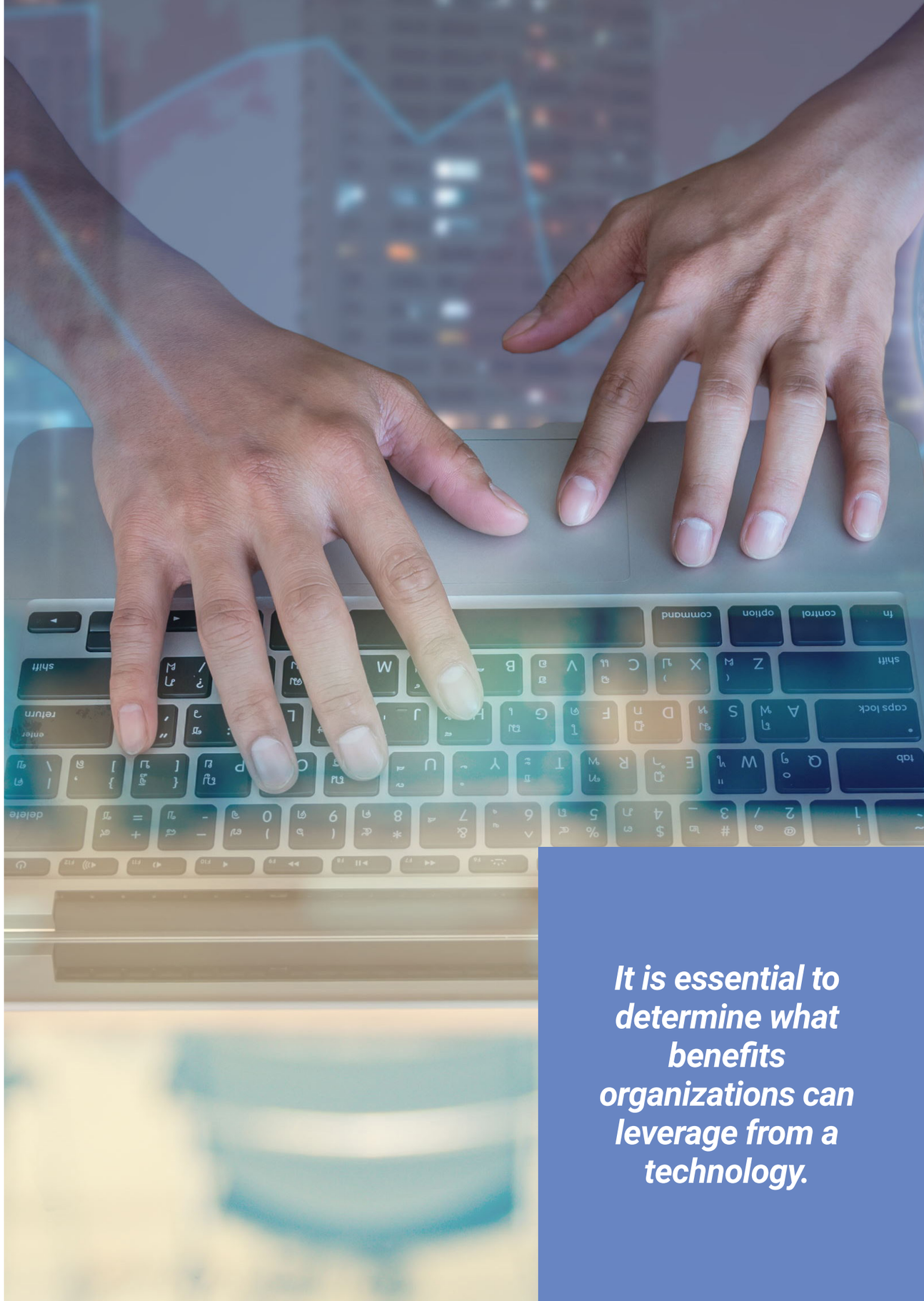
XR offer new ways to interact with customers.

Concerns about new technologies

Despite the fact that there are valid reasons to implement new technologies, companies sometimes choose not to invest in them. Why? Organizations have several reasons for this. The main reason is that they are not interested and that it cannot help them further with their services. When we look at the technology level, this is cited as the main reason for almost all technologies, except AI and ML. With this technology, 28 percent of IT professionals indicate that they have not yet implemented them due to a lack of knowledge. In addition, AI and ML frighten the IT professional the most (29%). The lack of knowledge may be the basis of the fear surrounding AI and ML. When something is unknown, it often evokes a feeling of resistance.

Conclusion

Organizations give different reasons why they do or do not use certain technologies. In many cases, technologies are used to work more efficiently or because it provides a competitive advantage. In other times, organizations choose not to implement these innovations, often because organizations are not interested or because it cannot help their services. Ultimately, it is essential to determine what benefits organizations can derive from a technology.



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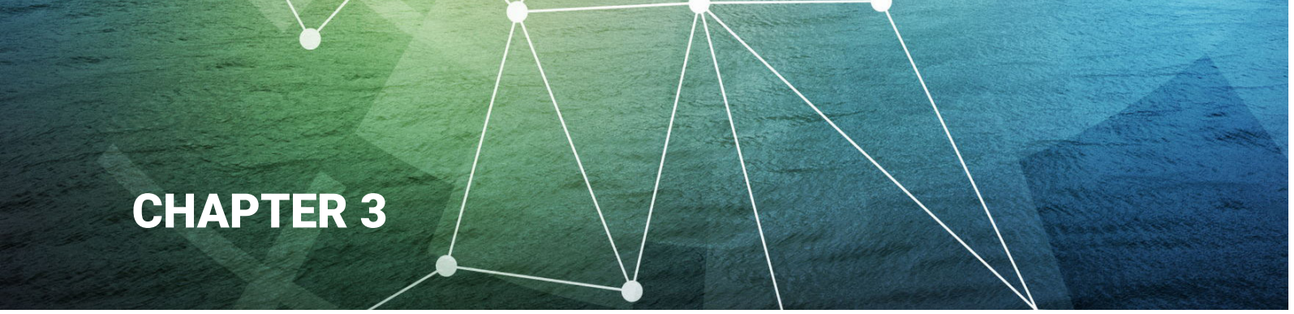


CHAPTER 3

The Future of New Technologies

The future lies in emerging technologies. Although not all organizations are convinced of this yet, there is a clear interest growing among IT professionals. Organizations are therefore increasingly investigating the possibilities of applying these innovations in their business operations. And these new technologies will continue to be developed in the coming years. IT professionals therefore look forward to the future of these innovations with great interest.

Positive expectation

IT professionals have high expectations of certain new technologies. For example, they see IoT (25%) and 5G (18%) as the most promising for their private lives.

Today, smart devices using IoT technology are already visible in every part of our daily lives: a smart refrigerator, smart parking meter and a Smart Home Security system. These kinds of useful tools continue to develop and will make daily lives easier. Consider, for example, the future of a safe self-driving car.

On the business front, IT professionals find AI and ML (30%) and Intelligent Automation (18%) the most promising. This is because these technologies can be applied in all sectors and in many different fields. They provide convenience, accessibility, automation, and efficiency. All of which in turn leads to increased productivity and improved user experience.

In addition, two in five IT professionals (37%) believe that AI and ML are the biggest contributors to a new era in the IT sector. For example, more than a third (35%) think that AI and ML will cause jobs in IT to disappear. Intelligent Automation (19%) and low code (8%) can also lead to this, according to some of the respondents. At the same time, IT professionals see Intelligent Automation (27%) and AI and ML (20%) as the best technologies to better deal with staff shortages. In addition, 38 percent expect AI and ML to change our lives the most.

> ***New applications such as AI and ML can enrich both business and society.***

Less positive outlook

There are also technologies that IT professionals can imagine seeing less in the future. For their private lives, they find low code (25%) and blockchain (20%) the least promising. On a business level, these are XR (22%) and blockchain (16%). This may be because XR and blockchain technology are expensive investments for organizations. Moreover, the applications of blockchain technology are not easy to change and codes have to be rewritten, which is time consuming and expensive. Seventeen percent expect 5G to disappear the fastest of the new technologies. This is due to the many innovations in network systems, with 6G to appear in the near future.

The implementation of new technologies in organizations will continue to grow in the coming period. More than a third of IT professionals (36%) believe AI and ML will be the most important in the next decade. It is therefore expected that these technologies will be used the most in ten years' time. 29 percent also think that their organization will spend the most money on these technologies in ten years' time.

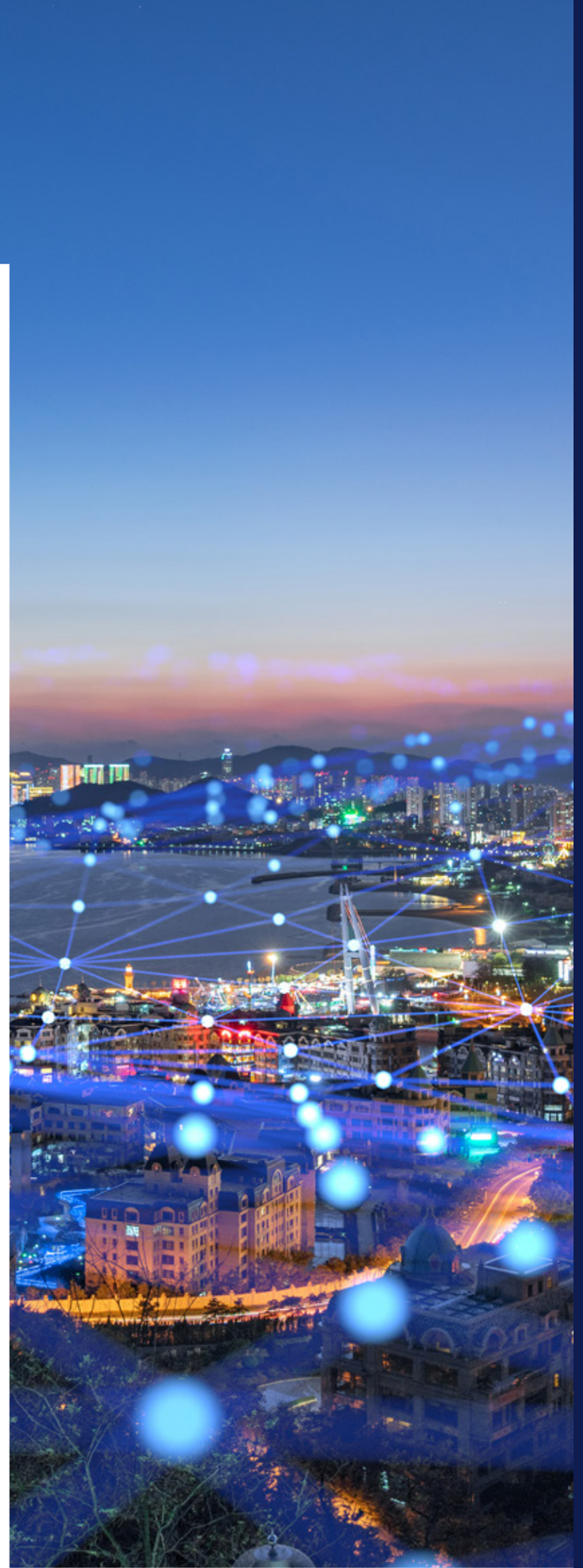
Technologies add value

The arrival of emerging technologies in business life is inevitable. Some organizations are not (yet) interested, because they do not see how it can help their services further. But on the other hand, organizations also recognize that it can help them set up more efficient processes, grow their business faster or stay ahead of the market. Emerging technologies offer opportunities, for example in these times with a tight labour market. In addition, it offers opportunities in current jobs, because simple tasks can be automated, and IT professionals have the time to focus on tasks where they can make a difference.

When we zoom in on the technologies, we see that IT professionals consider the use of AI and ML, Intelligent Automation and 5G the most important in the business field. Organizations also use this the most and label these technologies as the most positive. The IT professional also sees that these technologies offer the most opportunities to grow, optimize and improve as an organization. It is striking that it is precisely AI and ML, Intelligent Automation and 5G that frighten IT professionals the most.

It is often still difficult for organizations to keep all knowledge and skills related to emerging technologies at the right level. That is why it is usually a step too far to actually implement an innovation. Especially in the areas of AI and ML, Intelligent Automation and IoT, IT professionals believe that their organization needs to gain more knowledge.

Many organizations are still in the early stages of implementing new technologies. But there are still plenty of opportunities for organizations to expand this further. It is therefore crucial that organizations look into this more and determine which of the technologies can be of value to their company. After all, new technologies can open many doors.



About the study

NTT DATA is at the forefront of new technologies. That is why the company is always curious about the state of the market and the latest developments. In this survey, NTT DATA looked at how IT professionals view the most important technological developments of the moment: XR, 5G, AI, ML, low code, IoT, blockchain and Intelligent Automation. To what extent are these innovations already being used in the business world?

This survey was carried out on behalf of NTT DATA by market research agency Panelwizard among 503 Dutch people (18+) in paid employment, who can describe their current position as an IT specialist, IT manager or IT specialist. They work in financial institutions, wholesale and retail trade, industry, information and communication and transport.

About NTT DATA

NTT DATA, part of the NTT Group, is an innovative global IT and business services company headquartered in Tokyo. The company assists clients in their transformation process through consulting, industry solutions, business process services, digital and IT modernization and managed services. NTT DATA enables them, but also society, to face the digital future with confidence. The company demonstrates its commitment to the long-term success of its customers by combining global reach with local focus, working with them in more than 50 countries around the world.

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