Digitalisation Report #4

MISSION POSSIBLE

AI as an enabler for
Austria's regions

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AI as an enabler for Austria's regions

Strengthening digital technologies throughout the country

“We strengthen digital skills where people are at home.”

Digitisation is a great opportunity for society and the economy. It is more important than ever to have an innovative administration as a driving force, breaking new ground in terms of efficiency and citizen and business friendliness. The new Digitalisation Report shows clearly that digital transformation in Austria is being strategically implemented throughout the country – for the benefit of citizens, businesses and the administration itself.

As State Secretary, I am particularly interested in strengthening the digital skills base across the country. Young or old, city or countryside: for everyone to benefit from citizen-friendly applications and solutions, digital skills make all the difference. Getting digitisation right saves time and money for everyone – and opens up new opportunities for participation and career success. No one should be excluded.

With the implementation of the “Digital Competence Campaign” in Austria, we have mobilised 30 million euros from the federal budget and are offering 4,500 free workshops and other educational activities across Austria. In this way, we strengthen digital skills where people are at home – and meet them where they are with their needs and concerns.

In addition to the breadth of digital skills, we also need to go into the technical depth. It is vital for the success of our companies, our economy and our location that we inspire young people to pursue a career in IT. Knowledge of digital technologies, and in particular artificial intelligence, is more important than ever, so that we are not afraid of the future, but can proactively embrace it together.

Claudia Plakolm
State Secretary for Digitisation,
Youth and Civilian Service

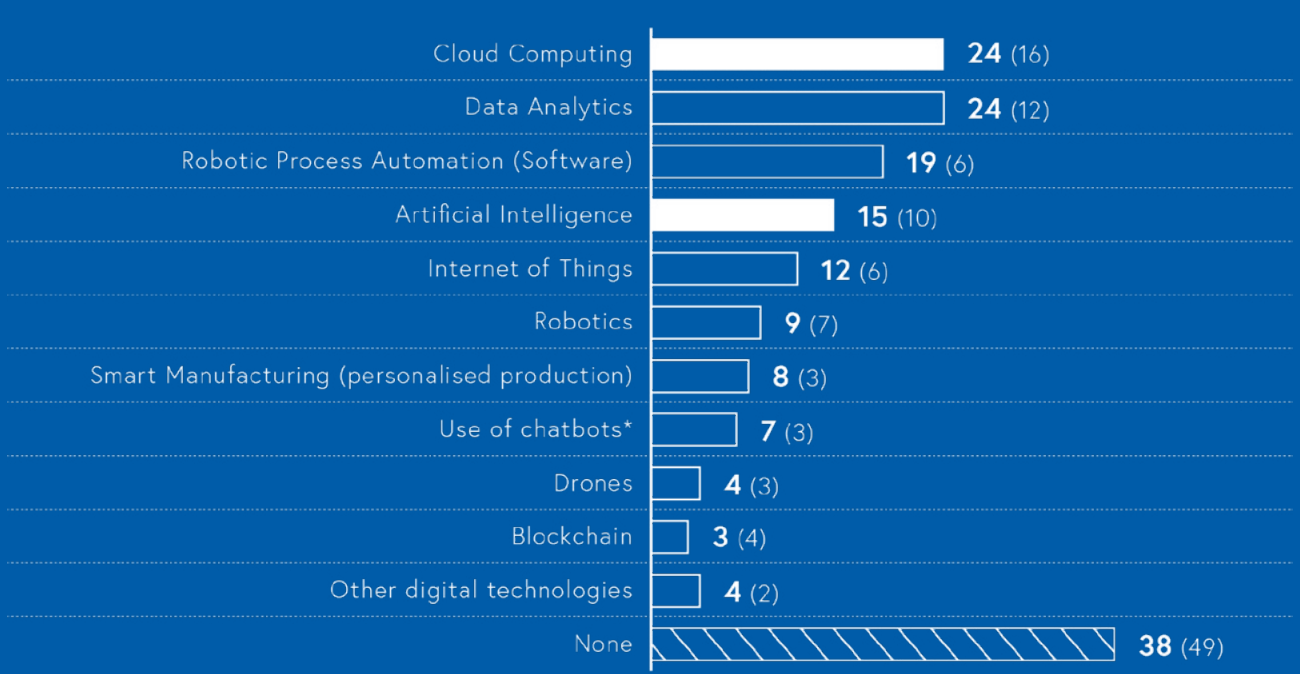
Contents

AI mindset in Austria

Companies and employees in Austria are increasingly focussing on artificial intelligence (AI). Surveys reveal the prevailing experiences and attitudes towards digitisation and AI in 2023.

24% *of SMEs plan to invest in cloud computing and data analytics, according to the EY SME Barometer 2023.*

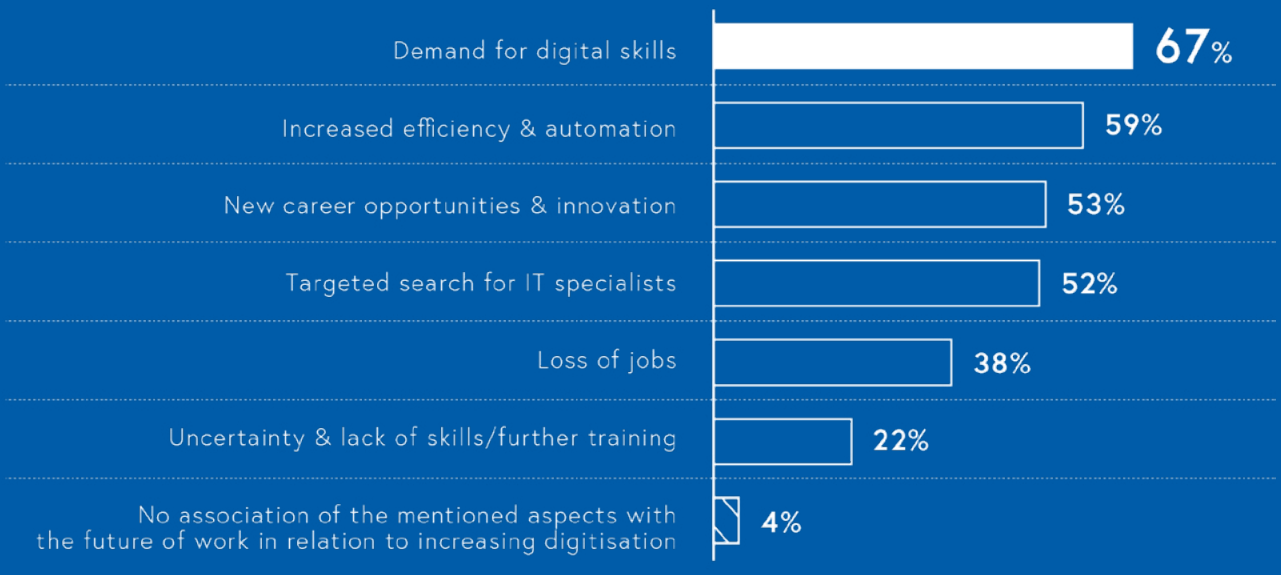
15% *have plans to invest in artificial intelligence.*



Source: EY: Digital transformation in Austrian SMEs in 2023 | Figures in per cent; previous year's figures in brackets
*Automated communication based on artificial intelligence, e.g. in e-commerce, customer service

67% *of employees associate digitisation primarily with the need for digital skills. Digital skills are becoming more and more important in the world of work.*

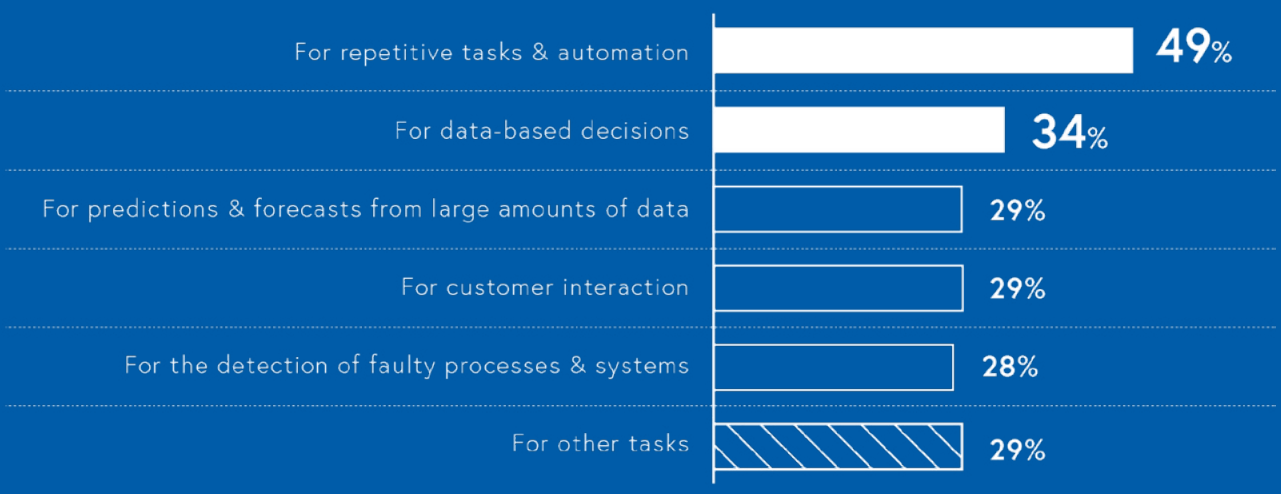
Associations with the future of work in relation to increasing digitisation



Source: Deloitte, Digitisation of the workplace 2023

16% *of employees surveyed in a Deloitte study report that AI is used at least occasionally in their organisation. AI is mainly used for repetitive tasks and automation (49%), but also for data-driven decisions (34%).*

Use of AI for the following tasks



Source: Deloitte, Digitisation of the workplace 2023

2023 – An important year for our digital future

“Austria has created the necessary structures for the sustainable development of the AI sector.”

With the launch of ChatGPT in 2022, the general public learned about the potential of (generative) artificial intelligence. Thanks to the good coordination at the CDO level in 2023, Austria was also able to carry out important preparatory work for the targeted improvement of the digitisation policy framework conditions for the location, especially in the area of artificial intelligence.

We were actively involved in the work on the final draft of the AI Act – the world’s first legal framework for AI. The AI Act provides for a national body to coordinate and monitor the new rules. For this purpose, the AI Service Centre, which is anchored in the Austrian Regulatory Authority for Broadcasting and Telecommunications (Rundfunk und Telekom Regulierungs-GmbH, RTR), was established in Austria in 2023. Key topics discussed included legal and compliance, innovation and the organisation of the Service Centre. The first AI Service Centre will support the regulation of the European AI Act and ensure transparency and legal certainty for citizens and businesses. When the AI Act comes into force, the Service Centre’s experiences will be used to create authority structures for certification and market surveillance. An important focus of work during the reporting period was the implementation of the Digital Competence Campaign for Austria, an internationally recognised cross-departmental and cross-regional project to improve digital literacy in Austria.

In the period under review, Austria has made itself “fit” in important fields of action in order to benefit as much as possible from the opportunities offered by digitisation and, in particular, AI.

SC^{in} Mag.^{a} Maria Ulmer
Federal CDO (during the period under review)

2023 – AI is everywhere and nowhere

“Risk and opportunity sit just a metre away from the screen.”

In 2023, the fever curve for artificial intelligence shot through the roof. Hardly a day went by without news of generative AI, deepfakes, AI gender bias and the predicted end of civilisation.

The federal administration, and in particular those responsible for digitisation, had to and must continue to provide answers. Answers to employees who are expected to work in accordance with the law, but also with the latest technology, and answers to suppliers when new, forward-looking digital tools are purchased or developed. Answers are also needed on how the AI Act will work in day-to-day business. Ultimately, these responses also set an example for society because of the size and visibility of the federal administration.

Data protection and copyright were already a challenge for the federal government’s screen workers before this AI hype, and will continue to be so. The end of 2023 marks the beginning of a new push to reinvigorate digital fitness training in the administration and in society: The Digital Competence Campaign. But not in the feverish rush to ask all the questions again, but in the certainty that what was true in 2022 is still true today: Risk and opportunity sit just a metre away from the screen.

AL Ing. Joachim Tischler, MSc
Deputy Federal CDO

Austria's package of measures on AI

In order to ensure that artificial intelligence (AI) can be used safely and responsibly, the federal government presented a comprehensive package of AI measures in September 2023.

€ 7 billion

is what the increased use of AI in Austria could bring by 2025.

2023 was the year of ChatGPT. In a very short time, the AI chatbot showed the general public what artificial intelligence applications can do – and how they can change our lives. Developments in the field of artificial intelligence are advancing rapidly. So far, the performance of AI systems has been a doubling every 3.5 months. Studies show: the increased use of artificial intelligence could increase Austria's value added by around seven billion euros by 2025.

Regulation as a competitive advantage

At the same time, there is no question that artificial intelligence needs a clear legal framework: After all, AI can have a number of positive effects on the economy and society, but it can also pose significant risks. Clear regulation creates a competitive advantage for the location, entrepreneurs and all users. The question of values is also crucial, because innovation must go hand in hand with trustworthiness. The European regulation in the AI Act (see box) therefore distinguishes between different risk classes in terms of European values.

Comprehensive package of measures

Against this backdrop, the federal government developed a package of AI measures during the reporting period, which was presented to the public in September 2023. The rapid technological developments of recent months have clearly demonstrated the need for political action in the form of clear legislation and targeted measures. For companies, clear rules and guidelines are important in order to have legal certainty. For citizens, transparency and the protection of their personal data are important. The package of AI measures presented consists of several harmonised components.

1 AI agency

Preparations for the implementation of the European AI Act have been made at the national level through the establishment of a Service Centre at the Austrian Regulatory Authority for Broadcasting and Telecommunications (RTR). When the AI Act comes into force, the preparatory work of the Service Centre will be used to establish the necessary authority structures for certification and market surveillance as a second step. Along with Spain and the Netherlands, Austria is one of the first countries to have such a Service Centre. The aim is to provide businesses and the public with a service-focused point of contact.

2 Mandatory labelling

In order to ensure transparency and trust in artificial intelligence in advance, a labelling requirement for AI systems is being sought in Austria before the European AI Act comes into force. Users of modern technology should know when they are interacting with artificial intelligence.

3 Development of competencies

In order to support the general public in dealing with AI and the associated risks and opportunities, the Digital Competence Campaign (DKO) of the BMF, BMBWF, BMAW and BMKÖS (from 2024 also the BKA) will focus on basic knowledge of AI and raising awareness in dealing with AI. To this end, low-threshold workshops on a variety of topics have been organised in all the municipalities of the country. These started in October 2023 and also provided knowledge on AI (see also page 20).

4 AI Monitor

An AI monitor is being created to track the impact of artificial intelligence on society, businesses and consumers. The aim of this monitor is to inform the development of future policies to maximise the benefits and minimise the risks of AI. The data from the AI Monitor will be publicly available on digitalaustria.gv.at, so that it can be viewed by companies and all citizens.

5 AI strategy

The AI strategy presented in summer 2021 was developed and presented as an agile strategy. With this in mind, an AI implementation plan has been drawn up in collaboration with all ministries as part of the AI Policy Forum, as well as experts from research, science, business and stakeholders. This implementation plan provides updated measures for the years 2024 to 2026 to enable Austria to realise the full potential of this technology.

The European AI Act at a glance

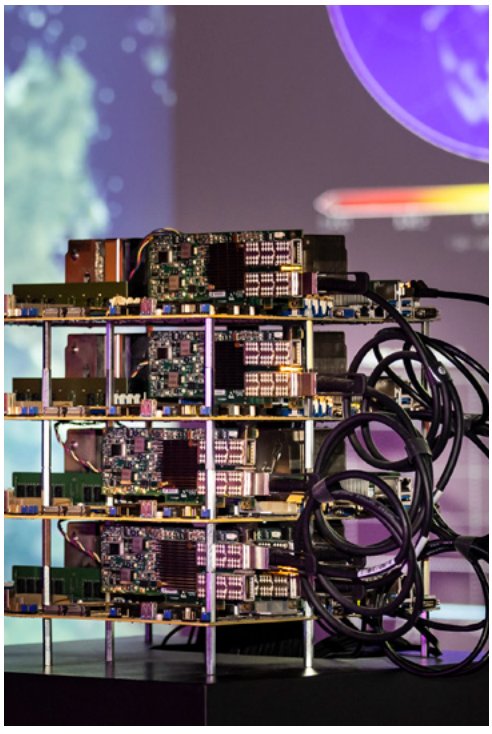
The AI Act is the world's first comprehensive regulation on AI and aims to ensure the safety, robustness and trustworthiness of AI systems in Europe. It classifies AI applications into four risk categories:

- Applications and systems that pose an unacceptable risk (e.g. social scoring by governments)
- High-risk applications (e.g. ranking tools for scanning CVs)
- Low-risk applications that require transparency to users (e.g. chatbots or AI-generated content)
- Applications that are not prohibited or considered high risk and therefore largely unregulated

Find out more at digitalaustria.gv.at

What is important when using AI & data?

An “Advisory Board for Artificial Intelligence” which was prepared in 2023 will advise policymakers on technical, social and ethical issues relating to artificial intelligence. In the Digitalisation Report, its members explain what is most important to them when using AI and data.



Horst Bischof
Graz University of Technology, Chairman

Austria is a centre for research and innovation. The targeted use of AI technologies is essential for the competitiveness of the location. It is important to have a balanced approach that both encourages innovation and provides adequate protection against abuse.

Jeannette Gorzala
AI Austria, Deputy Chairwoman

The efficient and responsible use of data with the right technology is the key to locational and competitive advantages for Austria. This approach will also enable us to automate non-value-added tasks, freeing up space for the creativity and productivity inherent in human beings.

Erich Albrechtowitz
Federal Chancellery

Artificial intelligence can – and should – be an effective tool for efficiency in the public sector, relieving the burden on employees and freeing them from routine tasks. Ultimately, it is important to ensure that it is always people who make the decisions. AI is subject to continuous development. It is therefore important to continuously develop technological knowledge, application knowledge and ethical reflection.

Markus Fallenböck
University of Graz

The AI Regulation creates a shared domestic market for AI products in the EU. This is an opportunity, but it also means competition between the 27 Member States. Austria has a head start in this area, in particular thanks to initiatives by the BKA and RTR. Austria can further extend this lead through the intelligent and responsible use of data, including from the public sector.

“The efficient and responsible use of data with the right technology is the key to locational and competitive advantages for Austria.”

Nikolaus Forgó
University of Vienna

In my view, it is particularly important for Austria to have a predictable and comprehensible legal framework that focuses not only on the risks but also on the opportunities.

Sabine T. Köszegi
Vienna University of Technology

High-quality data is an absolute prerequisite for high-quality AI systems, but it is no guarantee that they will also respect and protect people’s fundamental rights. This requires design standards such as fairness by design and privacy by design as well as careful data management. In addition to priority initiatives in research funding, raising awareness of these aspects among consumers, users and companies will be a key success factor for AI in Austria.

Verena Krawarik
Austria Press Agency

Generative AI models challenge traditional data aggregation and delivery practices. That is why we need to shape the framework conditions for the data economy of the future. Firstly, by enabling companies and citizens to explicitly share their data for AI training in a suitable infrastructure, and secondly, by incorporating the transition from research to product creation into the projects from the very beginning. Real-world AI labs can be a good tool for this.

Bernhard Moser
Austrian Society for Artificial Intelligence (ASAI)

Take data monopolisation seriously as a threat and introduce effective countermeasures, for example along the lines proposed by Viktor Mayer-Schönberger (see, for example, the book “Das Digital”), according to which monetary taxes alone are not enough, but data should also be made public. However, the issue of donating data altruistically, a fundamental component of the Data Governance Act, is still poorly defined. There are a number of opportunities to strengthen cooperation between civil society, business, science and the public sector by creating specific data spaces where altruistic data exchange can take place (specific examples include health, climate emissions and transport, ESG reporting, etc.).

Clara Neppel
IEEE Technology Centre GmbH

Trustworthy AI covers all aspects of the collection, management and use of personal data. The consideration of fundamental rights, such as data protection, will create a trust-based data ecosystem in Austria and benefit innovative AI projects. Special emphasis should also be placed on preparing for upcoming AI regulations, standards and certifications.

Walter Peissl
Academy of Sciences

The hype around generative AI has led to high expectations for artificial intelligence in many areas of society. It will be important to take a nuanced view of the potential of different AI applications and to promote an appropriate approach to them. This includes comprehensive efforts to improve AI literacy and regulatory frameworks. Particular attention must be paid to respect for fundamental rights and to threats to democracy, such as deepfakes.

Carina Zehetmaier
Women in AI

AI systems are a mirror of our society. Prejudice can creep into the technology, especially through the training data, and lead to discrimination. To ensure that technology is used responsibly and serves us all well, we need the involvement of experts from a wide range of disciplines. Promoting AI literacy and education in the field of AI is a prerequisite for shaping our future with AI, securing jobs, driving innovation and strengthening Austria as a business location.

The AI Advisory Board

monitors the technological development of AI within and outside the EU and advises the federal government.

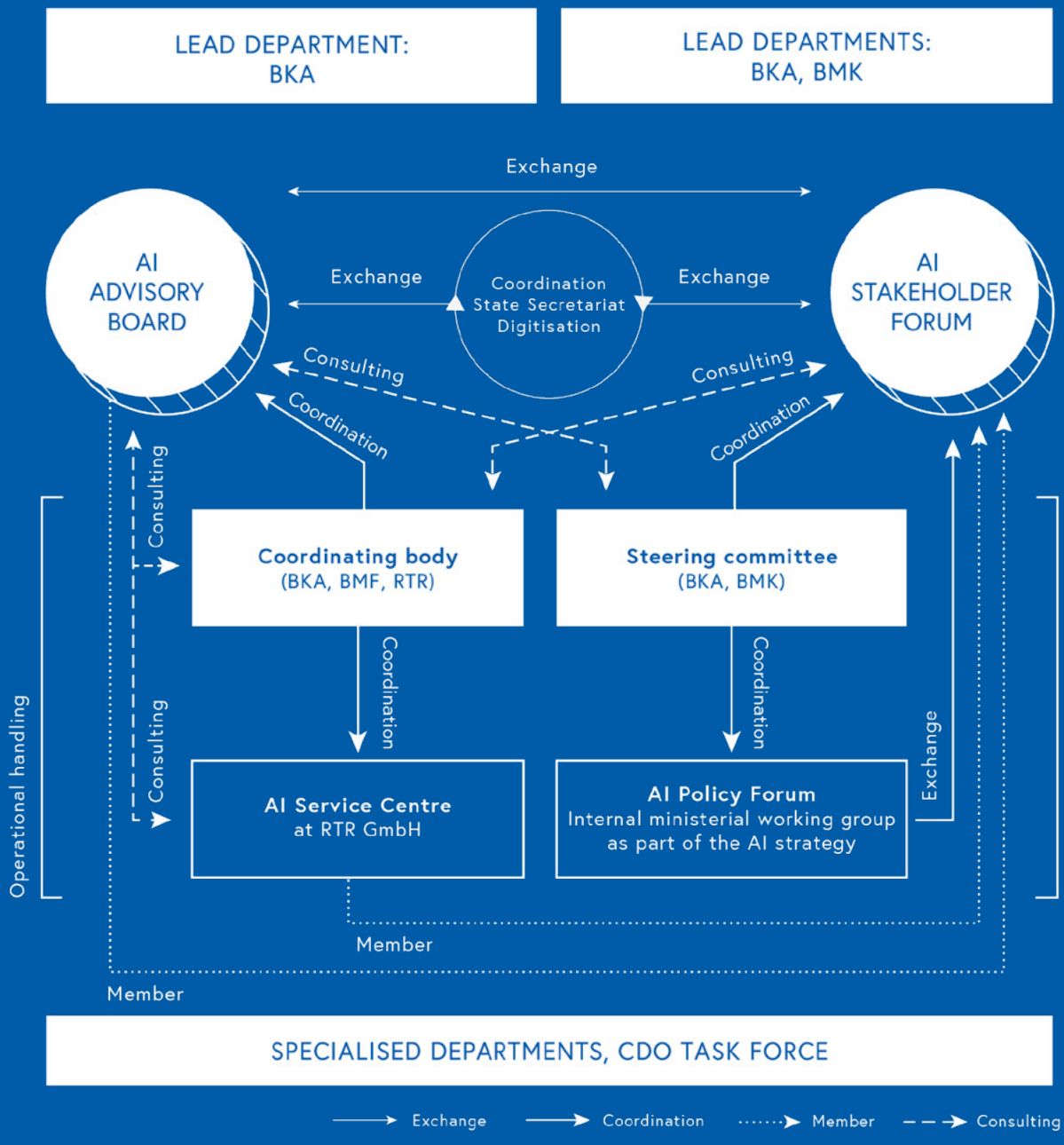
Responsibilities of the AI Advisory Board

- Informing and advising the members of the federal government and RTR-GmbH dealing with AI issues on current developments in the field of AI (technical, ethical and social aspects)
- Monitoring the technological development of AI within and outside the EU and assessing the associated opportunities and challenges for Austria
- Focussing by supporting the members of the federal government and RTR-GmbH dealing with AI issues in prioritising the many aspects of AI and concentrating on the most important issues
- Strategic planning and advising the federal government within the framework of the AI Policy Forum on the development and implementation of the strategy for artificial intelligence, including the definition of goals, priorities and measures

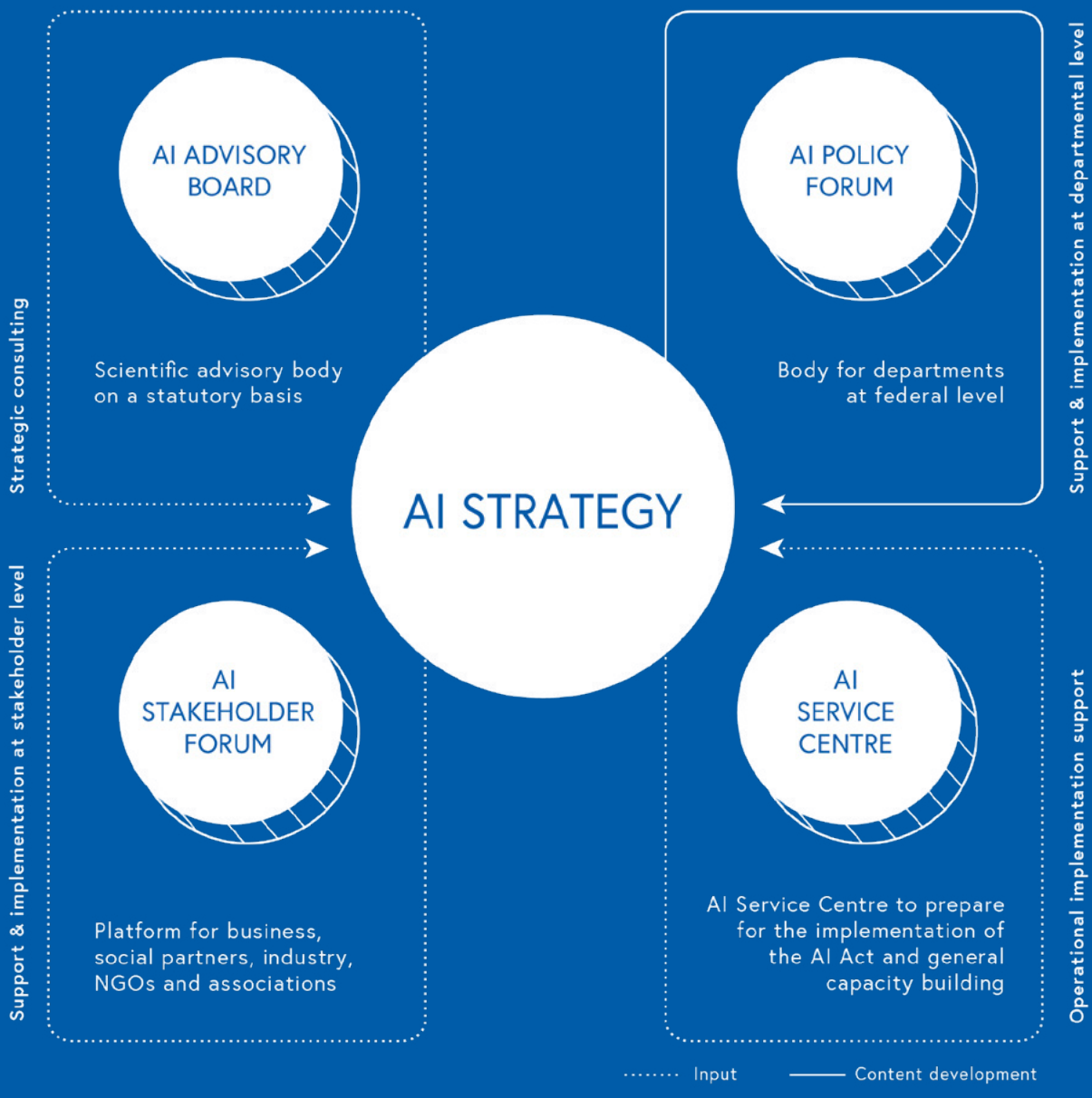
AI governance at a glance

Austria established a modern AI governance system in 2023. It ranges from scientifically based expert advice to operational implementation together with stakeholders.

AI governance – Committees and structure



Committees in detail

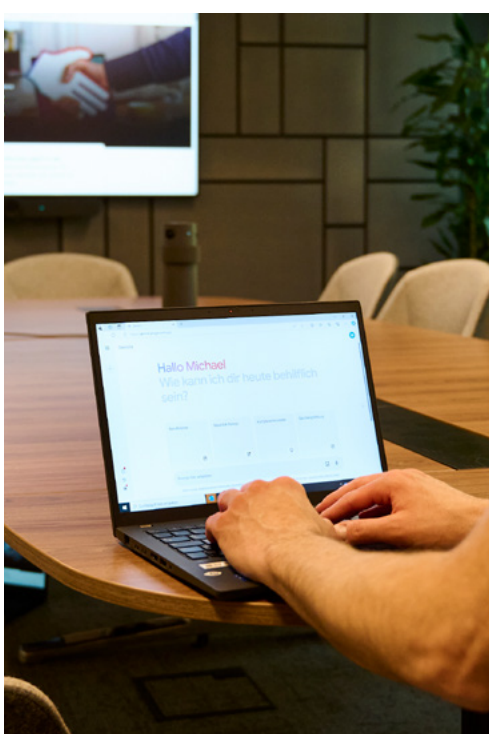


Responsibilities of the committees

AI ADVISORY BOARD	*Informing and advising the federal government; monitoring the technological development of AI; focussing by supporting the federal government; strategic planning and advising the federal government on AI strategy*
AI POLICY FORUM	*Networking within departments; exchange of information on planned AI activities; support for the implementation of AI strategy activities; key design of AI strategy by departments*
AI STAKEHOLDER FORUM	*Networking; input from the ecosystems to the AI strategy and concrete cooperation in its development; support for the implementation of the AI strategy activities; operational handling by the heads of the AI Policy Forum*
AI SERVICE CENTRE	*Consulting and service for regulatory AI issues and the use of AI in the telecoms and media sector; operational exchange with the Stakeholder Forum and the Policy Forum; strategic support from the AI Advisory Board*

Digital skills for the entire country

Teaching AI skills is also part of the Digital Competence Campaign for Austria programme. Around 4,500 “Digital Everywhere” workshops provide knowledge not only on AI, but also on digital senior education, digital administrative procedures, online security and living with increasing digitisation.



20,000

new jobs could be created through successful digitisation.

Forecasts show that investment in digitisation could contribute up to 1.9 per cent to GDP growth in Austria. The increased use of artificial intelligence alone could add around seven billion euros to Austria’s value added by 2035. Successful digitisation could create around 20,000 new jobs a year. At the same time, however, the studies also make one thing clear: A lack of digital skills in the population and in the labour market is a massive obstacle to the success of the digital transformation. International rankings and comparisons, such as the EU Digitisation Index DESI, clearly show that despite a generally positive development in the area of digital skills, there is still room for improvement in Austria and a need for action for certain groups and in important areas. This applies not only to the group of ICT specialists, but also to the basic digital skills of the general population. For example, analysis of the national Digital Skills Indicator, based on data from 2021, shows that 37 per cent of citizens between the ages of 16 and 74 lack basic digital literacy skills. According to surveys from the second quarter of 2023, this figure has fallen to 35.3 per cent.

A comprehensive programme

The Austria-wide Digital Competence Campaign of the BMF, BMAW, BMBWF and BMKÖS (from 2024 also the BKA) aims to close this gap. Part of the Digital Competence Campaign, which is funded with 30 million euros until 2026, is an extensive workshop programme. A total of 4,500 "Digital Everywhere" workshops will be held in every community to teach basic digital skills.

Around 800 pilot workshops were held in 2023 to test the workshop programme. An external evaluation was also carried out in order to adapt and further develop the workshops in line with the needs of the different target groups. A total of 753 workshops in 209 communities with 8,544 participants were evaluated. The results of the study show that participant satisfaction was very high. The motivations for participating ranged from personal curiosity to the desire to stay in touch with family online. The workshops were not only fun for the participants, but also gave them concrete knowledge of where to find help and how to use new applications. For experts, it is clear once again that digital skills training needs to meet people where they are – in their everyday lives at home, in their communities.

4,500

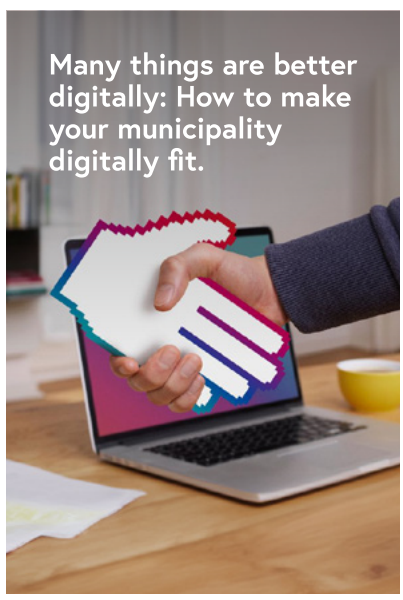
"Digital Everywhere" workshops are designed to teach basic digital skills.

Workshops for every community

Based on the results of the evaluation, the workshop programme is being rolled out in municipalities across Austria in 2024. From the second half of the year, every Austrian municipality will be able to book a free workshop programme – and make its citizens fit for everyday digital life. Topics range from digital administrative procedures and cybersecurity to the much-discussed topic of AI. "Digital Everywhere Plus" will take the Digital Competence Campaign one step further from autumn 2024. While "Digital Everywhere" aims to provide basic digital skills, "Digital Everywhere Plus" offers the opportunity for more in-depth and advanced training. This allows digital literacy to grow throughout Austria.

Digi interpreters in local communities

For the organisational implementation in the municipalities, the mayors appoint so-called "Digi interpreters". These are digitally interested people from the community who are responsible for organising the workshops in the community. This way, every municipality can find the right workshop programme and make its citizens digitally fit.



The place to be for digital talent

Stefan Thurner
President Complexity Science Hub (CSH)

As part of the implementation of the Digital Competence Campaign, the Complexity Science Hub (CSH) in Vienna is creating a top training programme, the Digital Innovation School. The doctoral programme is designed to open up new opportunities for young talent – and to provide Austria with leaders and managers in the digital field. In this interview, CSH President Stefan Thurner explains the goals and background.

What makes the Digital Innovation School attractive to young talent?

Thurner: Our doctoral programme enables students to use CSH's expertise in data, network and complexity research to contribute to solving current challenges in areas such as sustainability, economy, health, green transition and society. To do this, we need to work with the best of the next generation to make sense of the vast amounts of data that describe our world. With this programme, we at the Complexity Science Hub, together with our members, are creating the opportunity to attract digital talent to Austria and build a tradition of digital excellence. The first group of doctoral students will start in autumn 2024.

What exactly can students expect at the Digital Innovation School?

Thurner: Students do not have to commit themselves to a scientific niche. Instead, the programme integrates a range of topics and disciplines, such as data, network and complexity science, so that ideas and tools from one area can be rapidly applied to others. Students can also gain important experience in translating research findings into policy and practice through collaborations and internships in public administration and companies. Students benefit from CSH's close links with numerous other institutions in Austria and around the world.

In your experience, what are the most important factors in motivating young people to pursue a career in IT?

Thurner: Young people need to be able to see that they can make a real difference in the world with exceptional IT and digital skills. It is therefore important to involve them early on and give them responsibility so that they see that they actually have the opportunity to make this difference.

What can Austria learn from other places in the world? And what can they learn from Austria?

Thurner: Austria offers a high quality of life and attractive employment opportunities, giving us an advantage over many other locations. What we should learn from the American West Coast, for example, is an innovative self-image – that it becomes part of Austrian culture to try things out and take risks. That is the only way to be innovative

Digital Innovation School

With the Digital Innovation School, which was prepared in 2023, Austria is creating a new training opportunity for Austria's digital experts of the future. With a planned duration of at least ten years and a budget of more than twelve million euros, the new doctoral programme is secured for the long term. Research findings are made publicly available in interactive dashboards. Working materials for children are also being developed.

Facts, figures and data on ICT experts in Austria

- Studies by the Institute of Industrial Science (Industriewissenschaftliches Institut, IWI) indicate an additional demand of 25,700 to 27,800 ICT specialists (2022). According to IWI modelling, there will be an additional demand for between 35,400 and 38,600 ICT specialists by 2030.
- In a Statistics Austria/Eurostat survey on the use of ICT in enterprises, 67.9% of Austrian enterprises looking for ICT specialists in 2022 stated that they had problems filling vacancies.
- A total of 220,700 ICT professionals were employed in Austria in 2022. Compared to 2017, this is an increase of 32,900 professionals or 17.5%.
- Between 2017 and 2022, the number of female ICT professionals increased from around 29,300 to 42,700. This is an increase of 45.4% and significantly higher than for male ICT professionals (12.3%).
- With a share of female ICT professionals of 19.3%, Austria is slightly above the EU average, but only ranks 15th in the EU.
- The increase in the share of female ICT professionals working in the ICT sector (from 31.3% in 2017 to 40.3% in 2022) is an indication that the framework conditions for women in the ICT sector have recently improved.

Young people are primarily users

Bernhard Heinzlmaier, Chairman of the Institute for Youth Culture Research, on IT application skills and young people's motivation for IT careers.

Prof. Mag. Bernhard Heinzlmaier is the director of the Institute for Youth Culture Research and Cultural Education.

Young people are seen as the driving force behind digital transformation due to their high level of IT user expertise. Are they also better equipped to deal with the darker side – cyberbullying, hate speech, cybercrime, fakes of all sorts?

Heinzlmaier: Most young people probably don't have outstanding IT user skills. They are experienced users, but that's all. And they use the digital world primarily for entertainment. They also tend to focus on a small number of platforms. YouTube, Instagram, TikTok and Snapchat take centre stage. Young people's attention skills are structured very differently from those of adults. Young people perceive many things superficially (hyper-attention), whereas adults select and engage more intensively (deep attention) and are therefore less broad-based. According to American researchers, the attention culture of the future will be characterised by hyper-attention, which means that you need a broad overview of knowledge, which you can then drill down on as needed.

In addition, young people have a high level of expertise when it comes to decoding images and symbols. Digital culture is a culture of images. And this is where young people's expertise lies, in the dissemination and interpretation of images.

How and where do young people need support in the digital world?

Heinzlmaier: In his book "The Anxious Generation", Jonathan Haidt argues that young people are losing the ability to communicate satisfactorily and, at worst, may suffer psychological damage as a result. Depression in particular, but also suicides, have increased in the US, which has been attributed to the influence of TikTok and Instagram. The platforms are not seen as community-building, the dialogue partners are kept at a distance. There is little "turn-taking" in communication, usually one person speaks to many. You are often left feeling alone and unappreciated. Loneliness among the masses could become a new phenomenon. In our view, this means that young people primarily need psychological support in order to cope with the secondary effects of online communication. This is about prevention, such as setting realistic expectations, but also about support when depressive episodes or even suicidal thoughts occur.

What is the impact of the digital world on the traditional differences between rural and urban areas?

Heinzlmaier: For young people in rural areas, the digital world has been and continues to be an open door to commercial youth cultures. Those who were previously excluded are now gaining access to their idols and the practices, aesthetics and symbols of their youth cultures. Digital offerings have also made youth culture accessible to young people in rural areas. Stepping out of your isolated, digital role and into the reality of youth cultural events is still difficult. As these are mostly organised in urban areas, or at least in an urban environment, the problem of getting to the event has to be overcome. However, banking clubs are often used to help with this. Whatever the case, it's far more important for young people in rural areas to have access to digital content than for those in urban areas.

For young people in rural areas, the culture of volunteering remains an important issue. Is this changing as a result of digitisation and online volunteering?

Heinzlmaier: Volunteering in rural areas is primarily a community-based activity that thrives on direct contact with people. Online volunteering can therefore only complement, but by no means replace, local community culture. Otherwise, we run the risk of falling into the trap described by Jonathan Haidt: Online contacts that are unsatisfactory because they create distance rather than close friendship and community. If the online world does not build bridges to reality, i.e. lead to real encounters and community building, it can at worst be toxic and lead to an epidemic of mental health problems among young people.

How can young people, and girls in particular, be encouraged to consider the opportunities offered by working in IT?

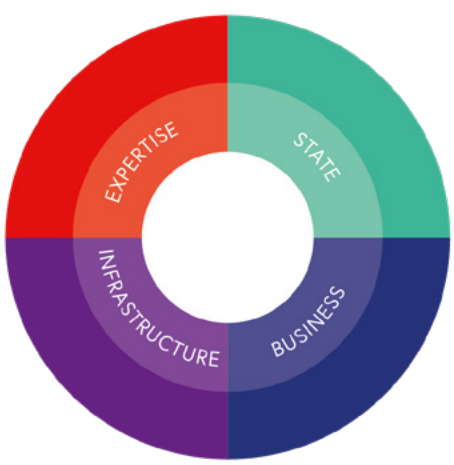
Heinzlmaier: Young people are very utilitarian. You can persuade them to choose a career if it offers them important benefits. What young people look for in a job is job security, good pay and a good working atmosphere. Mental and physical health is extremely important for young people. IT careers will be attractive if these aspirations and expectations of young people are met. If a work-centred approach is required that ultimately leads to dissocialisation, i.e. makes it difficult to maintain contact with friends and family, then young people are unlikely to be attracted to jobs in this sector. For women, it is important to remember that work-life balance is particularly important to them. They are also very concerned about flexibility and the availability of childcare. We still see the traditional tendency for young men to be career-centred, while young women's thinking and actions are strongly family-centred.

jugendkultur.at

Strategic foundations for successful digitisation

During the reporting period, the strategic foundations for digitisation were further developed in a targeted manner in various sectors. With its roadmap for the EU's Digital Decade, Austria has comprehensively developed the strategic framework and target paths for achieving the EU's goals.

digitalaustria.gv.at/strategien.html



The "Digital Compass" with the four dimensions of skills, infrastructure, business and the public sector.

The digital decade: The Austrian way

The European Union's Digital Decade initiative aims to accelerate digital transformation across Europe. Key objectives include a digitally literate population and highly skilled digital workforce, secure and sustainable digital infrastructures, successful digital transformation of businesses and the digitisation of public services. The European Union's "Digital Compass" serves as a "Roadmap to the Digital Decade". It includes concrete objectives ("digital goals") in each area of action, as well as a mechanism for structured cooperation and monitoring. Austria is strategically implementing the goals of the Digital Decade on the basis of the Digital Compass and has developed target paths and key measures for all areas. The target paths are presented in the Austrian roadmap "Digital Decade: The Austrian Way" together with selected key measures.

eGovernment Strategy 2023

Austria's federal, provincial, municipal and local governments are working towards a standardised, networked and coordinated approach to eGovernment. More than 80 representatives from the federal government, the states, cities and municipalities have developed a joint eGovernment strategy for the Austrian administration. This strategy, which was presented in 2023, aims to make the entire range of digital services available to all target groups via simple, networked access in an increasingly mobile device landscape and authentication via ID Austria. The services comply with recognised standards and can be used across borders, particularly within the European Union. The focus of administrative action is on citizens and businesses. Building on the overall vision, more detailed visions and specific initiatives have been developed for the four areas of activity.

Vision and principles of the eGovernment strategy

People use trusted services in digitally sovereign Austria.

- People are at the heart of our digital offering. We consider all social classes and groups equally. Personal contact with the administration is still important to us and is also possible in a digital world. We promote and develop the digital skills of all generations through training programmes and education initiatives.
- We make our full range of digital services available to all target groups – citizens, businesses and government employees – via simple, networked access in an increasingly mobile device landscape and authentication using ID Austria. We adhere to recognised standards for our services and also ensure that they can be used across borders, particularly within the European Union.
- In a cooperation between the federal government, the federal states, cities and municipalities, we are realising today's technological possibilities and potentials. In doing so, we maintain high standards of trust and security, always keeping digital sovereignty in mind. The Austrian legal framework formulates the basic principles of digital administration in a central place and supports and enables the continuous development of digitisation.
- Through continuous innovation, we meet the digitisation expectations of citizens, businesses and government employees, increasing the benefits and efficiency of government.

Facts, figures and data on digital services

Digitales Amt: Simply more comfortable

Digitales Amt downloads:

2022 **714,398**

2023 **1,120,701**

57%

Downloads of the Digitales Amt app increased by 57% between 2022 and 2023. The app makes it even easier to use the service profile of oesterreich.gv.at.

ID Austria: Registrations continue to soar

ID Austria registrations:

2022 **615,134**

2023 **2,002,962**

200
Administrative procedures

400
Services

Thanks to ID Austria, more than 200 administrative procedures can already be completed online. In total, more than 400 services are available. Unlike mobile phone signatures, ID Austria's electronic signature is basically equivalent to a handwritten signature and can be used throughout Europe.

eAusweise: Strong growth

eAusweise downloads:

2022 **492,267**

2023 **1,066,332**

2026

The full version of ID Austria also offers the option of using the new digital ID cards such as the digital driving licence or the digital proof of age. Thanks to the European eIDAS law, the digital driving licence will be valid throughout Europe by 2026 at the latest.

Passport: Strong growth in uploads and reminders

Passport uploads:

2022
98,175

2023
201,208

IDR users:

2022
83,226

2023
153,082

Citizens with an ID Austria can securely store their passports and ID cards online in the Identity Document Register (IDR). If you have registered your passport there, the reminder service will notify you in good time when your passport is due to expire.

Business service portal: More and more users and services

Registered companies:

2022 517,505

2023 605,428

120+
services

As a central platform that connects businesses with the Austrian administration, the portal offers access to over 120 services with a single sign-on. More and more companies are using the services of the business service portal.

eGovernment: Leading position in Europe

According to the eGovernment Benchmark Report, Austria is one of Europe's leaders in the use and progress of eGovernment – and has continued to improve. In 2023, Austria scored 78, which was above the EU average of 70.

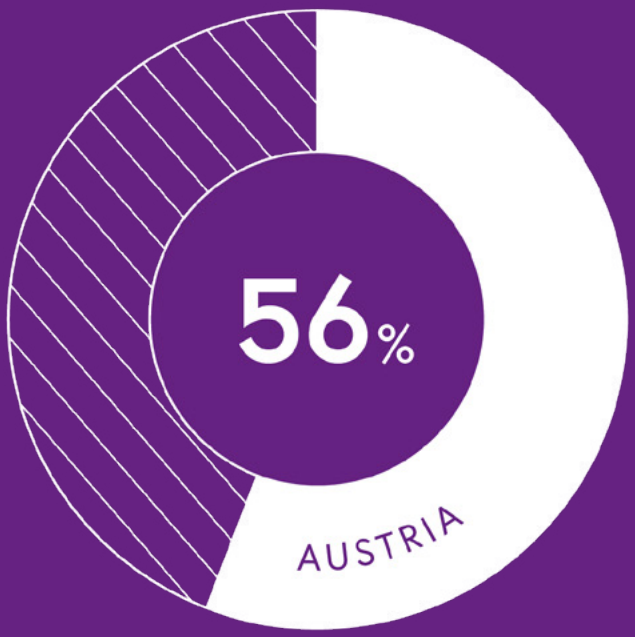
eGovernment performance 2023:

EU average **70 Points**

Austria **78 Points**

Use of eGovernment services:

In 2023, the use of eGovernment services in Austria was 56 per cent, ahead of Germany (54 per cent) and Switzerland (53 per cent). Compared to 2022, this represents an increase of seven per cent for the Republic.



Technology trends in public administration

Artificial intelligence is also a megatrend in public administration, as the Federal Computing Centre's Technology Radar shows. The data economy is becoming an increasingly important driver of innovation in public administration.

The Technology Radar produced by the Federal Computing Centre (BRZ) identifies 51 IT trends and technologies that can be used in administration. Artificial intelligence is by far the most important trend. It enables new forms of assistance systems and research tools, particularly through generative AI. BRZ has long been involved in machine learning and artificial intelligence. Among other things, a test catalogue was developed to provide a common understanding of trustworthy AI. At the same time, it identifies the risks associated with using an AI system and how these can be mitigated while maximising the benefits. The top trend includes forms of artificial intelligence applications such as large language models (LLMs), AI copilots, prompt engineering or retrieval augmented generation, i.e. the enrichment of LLM systems with specific information.

Important areas of application

The Technology Radar also shows how AI is already being used in public administration.

1 Image recognition & face detection

When digitising image collections from archives, images are automatically recognised and tagged with keywords. AI can be used to recognise objects and scenes – for example, whether it is a landscape, a building or a group of people. In addition, faces in images can be recognised and anonymised in a targeted manner to protect privacy.

2 Anonymisation of court decisions

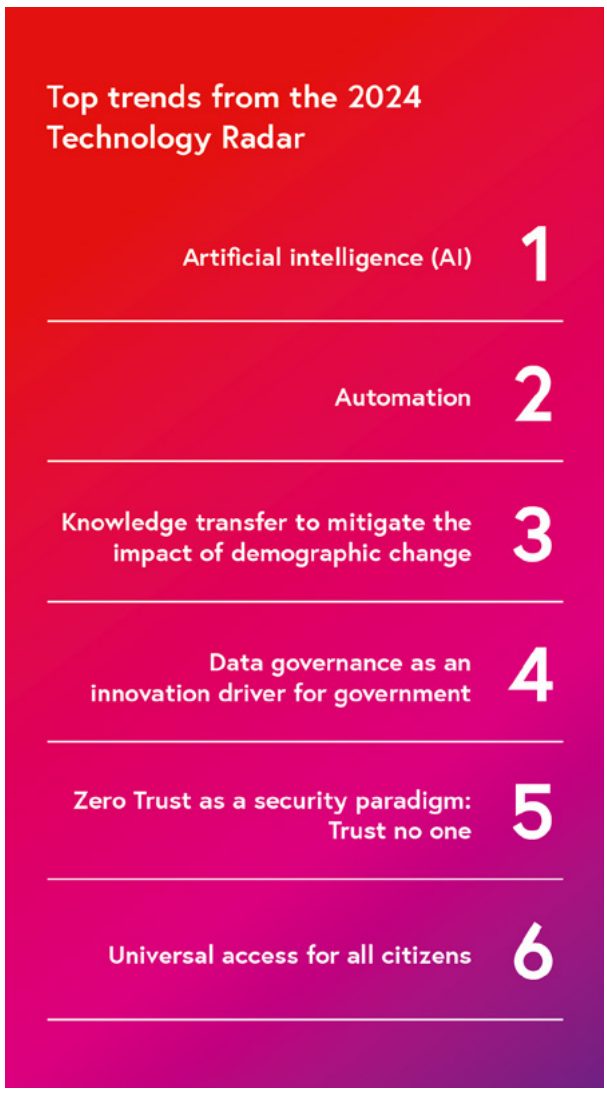
Ordinary courts make decisions that are important to all those seeking justice. Decisions published in the Federal Legal Information System (RIS) are almost exclusively from the Supreme Court. Prior to publication, all personal data and information that allows conclusions to be drawn about the matter or persons must be removed. As a manual process, anonymisation takes a long time. Machine learning and the use of AI have greatly accelerated anonymisation. The application developed by the BRZ makes it possible to identify and extract the persons, organisations, places and other relevant metadata that appear in court decisions and to anonymise them according to defined rules in compliance with the legal framework.

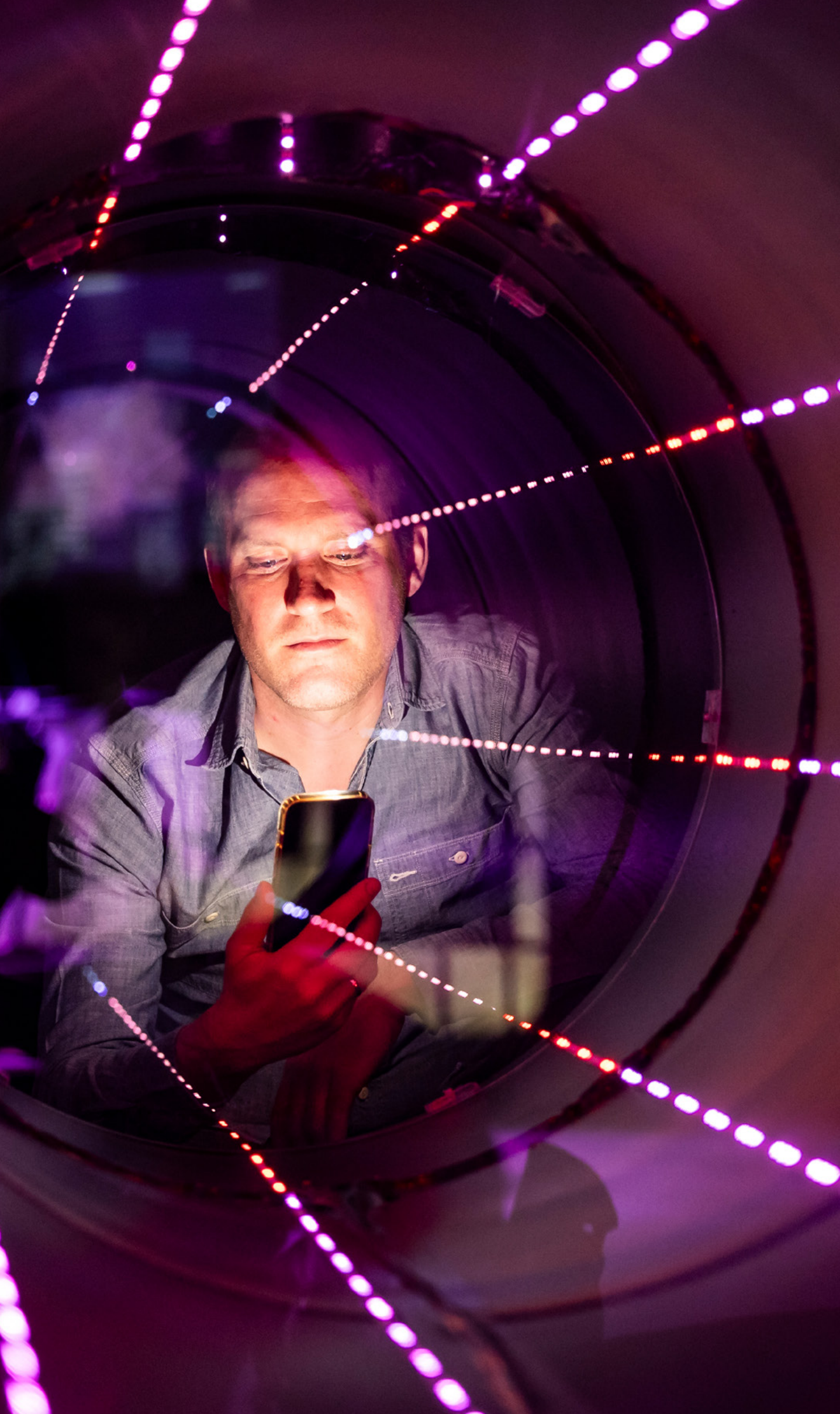
3 Support for companies in the Business Service Portal

The Business Service Portal (USP) uses artificial intelligence methods to help entrepreneurs find suitable subsidies.

Data economy as a driver of innovation

Data governance is another trend that is becoming very important across Europe. With the Data Governance Act, the European Commission has laid the foundations for the creation of a European data exchange model. Data is the “new gold” – and therefore one of the most important resources for the ongoing digitisation and training of AI solutions. It also forms the basis for innovation and decision-making in companies and organisations. Data governance promotes the responsible and effective handling of valuable public sector data. Use cases include data management platforms and portals. The data economy is therefore an important driver of innovation for the public sector as well.





AI & data in the federal government

Selected departmental projects

Federal Chancellery
of the Republic of Austria

Digital security for the workforce

The Federal Chancellery is pushing ahead with digital support for human resources development using state-of-the-art methods, including an artificial intelligence support system.

CDO
GL Erich Albrechtowitz

“For the federal government, it is more important than ever to maintain its attractiveness as an employer by efficiently supporting the successful retention and integration of employees in public administration processes and by providing an attractive working environment.”

Digital transformation and demographic trends have significantly changed the balance of power in the labour market. Successful recruitment of highly qualified staff and professional staff development are a key focus of the work of the federal government and also of the Federal Chancellery. They play a decisive role in the attractiveness of the federal government on the labour and personnel market throughout the entire employee lifecycle. Working with HR decision-makers, solutions have therefore been developed as to how the digital future can be developed and how the necessary change can be organised in a successful and attractive way.

For the federal government, it is more important than ever to maintain its attractiveness as an employer by efficiently supporting the successful retention and integration of employees in public administration processes and by providing an attractive working environment. At the same time as the labour market is changing, changes in information technology – driven by cloud services, mobile infrastructures, the efficient use of vast amounts of data and artificial intelligence – are demanding that business models and processes, as well as the use of information technology, be rethought and redesigned.

Digital for Personnel

Against this backdrop, the Federal Chancellery (BKA), together with the Federal Ministry of Arts, Culture, Civil Service and Sport (BMKÖS), launched the "Digital for Personnel" (Digital für Personal) programme. The aim of "Digital for Personnel" is to supplement the existing digital services offered as part of the federal government's IT human resources management, such as PM-SAP, employee self-service, the federal service portal (Serviceportal Bund), electronic training management and electronic personnel files, and to support the federal administration in personnel development measures using the comprehensive SAP SuccessFactors tool suite.

From a functional point of view, this means a new and broad range of digital services for the following topics:

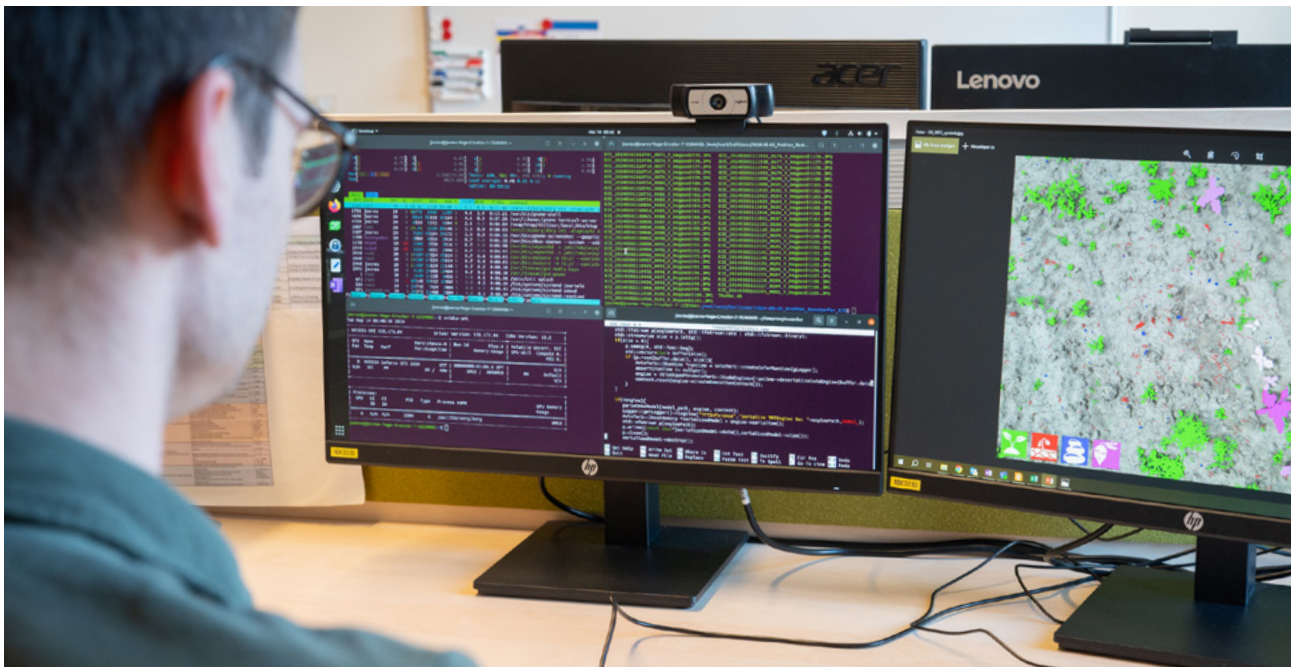
- Onboarding
- Performance & Goals
- Recruiting
- Learning
- Succession & Development
- Job Profile Builder
- SAP Analytics
- AI Assistance and Training System

All new functionalities will be fully integrated into the existing service offering of the federal government's IT human resources management system or will be based on it as a prerequisite.

Assistance system with artificial intelligence

A key component of the "Digital for Personnel" strategy is continuous and sustainable support with timely, innovative solutions. In the future, new functionalities and innovations will therefore be delivered on a half-yearly basis. The training and introduction of these innovations will be carried out using an artificial intelligence-based assistance system. However, this enormous increase in innovative strength also requires a much greater degree of homogenisation and standardisation of administrative processes in human resources management at the federal level. The attractiveness of the workplace, the war for talent, digital transformation and high levels of innovation are pressing issues for the administration. Successfully meeting these challenges will be critical to the future of the public sector.

Federal Ministry
of Labour and Economic Affairs



Using data for better decisions

Whether in a crisis or in day-to-day work: The intelligent use of data provides new insights and knowledge for informed decision making. The Ministry of Economic Affairs shows how to get more value from data.

Economic Situation Dashboard: Crisis-proof decision making

Strengthening the resilience and crisis resistance of Austria as a business location is an important goal of the Ministry of Economic Affairs. To this end, an overview of current developments and trends is particularly important. The management IT tool “Economic Situation Dashboard” can be used to collect, record and visualise the administration’s wealth of data in order to provide a sound basis for (economic) policy decisions.

As part of the ministry’s coordinating role in the area of economic crisis prevention, the primary objective of the dashboard is to ensure that the conditions are in place for continuous monitoring of any impending or emerging shortage trends. To achieve this, it is important to structure a wide range of information in a clear way, to make connections visible and to visualise cross-cutting issues in an overall context. In this way, the dashboard serves to increase overall national resilience: It documents the knowledge gained for decision-makers – both in crisis situations and in everyday life – and thus supports the identification of improved options for adaptation and action.

The following data has already been added to the dashboard:

- Economic data based on macroeconomic indicators from national and international institutions (WIFO, OECD, etc.)
- Selected price indices
- Developments on the labour market
- Insolvencies
- Information on the energy sector (gas, electricity, liquid/solid fuels)
- Information on product groups (wood, agricultural products/industrial and precious metals)
- (Inter)national trends in logistics situations affecting the Austrian economy

Further expansion stages, such as the planned Austrian Supply Chain Index by ASCII or an early warning system and forecast calculations, are intended to extend the tool's capabilities and make it possible to identify structural changes to the location at an early stage.

CDO
Mag. Andreas Moser, LLB

"In order to generate useful information and insights in an age of information overload, it is essential that data is properly prepared."

57 TB

correspond to approximately

70,000 pages

This volume of data was analysed using AI to investigate a construction cartel.

Antitrust enforcement with AI

The autonomous and independent Federal Competition Authority (Bundeswettbewerbsbehörde, BWB) is using artificial intelligence as a key technology to strengthen its IT forensic work. Regular house searches result in the seizure of large amounts of unstructured data. In order to cope with this amount of data, the BWB began to use advanced technologies early on and is now a competent partner for other competition authorities. The active development of AI makes it possible to identify complex interrelationships, to combat potential infringements more effectively and to speed up proceedings. One of the many examples of the use of AI is the cartel in the construction industry: In total, 57 terabytes of data – or about 70,000 pages – were analysed to process it. "In a world of constant change, it is essential that the BWB's IT forensics department keeps pace with technological developments in order to conduct relevant and effective investigations and successfully uncover breaches of antitrust violations," says BWB Director General Natalie Harsdorf-Borsch.

Federal Ministry
of Education, Science and Research

AI package for Austria's schools

Artificial intelligence brings with it new challenges, but more than anything else it is an opportunity for schools. The Ministry of Education has launched a scientifically based "AI School Package" to further develop digital education in Austria.

322,000

Pupils were equipped with digital devices by the end of the 2023/24 school year.

CDO
GL Mag. Martin Bauer, MSc

"We are not just reacting to AI, we are actively shaping it and laying a strong foundation for sustainable education."

The Federal Ministry of Education, Science and Research is driving the digitisation of the education system with its 8-point plan. Under this programme, more than 322,000 students at secondary level 1 (middle school, special school, junior AHS level) had already been equipped with digital devices by the end of the 2023/24 school year. The compulsory digital literacy course not only teaches young people how to use their devices responsibly, but also includes digital skills in the use and management of digital media as well as computer science.

Integrating artificial intelligence

The AI School Package aims to support schools in the integration of artificial intelligence and includes the following key elements.

1 International perspectives for AI in the school system

By integrating international perspectives into national events, schools are encouraged to rethink the use of AI.

2 Integrating AI into school development

The introduction of an AI badge in school development is intended to raise awareness of AI in schools.

3 Focus on AI in teacher training

As a network of innovative schools, eEducation Austria promotes the training and further education of teachers in the field of AI and provides, among other things, a database of experts.

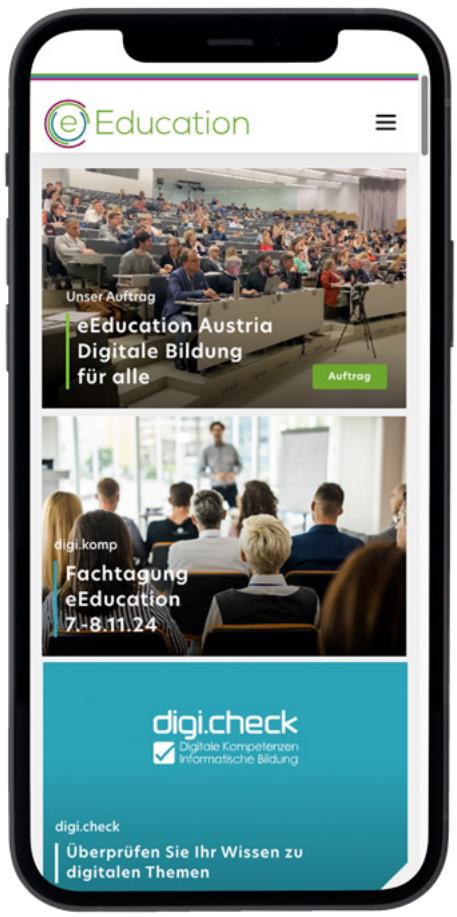
4 Generative AI as a teaching and learning tool

Schools will be empowered to use AI tools such as ChatGPT in a targeted manner, with the quality of the interaction ensured through the skilful formulation of prompts. Best practice examples of successful prompts are collected and rewarded.

5 Pilot school project to evaluate AI learning software

A pilot project has been launched in which 100 selected schools are testing and evaluating AI-based learning software. The aim is to optimise learning processes and support teachers.

Overall, the AI School Package promotes the use of AI technologies in schools to improve teaching and learning processes and prepare schools for the challenges of digitisation. The initiative is complemented by scientific support from the University of Graz, which will make recommendations based on the evaluation results.



eEducation Austria offers training and further education opportunities for teachers in the field of AI.

Federal Ministry
for European and International Affairs

Worldwide efficiency

In 2023, the Federal Ministry for European and International Affairs (BMEIA) was driving forward the standardisation of its IT systems and the "ELAK im Bund" worldwide. This results in a sustained increase in the efficiency of work processes and services.

The "ELAK im Bund" (EiB) file management system has been in use at the BMEIA headquarters for more than 25 years. However, due to technical limitations and a lack of network infrastructure, it had not been possible to use EiB in embassies and consulates around the world. As a result, electronic file processing was carried out in two separate systems: in Austria, the web-based "ELAK im Bund", and abroad, a self-developed, simplified information system, which could be used offline but required complex backup, synchronisation and maintenance processes.

The ongoing expansion of the network infrastructure at all Austrian embassies and consulates has significantly improved their Internet connectivity by 2023. In a proof of concept, it was confirmed that the worldwide network availability at the locations of the Austrian embassies and consulates not only enables secure and high-performance use of the "ELAK im Bund", which is operated centrally in the Federal Computing Centre (Bundesrechenzentrum, BRZ), but also that specific security requirements for worldwide use can be implemented in the "ELAK im Bund". This created the conditions for the standardisation of the processing of business cases and files in the ELAK im Bund for all areas of the BMEIA.

25 years

is how long the ELAK im Bund (EiB) file management system has been in use.

CDO
AL Mag. Kristian Juric

“The efficiency of work processes is sustainably increased.”

Introduction in all Austrian embassies and consulates

The complete migration of all embassies and consulates to “ELAK im Bund” – and the associated redesign and optimisation of workflows – will increase efficiency and cooperation between headquarters in Vienna and embassies around the world. The migration will see more than 1,000 users switch to the shared “ELAK im Bund” system. As part of the changeover, 25 million documents and around nine terabytes of data will be migrated to the central system.

25 million documents

are being migrated to the ELAK central system as part of the system migration.

Goals and added value

The “ELAK im Bund worldwide” project aims to completely replace the legacy file management system at all Austrian embassies and consulates, taking into account the federal government’s digitisation strategy. Embassies and consulates can make full use of all “ELAK im Bund” services, the extensive catalogue of functions and the large number of interfaces. Processes are harmonised and consolidated without media disruptions, both in the representations and at headquarters: A transaction can therefore be processed in a single file. This sustainably increases the efficiency of work processes.

Federal Ministry
of Finance

AI-based data processing speeds up service

The Federal Ministry of Finance (BMF) is using advanced AI algorithms to better meet the needs of citizens and improve the quality of its services. The full version of ID Austria opened a new chapter in the digitisation of Austria in 2023.

CDO
Dr. Manuel Zahrer

"By using AI, we are able to process the data faster in order to provide citizens with a better service."

Automatic extension of eligibility for family allowances

Intensive work has been underway for two years to improve customer service in the area of family allowances using artificial intelligence methods. By analysing a large number of completed claims, it is possible to identify those cases where the data situation justifies an automatic extension of the claim. Last year, more than 100,000 cases were automatically renewed. This helps to reduce the workload on tax office staff and shorten waiting times for citizens.

In addition to the content-related work with AI, a corresponding infrastructure (hardware/software) was provided for the activities of the data scientists and the operation of the developed solutions. Following a successful tender, work began in 2018 to develop a comprehensive platform for AI topics. In order to provide a "state of the art" infrastructure in this rapidly changing environment, a major upgrade was undertaken in addition to ongoing improvements. As a result, the Federal Ministry of Finance operates one of the largest and most modern AI platforms in the federal government in order to further develop comprehensive and innovative solutions such as the "automatic extension of eligibility for family allowances".

Risk scoring for corporate tax assessments

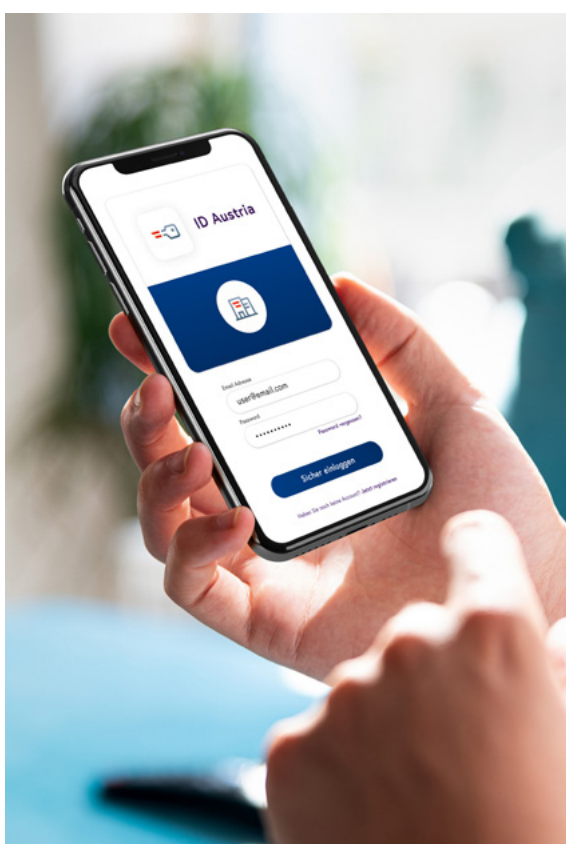
Since 2019, work has been underway on the automatic risk scoring for employee and company tax assessments. Due to the millions of applications in these areas, it is not possible to check every single application. Since 2021, the BMF has increasingly used artificial intelligence methods to answer the question of which of these applications should be checked. By intensively studying fraud scenarios and using supervised learning methods, it is usually possible to carry out very accurate risk analyses of applications based on large amounts of data. The basic principle is always the same: In a first step, audits from the last ten years are used in combination with countless other data from the BMF to train the AI. The resulting models are then validated by experienced auditors to ensure the highest possible quality.

Once the models are up and running, all cases selected by an automatic risk analysis are still checked manually by tax office staff. Manual review of high-risk cases eliminates false positives, as the final decision on whether a case is positive or negative is made by a human.

Low-risk cases are assessed in a separate, accelerated process and can be paid within a few days. The combination of AI and manual post-processing by tax office staff has significantly reduced the workload in recent years and significantly reduced the average processing time for claims.

ID Austria in full operation

ID Austria began regular operations on 5 December 2023. Since then, the development of the mobile phone signature as a central government digital identity has enabled secure digital online identification, secure digital ID services and the easy use of digital services. Thanks to the electronic identity, more than 200 administrative procedures can already be completed online. More than 400 services are available. Digital documents can be signed online with ID Austria. Unlike mobile phone signatures, ID Austria's electronic signature is legally equivalent to a handwritten signature. In addition, the full version of ID Austria also offers the option of using the new digital ID cards such as the digital driving licence or the digital proof of age. It can be used anywhere in Europe. By the beginning of December 2023, 1.8 million people had already registered with ID Austria.



Federal Ministry
of the Interior

Safe with AI

The Federal Ministry of the Interior (BMI) is systematically building AI expertise and implementing sustainable digital innovations.

The Data Management and AI Support Unit has been in place since mid-2022.

A data management and AI support unit was established at the Federal Ministry of the Interior in mid-2022. The unit acts as a competence hub for artificial intelligence within the ministry. The aim is to investigate use cases for the possible application of AI methods and to develop and coordinate their implementation on an interdisciplinary basis. The Federal Ministry of the Interior is currently working on the government's AI strategy "AIM 2030", as well as a guideline for dealing with AI.

Support for routine activities

Surveys at the Federal Ministry of the Interior revealed a high demand for AI support in the administration. This applies in particular to internal research, internet research, translations and the preparation of texts such as summaries. The AI solutions are only meant to assist the employees with their routine tasks. Decisions on specific administrative actions will always remain the responsibility of a competent body.

Sustainable innovation: Core register of persons and bPK concept

For the management of data on natural persons, the core registers of persons and the concept of domain-specific personal identifiers (bPK concept) have been the basis for eGovernment services at all administrative levels in Austria for 20 years. They enable a wide range of innovative solutions from different government departments and local authorities for citizens.

The concept of domain-specific personal identifiers ensures that data can be uniquely assigned to a natural person across all administrative domains. This is done in compliance with the highest standards of data protection. The lifelong unique personal identifier – derived from the core registers of persons – is created for each administrative domain and is valid only in that specific domain. When exchanging data between administrative domains, these identifiers may only be used in encrypted form, with only the respective administrative domain being able to decrypt its identifier to establish uniqueness.

CDO
GL Ing. Mag. Markus Popolari

“The use of AI will develop gradually, just like the use of any new technology in administration. Starting with simple use cases, highly innovative solutions are gradually implemented to secure investments in the long term.”

Based on the bPK concept, changes to a person’s master data can be distributed across administrative boundaries within

24 hours

Based on the bPK concept, changes to a person’s master data can be distributed across administrative boundaries within 24 hours – in compliance with the “need-to-know” principle. This means that only those areas that can match a record in their databases to their own decrypted identifier are able to query and keep up to date with changes to the person identified by that identifier.

Similarly, the latest innovations in eGovernment, digital proofs, are based on and enabled by the bPK concept. This is sustainable digital innovation for greater safety.

Federal Ministry
of Justice

Using AI to deliver justice more efficiently

Using artificial intelligence in the justice system speeds up research, saves time and improves quality for everyone involved. AI also makes the anonymisation of court decisions much easier.

AI tools turn the digital court file into a practical "research platform".

CDO
Mag. Martin Hackl, BSc

"A modern justice system needs intelligent digital assistants to support court proceedings. This is a consistent continuation of the move from a fully digital justice system 3.0 to a modern justice system 4.0."

Digital assistants in file management

The "Justice 3.0" strategic initiative and the associated working methods with fully digitally managed files form the basis for the use of digital assistants and supporting AI tools in judicial proceedings. This means that decision-making bodies at courts and public prosecutors' offices can benefit from digitally managed cases, both in terms of analysing the content of files and preparing for hearings and decisions.

In any digital justice file, an extension known as a "research platform" can be activated at any time. This automatically searches the documents in the file for legal citations and links them to the relevant references in the various legal databases. The tabular overview of all identified references in the document makes it easy to see what the legal argument of a brief is based on. In addition, references to legal standards can be easily researched by means of a list of the amendments that have been made.

The references linked to in the document can be viewed directly in the relevant databases with a single click. The search result can then be transferred to the file currently in use via an interface. This digital file management assistant greatly simplifies and speeds up research activities. This saves time and improves quality for everyone involved.

Anonymisation of court decisions

In order for a court decision to be published in the Legal Information System (RIS), personal data or information that would allow conclusions to be drawn about the case must be removed or pseudonymised. At the same time, however, it is crucial to ensure that the decision can still be traced after having been anonymised.

In order to achieve the highest quality anonymisation results, different technologies are combined in a proprietary solution to exploit their respective strengths and compensate for their weaknesses. In addition to natural language processing, rule, search and pattern-based approaches and lexicons are used to process the individual decisions in parallel. The sometimes divergent results of the individual processing steps are each assigned a confidence level. Finally, heuristics and a separate classification model are used to determine which anonymisations are ultimately applied. The resulting simplification is intended to create the basis for increased publication activity by the other courts, particularly in the area of decisions of the higher regional courts of last instance.

The experience gained in this project with regard to the assistive use of AI, the recognition of entities in documents and their extraction has laid the foundation for further developments. These range from automated categorisation and extraction of data on parties to proceedings from incoming documents to intelligent structuring options in the digital case file.

Federal Ministry
of Climate Action, Environment, Mobility, Innovation and Technology

Data rooms and AI as tools for climate action

Energy and mobility transition and the circular economy: during the reporting period, funding for green AI and the Green Data Hub played a central role in the initiatives of the Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) to build a green data economy

CDO
AL Ing. Joachim Tischler, MSc

"The data economy and knowledge commons promote climate protection."

Among other things, the use of data enables better policy design to address social, climate and environmental policy challenges. The BMK has been working on this issue for more than ten years and is pursuing the goal of establishing a data economy through various initiatives and funding programmes. The idea of a data ecosystem was born in 2014 with the "Conquering Data in Austria" roadmap. Another milestone was the launch of the Data Intelligence Offensive (DIO) in 2018. Two pioneering initiatives are the BMK funding programmes for green AI and the establishment of the Green Data Hub.

2014

was the year the idea of a data ecosystem was born, from which the Green Data Hub has emerged.

Green Data Hub – a data ecosystem

The Green Data Hub is a platform for Austrian and European stakeholders to build an ecosystem of data services for green and sustainable data. The activities of the Green Data Hub aim to kick-start the creation of a sustainable European data ecosystem that will enable the achievement of climate goals and the transformation of energy and mobility. In data spaces, business, science, citizens and administration can share data to generate added value. In line with the ecosystem concept, national and international links to other projects and data rooms are taken into account in the organisational and technical design of the use cases. The "Space4Energy" project, for example, addresses the problem of high greenhouse gas emissions from heating and cooling buildings. The project uses localised, high-resolution Earth observation data for thermal monitoring and exploration.

greendatahub.at

AI for Green for more energy efficiency

To promote the use of artificial intelligence in climate and environmental protection, the BMK launched the "AI for Green" funding initiative in 2021. A total of 22.5 million euros has been invested since 2021. The aim of this funding programme is to develop and advance AI technologies while contributing to our climate goals and protecting the environment, nature and species. The current projects are impressive examples of how AI can help tackle the climate crisis. For example, AI can support the development and optimisation of renewable energy systems by helping to control and adapt the generation, storage and distribution of electricity from renewable sources. AI can reduce energy consumption by predicting demand. In addition to the transformation of energy systems, the thematic focus of the now 40 projects was primarily on the circular economy and the transformation of mobility. The initiative will continue in 2024.

€ 22.5 million

have been invested in the "AI for Green" funding initiative since 2021.

Federal Ministry
of Arts, Culture, Civil Service
and Sport

A new data culture

Digitisation in the context of culture and ethics: The Federal Ministry of Arts, Culture, the Civil Service and Sport is promoting artificial intelligence and data both in further education and for new cultural infrastructures.

CDO
AL Mag. Florian Dohnal, MA

“Efforts to integrate digital literacy and ethical guidelines into public services are crucial to the development of innovative and sustainable solutions, and initiatives such as ‘Kulturpool’ demonstrate a commitment to using digital technologies to make cultural heritage accessible while improving the quality of public services. This reflects the goal of taking a leading role in the digital transformation.”

Guide to digital administration and ethics

The first version of the “Digital administration and ethics” guide supports all public service employees in dealing with artificial intelligence: This comprehensive brochure covers opportunities and challenges, ethical issues, technical principles and the legal framework. The practical guide was produced as part of the “Digital administration and ethics” project, which worked on this topic from June 2022 to May 2023. In addition, a seminar on “Digitisation and ethics – how to apply ethical principles in a digitised administration” was held at the Federal Academy of Public Administration (VAB). The seminar was held for the first time in October 2023. The latest version of the guide (expected to be published at the end of 2024) will take into account the national implementation of the European AI Act, further examples of practical application and feedback on the first version.

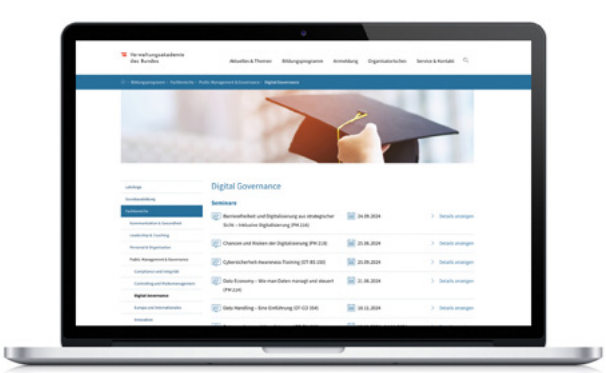
oeffentlicherdienst.gv.at/publikationen

Digital skills and AI in education and training

Public administrations face the challenge of actively shaping digital change and seizing the opportunities that digitisation offers. Digital skills are essential in this context. They enable staff to use digital technologies effectively, develop innovative solutions and improve the quality of public services. The course programme of the Federal Academy of Public Administration (VAB) aims to strengthen digital skills in public administration. In order to systematically promote the digital competence of civil servants, numerous seminars have been assigned to the Digital Competence Model for Austria (DigComp 2.3 AT). The model is based on the European Reference Framework for Digital Competences (DigComp) and describes individual competences in different areas of competence.

In order to take address the changes in the handling of data, the Federal Academy of Public Administration offers the School of Data Public Services (SoDPS) curriculum, a programme to help federal employees develop and deepen their relevant strategic skills. Artificial intelligence plays a central role in the SoDPS and is explored and discussed from a variety of perspectives as part of the diverse and ever-expanding curriculum.

vab.gv.at/bildungsprogramm



Kulturpool: Digital cultural heritage for all

The Kulturpool (Cultural Pool) platform makes digital cultural heritage accessible to everyone: Images, text, sound, video and 3D from cultural institutions across Austria are easily searchable and available for re-use. The Kulturpool also serves as a national competence centre and platform for the digital transformation/documentation of cultural heritage. The establishment of the Kulturpool and the national competence centre was funded by the EU's NextGenerationEU Recovery Plan and implements actions from the "Digital Cultural Heritage" strategy. There are currently around 1.1 million items in the Kulturpool. The comprehensive search allows users to browse the digital copies of images, text, sound, video and 3D objects held by the various institutions and to view associated information (e.g. title, artist, type of medium or subject).

kulturpool.at

Federal Ministry
of Agriculture, Forestry, Regions
and Water Management

Naturally artificial

The Ministry of Agriculture relies on smart data and artificial intelligence in many areas, ranging from flood management and improved grassland use to sustainable forest management.

CDO
SC Mag. DI DDr. Reinhard Mang

"AI offers enormous opportunities in the very specialised areas of the BML, and we are systematically taking advantage of them. This significantly simplifies and improves management tasks with consistent planning, implementation and continuous monitoring."

Flood risk monitoring with the help of artificial intelligence

"Artificial Intelligence for Comprehensive Flood Risk Monitoring" (KIHoRiMo) is a medium-term technology development programme that explores the potential applications of artificial intelligence for the comprehensive monitoring and analysis of flood events. The digital innovation projects initiated so far deal with both the gradual development of digital flood risk monitoring and the standardisation of information processes and geodata. The results of the individual development projects will be used to create an information and expert system that will provide all relevant stakeholders and users with a continuously updated picture of the flood situation. AI-supported methods are used throughout Austria to predict the resulting risk for all real, observable flood events in advance using appropriate scenario models and to analyse them after the event has occurred. This is useful for flood risk management, crisis and disaster management for administrations, authorities, emergency response organisations and affected people.

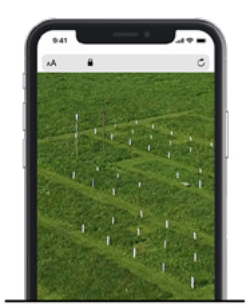
Test environment for innovative AI and robotics applications

As part of the "Digital Europe" programme, the EU has set up testing and experimentation facilities (TEF) for artificial intelligence and robotics to drive innovation in the agri-food sector (agrifood-tef.eu). Companies and start-ups can also test and validate their product developments under real conditions in Austria. A physical and digital test environment was created for this purpose. The aim is to develop tailor-made solutions for the Austrian agricultural and food industry. The resulting products and services will help address many of the challenges facing the agri-food sector, such as climate change, biodiversity, animal health, resource use and skills shortages.

Intelligent optimisation of grassland usage times

Two key criteria for evaluating grassland are yield and quality. Harvesting a crop at an early stage of growth results in less dry matter but better quality. As the plant population develops, the biomass increases, but the quality decreases. The time of harvest can therefore be used to control the relationship between yield and forage quality. The "SatGrass" (satellite-based modelling of grassland yield and quality dynamics) project, which was launched in 2021, aims to optimise the timing of grassland use and estimate grassland yield and quality from satellite data. This is done using satellite and weather data, as well as measurements on the ground.

Until now, yield and quality estimates have been based on extrapolation from random samples. The optical and radar satellites of Europe's Copernicus Earth Observation Programme allow for continuous, high-resolution monitoring of grassland cover and its use – and the use of artificial intelligence to derive relevant vegetation dynamics. At a local level, this provides an excellent basis for determining the best time to harvest a crop. As well as making an important contribution to overall agricultural accounting, "SatGrass" also supports the planning of climate adaptation concepts to deal with the consequences of climate change.



satgrass.at

Chemical signals optimised by artificial intelligence help detect tree diseases at an early stage.

A "digital nose" for healthier forests

Data is changing not only work and communication, but also environmental protection and nature conservation. The research project "Development of a 'digital nose' for the early detection of forest diseases" is funded by the Forest Fund of the Federal Ministry of Agriculture, Forestry, Regions and Water Management and is based in Wels. Here, agricultural engineers, computer scientists and biotechnologists are researching the development of a digital early warning system for tree diseases. This system is based on chemical signals, imperceptible to humans, that trees emit into the air to communicate with each other. These signals are picked up by pests that benefit from stressed trees. As in humans, stress weakens the immune system of trees, making them more susceptible to disease. Unfortunately, symptoms of the disease are often detected too late to prevent neighbouring trees from being infected.

Chemical signals in the air are detected by gas sensors and artificial intelligence is used for pattern recognition. Laboratory tests identify key signals for tree-pest interactions. This makes it possible to develop predictive models to identify potential diseases at an early stage and to implement early warning systems for tree diseases.

Federal Ministry
of Defence

Artificial intelligence with strategy

The Federal Ministry of Defence is making strategic use of artificial intelligence and is also pushing ahead with AI research. Specific areas of AI application range from improved cyber security to better use of resources in supplying soldiers.

Adapted deep learning models help detect malware in networks and devices.

The Federal Ministry of Defence's activities in the field of digitisation are based on sound strategic foundations. In addition to a digitisation strategy and a data strategy, the department also has an artificial intelligence strategy. This covers not only the technological aspects of AI, but also the interplay of organisational, human and rules-based measures to implement a targeted AI ecosystem in the ministry. Artificial intelligence is a clear priority for the ministry's leadership and also plays an important role in change management: the use of AI will be integrated into all development and evolutionary processes. Underpinning all activities is the department's vision for a human-centred, trustworthy and evidence-based application of artificial intelligence.

Artificial intelligence for better cybersecurity

Artificial intelligence is already being used in certain areas of cybersecurity. There are also pilot projects aimed at gaining experience and knowledge. In incident and malware analysis, AI helps identify anomalies in network and device behaviour that indicate an infection. Adaptive deep learning models are used for file classification, with a focus on embedded malware or other attack vectors. The project is based on in-house developments and open source libraries.

CDO
GenMjr Ing. Mag. Hermann Kaponig

“The use of AI will also make a significant contribution to effective mission fulfilment in military national defence in the future by generating new and innovative solutions based on existing data from a variety of fields.”

Artificial intelligence in defence research

Artificial intelligence is also defined as a strategic priority in defence research. With the current 2024 research programme, the ministry is for the first time pursuing the development of AI systems for specific use cases. One of three project plans is the introduction of “AI in regulation and terminology work (Large Language Model, generative AI)”. The project aims to make the process of creating and managing regulations more efficient and up to date, in order to compensate for the loss of knowledge and ensure high quality training for soldiers. The aim is to ensure the consistency of terms across hierarchical levels of documents, regulations, etc., while at the same time significantly improving the quality, efficiency and effectiveness of content creation and updating, as well as its derivation from higher-level documents. This project will demonstrate and evaluate, as part of a feasibility study and proof of concept, how AI solutions can be used to meet end-user requirements.

AI in kitchen management

Artificial intelligence is also used in kitchen management. The project is being carried out in collaboration with an Austrian company. Apart from classifying foods with hard-to-read names and matching them to the right recipe, the AI also recognises which dishes are particularly popular. Predictions can be made based on recognised patterns. Factors such as upcoming events or public holidays and even the weather can also be taken into account. Artificial intelligence sustainably helps kitchen management avoid overproduction and food waste.

Federal Ministry
of Social Affairs, Health, Care
and Consumer Protection

Better health through better data analysis

Targeted data analysis means better health for all of Austria. The Austrian health data analysis platform provides the basis for this.

CDO
SC[in] Mag.[a] Dr.[in] Brigitte Zarfl

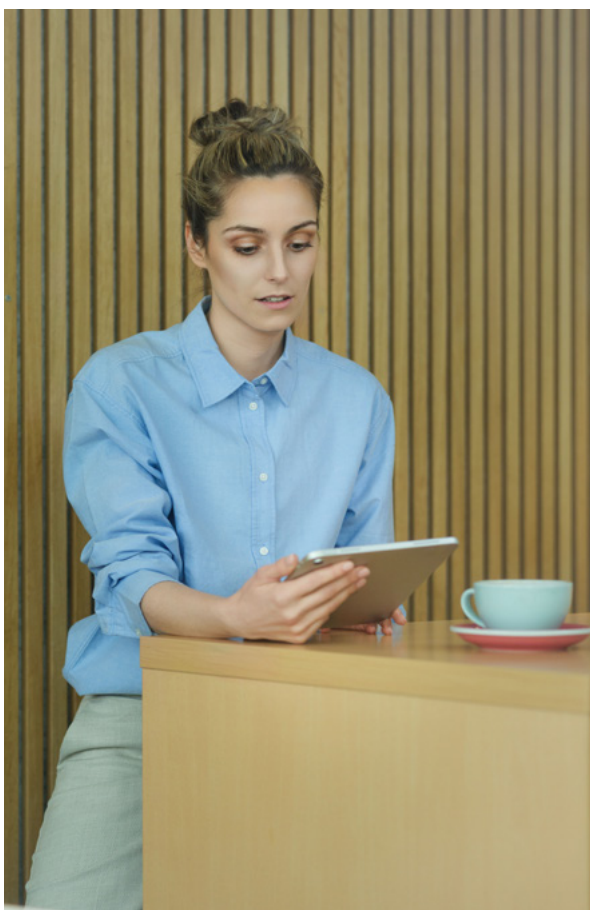
"The future high quality of our health services will be very much determined by how well we continue to develop the health care system as a whole as a learning organisation. The ability to analyse the available data in a targeted manner will make a significant contribution to achieving this goal. The credo of our actions must be to provide citizens and patients with optimal health care."

Data plays a special role in health care. The better they can be analysed, the better they can be used to improve health – from prevention and research to system control. Austria has laid the groundwork for this with the Agreement Implementation Act 2024 (Vereinbarungsumsetzungsgesetz, BGBl. I No. 191/2023) and the amendment to the Health Target Control Act (Gesundheits-Zielsteuerungsgesetz, G-ZG): On this basis, the federal government, the federal states and the state health insurance funds as well as the umbrella organisation of the social insurance institutions and the social insurance institutions affiliated to it can set up and operate a platform for the joint secondary use of data from the health care sector.

Thanks to the Agreement Implementation Act and the amendment to the Health Target Control Act, health data can be networked more efficiently in the future.

The pseudonymised primary data is used in detail by those responsible, including

- to manage the structure, organisation, quality and financing of Austrian health care,
- to evaluate health policy and public health activities,
- for work on the establishment, development, maintenance and evaluation of a comprehensive, cross-sector Austrian quality system,
- for the implementation, delivery and monitoring of partnership-based health goal management; and
- for the management of exceptional events such as pandemics and epidemics.



Fast and efficient response

The data analytics platform breaks down long-standing data silos. It also creates the opportunity to respond quickly and efficiently to unforeseen challenges for public health and the healthcare system.

Better prevention, targeted research

This is expected to lead to improved prevention and care for patients in the long term. Improved system management and research in the field of public health will be made possible by means of constructive analyses of pseudonymised primary data across all sectors. This makes it easier to identify patterns of disease and enables the creation of Austria-wide risk models. Public health interventions can then be implemented in a targeted manner.

Three evaluation methods are to be provided for the analyses. Standard evaluations can be analysed by authorised persons and made available to all stakeholders in the form of k-anonymised reports and/or dashboards. In addition, authorised persons can perform specific analyses in a secure data processing environment and directly access the pseudonymised primary data. Where the legal basis exists, export may also be carried out in pseudonymised form.

The data analytics platform makes it possible to respond quickly to unforeseen challenges in the healthcare system.

AI & data in the federal states

Selected projects
of the federal states


BURGEN
LAND

Responsible AI

Based on its digitisation strategy, Burgenland launched an “AI Guideline for employees” and the creation of a data classification policy in 2023. Autonomy in the face of non-transparent AI systems is a major concern in the field of education.

Director of the State Office Mag. Ronald Reiter, MA

AI Guideline for employees

The integration of artificial intelligence (AI) into public administration brings both opportunities and risks. Careful preparation is therefore required, taking into account not only the technical challenges but also the ethical, legal and social implications. By taking a holistic approach, the benefits of AI can be fully realised and potential risks minimised. With this in mind, the State of Burgenland is planning preparatory measures to enable the use of AI within a secure framework.

The AI Guideline will provide clear guidelines and standards for the development, implementation and use of artificial intelligence. The aim is to promote security, privacy, ethics and fairness, enable innovation, ensure compliance and build trust with citizens and partners. The AI Guideline aims to promote the development and use of artificial intelligence in a structured and responsible way. It also aims to develop the maturity of organisations from AI experimenters to AI starters.

More protection and less risk with a data classification policy

In light of constantly evolving technologies (AI, cloud), new legal frameworks (NIS2, Freedom of Information Act) and the increasing threat of unauthorised data disclosure and data breaches, it is crucial to establish a clear and consistent policy for classifying data and documents. The objectives of the policy include protecting sensitive information (privacy, information security), complying with laws, regulations and industry standards, reducing the risks associated with the storage, processing and transfer of data and documents, and increasing trust in organisations.

Integrating AI systems into education

In response to the rapid advances in artificial intelligence and its far-reaching implications for education, the State of Burgenland, together with the Private University College of Teacher Education Burgenland (Private Pädagogische Hochschule Burgenland, PPHB), took proactive measures at a very early stage. The aim of the initiative is to strengthen the education system in Burgenland and ensure autonomy from non-transparent AI systems. Central elements of this strategy are the development and operation of independent, customised AI systems that are developed at PPHB. These are designed to successfully address critical challenges such as bias and privacy issues, and to ensure educational equity.

The development and operation of these systems on local servers in Burgenland should enable fair learning environments and ensure compliance with the strictest data protection standards. By analysing the data generated during the operation of the AI systems, the AI system can be further developed and the use of AI in education can be better understood.


CARINTHIA

Local artificial intelligence

In 2023, the Carinthian state government prepared the introduction of local artificial intelligence (AI) in the state government offices, which is expected to bring significant benefits.

Director of the State Office Mag. Dr. Dieter Platzer, MAS

By analysing vast amounts of information and identifying patterns, AI makes it possible to streamline processes, predict outcomes and provide services to the public.

Benefits of a local solution

The challenge, however, is that the state government cannot simply use a cloud-based AI such as ChatGPT or Microsoft Copilot for data protection reasons. Carinthia therefore relies on a locally built "on-premises" solution. The introduction of on-premises AI at the offices of the Carinthian state government is beneficial for a number of reasons.

1 **Security and data protection:** An on-premises AI solution offers a higher level of security and privacy than cloud-based solutions.

2 **Confidentiality:** Government data is often highly sensitive and confidential, especially when used internally. The use of highly sensitive on-premises AI enables complete control over data and prevents potential data leakage or unauthorised access by third parties.

3 **Customised solutions:** An on-premises AI can be tailored specifically to the needs and requirements of the Carinthian state government. Customised solutions are created through in-house development and implementation.

4 **Faster reaction times:** With on-premises AI, the state government can respond more quickly to changing requirements and events. Because the infrastructure is managed in-house, updates, customisations or new knowledge can be implemented quickly.

5 **Long-term cost savings:** Although the upfront cost of deploying an on-premises AI solution is higher, it can save money in the long run. There are no expensive subscription fees.

Implementation in three phases

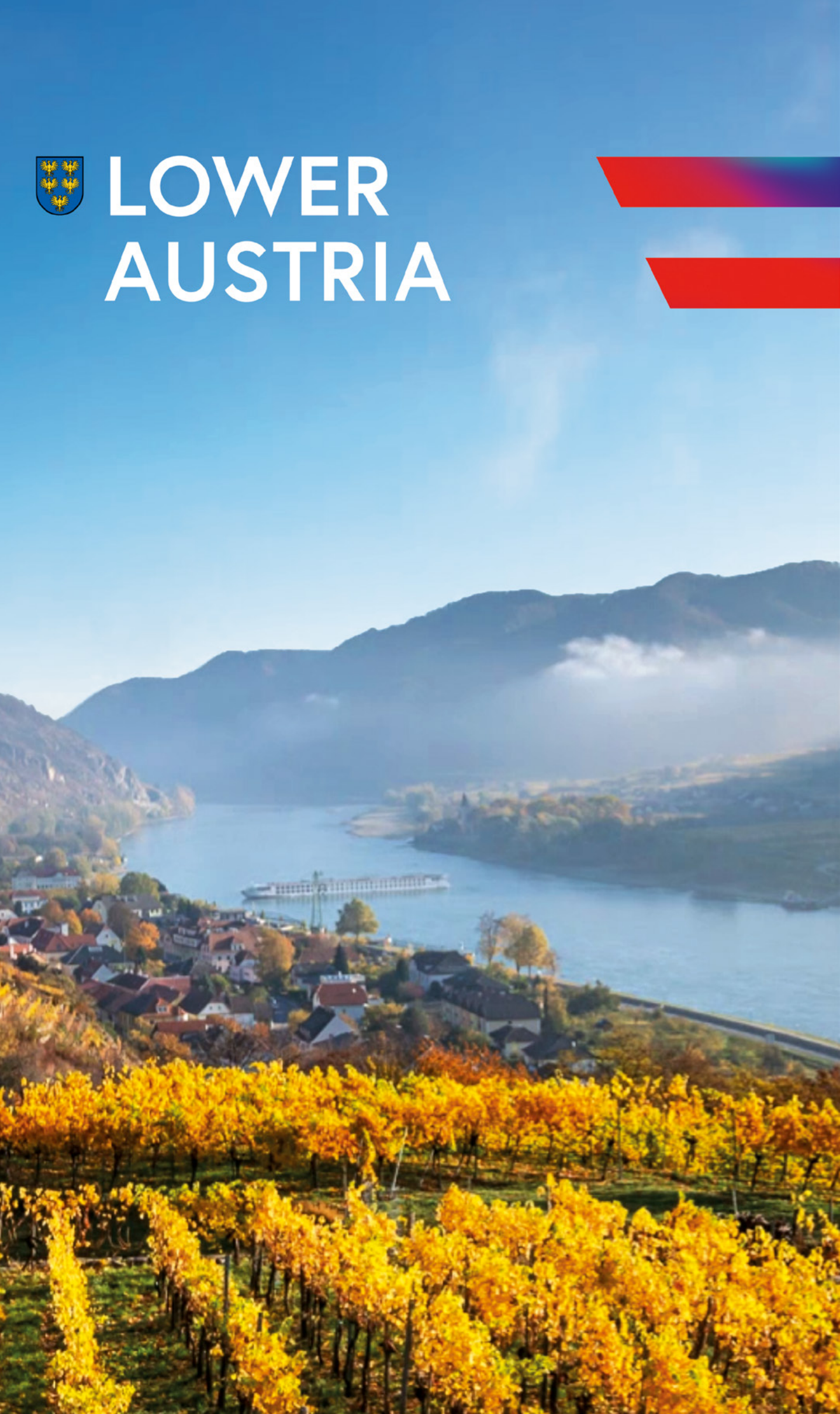
In the future, employees and everyone in Austria will be able to access the AI, which is fed with specialised information. Specifically, the implementation of local AI in the offices of the Carinthian state government will take place in three phases.

Phase 1, Q1/Q2 (already completed): This phase includes the introduction of an on-premises chatbot, similar to ChatGPT, for internal use by employees of the Carinthian state government.

Phase 2, Q3/Q4: This phase involves the training of state-specific information for internal AI-based queries and the active development of AI trained with Carinthia-specific data.

Phase 3, beginning 2025: The use of on-premises generative AI begins to automate processes.

LOWER AUSTRIA



More efficient, more innovative, and better

The use of artificial intelligence is bringing about a paradigm shift in Lower Austria's state administration. Lower Austria is building up strong AI expertise and implementing innovative projects.

Director of the State Office Mag. Werner Trock

Lower Austria's state administration has taken significant steps in recent months to harness the potential of artificial intelligence (AI) in various administrative areas. Through the strategic use of AI, Lower Austria seeks to increase the efficiency of public services, improve the quality of decision-making and develop innovative solutions for citizens.

Sharing knowledge and building AI expertise

A key element of this initiative is the exchange of knowledge and the development of AI skills through specialised events and seminars. This approach aims to deepen the understanding of AI and help identify potential uses in the administration. Key topics include data literacy, data quality and data management, which form the basis for the successful implementation of AI applications.

Innovative pilot projects

The state administration has launched several pilot projects that demonstrate the wide range of possible AI applications.

1 **Chatbot assistant for the citizens' office:** An AI-enabled prototype is being developed to support counselling activities. This project is an important step in gaining experience in the specialised use of chatbots.

2 **AI support for assessment activities:** As part of a market exploration phase, 23 submissions were reviewed with the aim of developing an AI-based text generator for spatial planning reports. The aim of the project is to build up expertise in the field of AI and to learn about its opportunities and challenges for automation.

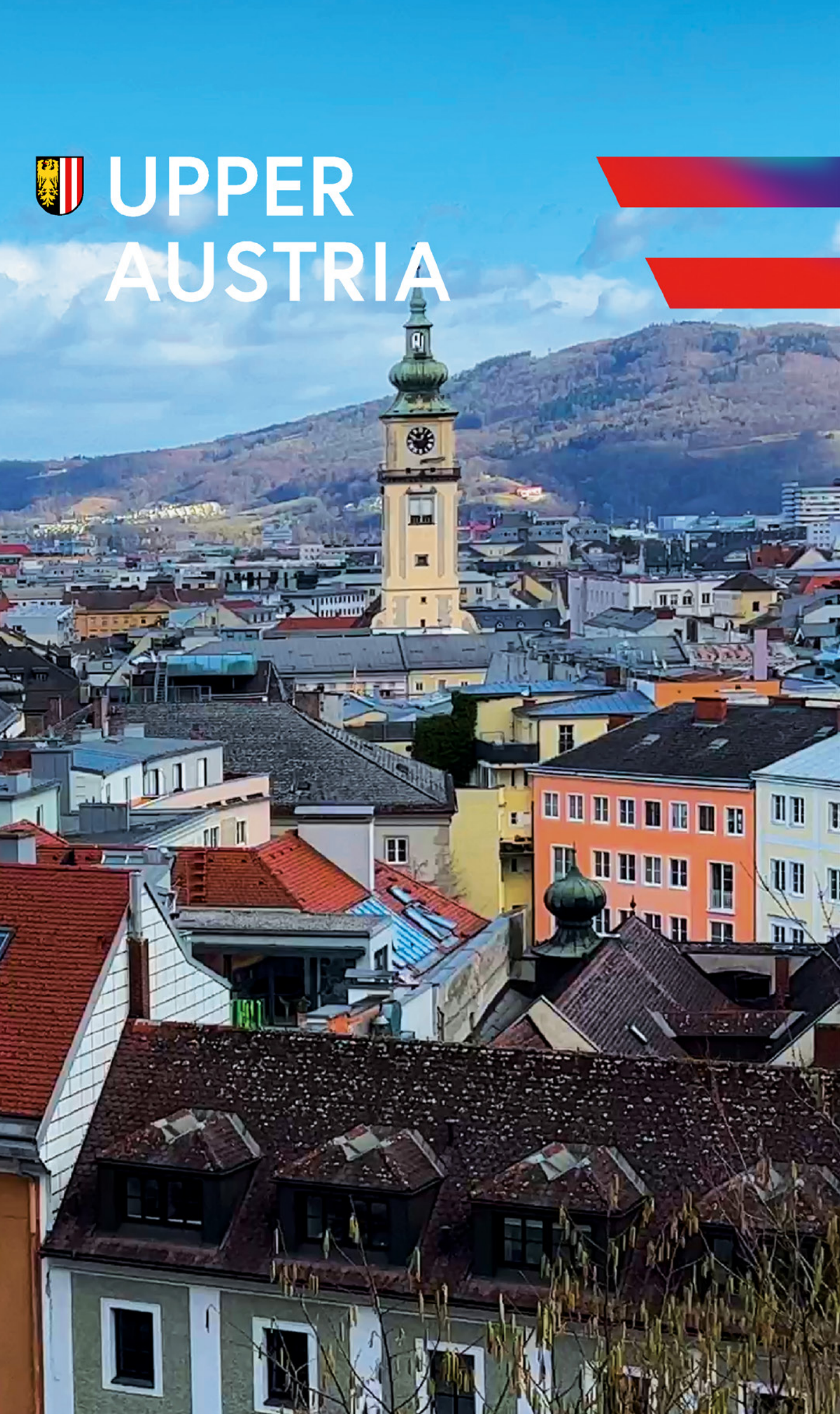
3 **AI-assisted road condition monitoring:** Road condition analysis using AI shows the potential for more objective and efficient condition monitoring. Variant analysis has resulted in a number of data collection and analysis methods that allow maintenance actions to be prioritised.

4 **ID checks in connection with subsidies:** An AI-based tool automatically checks the validity of the copy of the ID attached to the funding application in order to reduce the amount of manual checking required.

Leading the way with AI initiatives

Lower Austria's AI initiatives illustrate the state's commitment to being at the forefront of digital innovation. By systematically exploiting the potential of AI, Lower Austria aims to optimise its administrative processes and provide its citizens with forward-looking services.

UPPER AUSTRIA



Innovative and efficient

The State of Upper Austria is using artificial intelligence to improve efficiency and modernise its administration. Innovative solutions are tested in a targeted manner – and then brought into production and extended to other areas.

Director of the State Office Mag. Thomas Schäffer

Audit by the State Court of Auditors

An AI project at the Regional Court of Audit of Upper Austria aims to improve and increase the efficiency of analyses and audits of the financial statements of the State of Upper Austria. The project is nearing completion. The results of the project will be used to plan further action or use in other areas.

Anonymisation tool

An anonymisation tool is being tested for the State Administrative Court of Upper Austria. The application runs on the state's own infrastructure and has a Word plug-in that can be used to directly anonymise results prior to publication. The test phase will be completed by mid-2024. The next step will then be to determine whether the application can be used in production and, if so, whether it can be extended to other areas.

Legal consensus in plant procedures

Using a tool that scans paper contracts and notices and generates digital data, the Plant, Environmental and Water Law Department is digitising notices dating back to around 1960. These notices are still valid, but the content is not available in digital form. The tool scans existing notices, digitally records them using AI and links them to digitally available notices. A pilot phase of selected procedures and decisions will analyse feasibility in order to make sound plans for productive use.

Paper-based notices can be digitised and linked to digitally-available notices using AI.

SALZBURG

Data in motion

The State of Salzburg is setting data in motion in a number of different areas. This reduces the burden on administrations, businesses and citizens – and ensures efficiency and modern solutions. The range extends from tourism to health.

Director of the State office DDr. Sebastian Huber, MBA

Digital state tax office: 99.5 per cent digital submissions

The processing of Salzburg's tourism tax, with over 40,000 declarations per year as a service for tourism associations, was originally handled manually by external service providers using paper forms, payment slips and traditional enveloping of outgoing mail.

In order to optimise the quality of processing and improve the processing time of what was originally a manual process, the "DIAS: Digitales Abgabensystem" (Digital Tax System) project was launched to create an end-to-end digital solution. It offers a number of benefits, including

- automated requests instead of a form-based solution,
- integration into the Business Service Portal,
- integration into the booking system and
- dual dispatch.

With the successful implementation and deployment since March 2023, up to 99.5% of submissions are now digital. The result is a state-of-the-art solution for the state tax office in the Lungau region of Salzburg.

Digital vaccination system: Integration with ELGA

Until now, there has not been a complete record of all childhood immunisation data in ELGA or the e-vaccination record due to a lack of legal obligation. Vaccination registration and billing is done manually by doctors, which is labour-intensive and prone to error. In addition, there is currently no information available on vaccine stocks. The federal government has made it clear that the federal states themselves should make provisions for digital invoicing and the traceability of vaccine stocks, if necessary.

The aim of the "SALDIS concept project" is to design a new digital vaccination system. A concept has been developed for the creation of a new, legally tested system and process solution for vaccination that is recognised by all stakeholders, while of course complying with all legal requirements, in particular those relating to data protection. In this context, interfaces will be created with the existing electronic vaccination card system (ELGA) to enable direct settlement with doctors without the need for cumbersome individual invoicing.

Among other things, "SALDIS" enables the complete recording of all vaccination data for paediatric vaccinations.


STYRIA

Fast, safe, intelligent

Styria is demonstrating what can be achieved using AI and data, with an automated subsidy processing system and a new road deployment data information system.

Director of the State Office Mag. Brigitte Scherz-Schaar

The Housing and Heating Cost Subsidy Act (Wohn- und Heizkostenzuschussgesetz) provided the federal states with a special-purpose subsidy of EUR 450 million in 2023 to make a rapid and effective contribution to cushioning the rise in housing and heating costs. Styria has implemented this in two stages: In a first step, payments without application were made to recipients of housing assistance, social assistance and the heating subsidy of the State of Styria (about 40,300 recipients), followed by application-based payments to other households subject to an income limit (about 142,500 recipients). The fact that such a large number of cases could be handled without excessive checking routines is due to the high degree of automation in the implementation: This included automated queries via the central civil register or the transparency database as well as automated case processing using a workflow engine.

The concept of no-stop governance was realised in the first step on the basis of the available data. Applications for all other eligible persons could be submitted online 24 hours a day. The process was paperless from application to payment of the subsidy. Automated case processing resulted in a low error rate. The newly developed subsidy pre-system offers an end-to-end digital application and can be expanded for future subsidies from the State of Styria with little implementation effort.

Travelling safely

The STEDIS road deployment data information system was put into operation in 2023 to support the planning, control and documentation of winter road maintenance on Styrian state roads. The GPS position and operating data of 220 winter service vehicles and equipment (spreaders, ploughs, temperature sensors) are transmitted to a central server via integrated telematics units. Drivers can use an app on any mobile device in the vehicle to perform the journeys that need to be recorded and collect standardised entries. The app also complements digital radio as a communication tool (e.g. taking and sharing photos, routing). A web-based portal can be used to create clearing and gritting plans, manage operations and access analysis of deployment data and documentation.

The central element is a situation map that provides a real-time overview of the success or current situation of the winter road clearance service. Variable message signs, weather cameras, ice warning systems and grit management are also integrated. Additional benefits for road users include the automatic forwarding of incident reports such as road closures or mandatory use of snow chains to authorities, emergency services and evis.gv.at (real-time traffic information system for roads), as well as an online map showing current (winter-related) traffic obstructions in real time. The data provides the basis for monitoring the success of operations, serves as evidence in the event of legal proceedings in the area of road maintenance liability and provides the basis for increasing the efficiency and effectiveness of winter road maintenance operations.


TYROL

Frequency monitoring with neural networks

Director of the State Office Dr. Herbert Forster

The "Bergwelt Tirol – Miteinander erleben" (Tyrol's Mountain World – Experiencing it Together) programme develops concepts and measures aimed at the conflict-free use of Tyrol's natural environment. AI technology provides the frequency data needed to evaluate steering actions.

The high number of ascending ski tourers in the busy ski area of the Tyrolean ski resorts requires concepts for a peaceful and safe coexistence on the slopes. One of the aims of the "Tyrol's Mountain World – Experiencing it Together" initiative is therefore to set up ski tour guidance systems in ski resorts, so that skiers can reach their destination safely via a signposted ascent route without disturbing conventional ski operations.

In the past, manual counting was used to evaluate the guidance systems. However, this expensive and error-prone method only provided snapshots of the actual situation on the slopes. As part of a project, the forestry department of the Tyrolean State Government evaluated the possibility of using neural networks to monitor the frequency of ski tourers.

Number, position and posture are recorded

Methods for counting people range from simple infrared sensors and radar to optical sensors and cameras. However, the best way to differentiate between groups (e.g. skiers, tourers) as accurately as possible seemed to be to use cameras and AI technologies. The neural network SkiTourer-CNN (Convolutional Neural Network) developed as part of the project specialises in the recognition of skiers and tourers in camera images and videos. In order to provide high-quality information about the number of people descending and ascending, the neural network records not only the number of people detected, but also their position data (red rectangle) and posture information (green joint points).

Using these parameters, the AI can reliably distinguish between downhill and uphill skiers on slopes up to 70 metres wide and at distances of up to 100 metres.

Potential for improvement clearly identified

The women's run of the Axamer Lizum cable car was chosen as the counting point and the newly developed computer-controlled camera system was installed at the edge of the slope near the signposted ascent. With a counting accuracy of 95 per cent for touring skiers and 84 per cent for passing skiers, the system was able to register more than 40,000 ascending skiers and well over 350,000 descending skiers in the first winter. The evaluation of the use of the signposted ascent route showed clear potential for improvement in the positioning of the signs. This will be optimised accordingly in the coming seasons. It became clear that frequency detection using neural networks meant continuous, high quality measurements in real time, with low susceptibility to error and low effort. For this reason, the counting system developed will continue to be used to analyse and improve the guidance systems in Tyrol, and is already being used in a modified form to analyse the use of forest roads.


VOR
ARLBERG

Clear principles, successful implementation

Vorarlberg has laid a clear foundation for the use of artificial intelligence in the state administration – and is successfully implementing smart solutions in areas such as subsidies.

Director of the State Office Mag. Philipp Abbrederis

Artificial intelligence (AI) offers many potential applications – and also provides valuable assistance in performing official administrative tasks. With a decree on the use of AI in the Vorarlberg state administration, Vorarlberg has defined clear basic principles that all employees must observe when using AI tools in the course of their work. Of course, as with any internet or social media application, it is absolutely essential to ensure that sensitive or personal data (including image data) is handled in accordance with the law and that confidentiality is maintained.

The basic principles for using AI tools in an official capacity are as follows:

- AI-generated content is used for support, the responsibility for the content used lies with the human. Generated content is critically reviewed and checked for comprehensibility.
- As input for AI, no personal data (in accordance with GDPR) or information subject to official secrecy may be used.
- The use of AI tools must comply with applicable copyright and intellectual property laws.
- The use of AI-generated content must be transparently labelled.
- Fairness and non-discrimination must be guaranteed. AI tools must not promote discrimination or unfair treatment, and must be screened for bias and stereotypes.

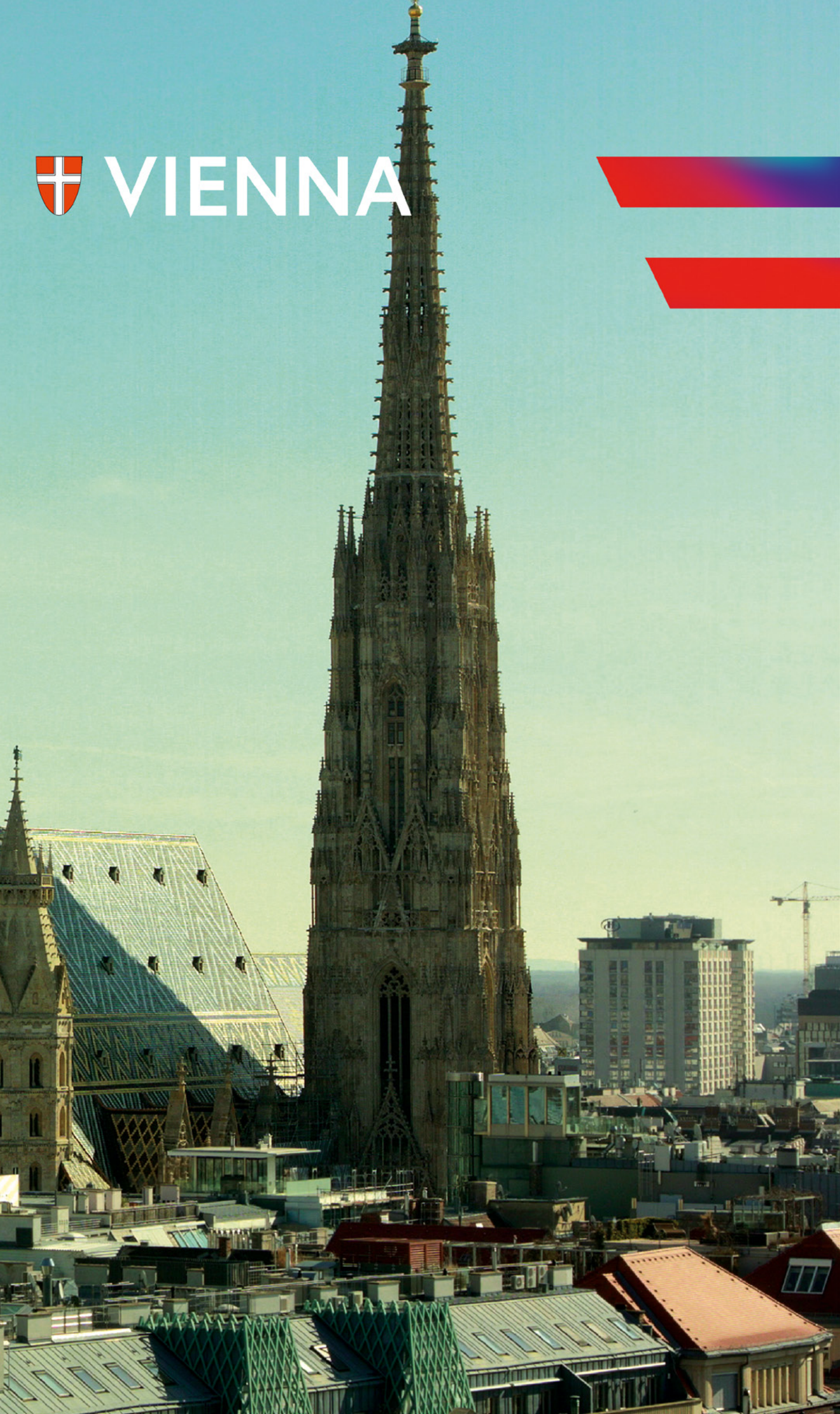
Smart processing of personnel cost subsidies

The digitisation of childcare subsidies in Vorarlberg allows for end-to-end digital and automated processing – from application at the municipality to payment by the Office of the State Government. Verification of eligibility and the calculation are automated and the subsidy can be paid out immediately upon approval.

The most important effects of the smart solution:

- The processing time from application to payment is significantly reduced.
- Secure data transmission is guaranteed.
- Sources of error are minimised.
- Process optimisation saves resources for both the applicant and the administration.
- Funding organisations receive detailed information on the calculation of the funding process for each facility.

The smart solution benefits childcare facilities as well as employees of the municipalities and the state administration.


VIENNA

Faster, cheaper, more effective

Artificial intelligence (AI) is being used in a variety of areas in Vienna – from building permit procedures to urban climate protection measures. An "AI Compass" defines rules for the use of generative AI in administration.

Director of the State Office Mag. Dietmar Griebler

The EU-funded research and development project "BRISE Vienna" was the first in the world to explore how building information modelling (BIM), artificial intelligence (AI) and augmented reality (AR) can be combined to create a comprehensive and end-to-end digital building approval process.

In February 2023, the pilot operation was completed with real building submissions. Valuable insights have been gained and are being discussed at conferences and in personal dialogue with representatives of other cities and regional authorities.

AI Compass

Existing knowledge, data and knowledge bases will become increasingly valuable sources of information in the future. The impending wave of retirements and the existing paper archives pose challenges for knowledge management. AI will make it possible to use these largely unstructured, analogue and possibly even handwritten documents. With the AI Compass of August 2023, the City of Vienna allows the use of generative AI subject to certain rules (e.g. data protection, copyright, labelling requirements).

Kappazunder and geoAI

Since 2017, Vienna has been conducting full-coverage mobile mapping surveys of public spaces using survey vehicles. In this project, millions of high-resolution images and point clouds from a laser scan are used to create a virtual image of Vienna. The data is used by the Viennese administration in the digital service "Kappazunder" to virtually "jump" anywhere in the entire area of Vienna and to create digital inspection reports and high-precision measurements or to preserve evidence, among other things.

digitales.wien.gv.at/projekt/kappazunder

The inspection data will also be used for artificial intelligence applications. To this end, Vienna is developing a geoAI framework for the automated recognition and precise localisation of data, such as traffic signs, road markings and other objects in public spaces. In 2023, the front-end was heavily developed to include an interactive viewer platform for annotation and quality control of geoAI detections.

Vienna Geospace Hub

The "Vienna Geospace Hub", which is being set up as part of the GeoDatKlim funding project, is optimising urban climate protection measures and administrative processes through the use of geospatial and satellite-based data. The "Vienna Geospace Hub" innovation lab serves as a central platform for the development and implementation of innovative approaches to climate change adaptation.

Examples of use cases include the detection and simulation of urban heat islands, the monitoring of water resources and green spaces, and the development of improved climate models. The project is funded by the BMK through the Austrian Research Promotion Agency (Österreichische Forschungsförderungsgesellschaft, FFG) as part of the funding initiative "Technologies and innovations for a climate-neutral city" and makes a significant contribution to green transformation and climate protection in urban regions.

Austrian
Association of Towns and Cities

AI eases the burden on local authorities

The Austrian Association of Towns and Cities supports the digital transformation to “smart cities” with strategic services, groundwork and digital services. Artificial intelligence will relieve local authorities of routine tasks.

Österreichischer Städtebund

7 out of 10

people will live in cities by 2050, according to a World Bank study.

The ongoing digitisation of public administration is a particular challenge for cities and municipalities as direct interfaces to citizens and businesses. The term “smart cities” is an umbrella term for a wide range of technology-based measures aimed at making life and coexistence in urban areas as comfortable and organised as possible, while at the same time being as energy-efficient and climate-friendly as possible. According to a World Bank study, seven out of ten people will live in cities by 2050. This trend is continuing unabated in Austria as well. Less than ten per cent of all Austrian municipalities – those with more than 5,000 inhabitants – are home to more than 50 per cent of the population.

As an organisation representing the interests of cities and larger municipalities, the Association of Austrian Towns and Cities supports the digital transformation to “smart cities” by actively participating in the cooperative, strategic development of a digital administration at federal, state and municipal level, but also by developing important foundations and establishing digital services itself.

1 Once-only principle in the municipal administration

Based on the European Commission's eGovernment strategy, in which "data once only" is anchored as one of several guiding principles, the federal government has taken an important step towards implementing the "once-only principle" by setting up a register and systems network (dadeX). This makes it possible for the first time to use data from citizens and businesses that is already stored in one of the many centralised registers, for procedures in strict compliance with data protection regulations – without requiring applicants to repeatedly submit their data.

The online form service amtsweg.gv.at, initiated by the Austrian Association of Towns and Municipalities and operated by IT-Kommunal as its IT service provider, provides towns and municipalities with state-specific, standardised, eGovernment and legally compliant online forms for their official procedures. In total, there are around 70,000 forms across all user communities.

As part of a cooperation between the Association of Towns and Cities and the Federal Chancellery initiated in 2023, the online forms will gradually be linked to the central registers, and data relevant to the application will be retrieved directly from the relevant register, if requested by the applicant. This not only makes the application process much easier and more convenient, but also reduces sources of error. Data quality is improved through the use of quality-assured register data.

2 The City of Graz's kindergarten funding programme is a flagship project

As a recent project by the City of Graz shows, intelligent digitisation of processes can save enormous resources for all parties involved: Previously, the calculation of kindergarten subsidies required an on-site appointment at the office to determine the amount of the subsidy on the basis of the parents' proof of income. This appointment is now no longer necessary thanks to a targeted register link – with around 12,000 applications per year, this is an incredible relief for parents and administration.

Austrian Association of Towns and Cities

Through a dialogue, an AI-powered assistant will guide applicants to the right online application as quickly as possible.

3 Central municipal citizen service portal with an AI-powered application assistant

Artificial intelligence already has the potential to relieve local authorities of routine tasks. Providing information on the wide range of municipal tasks, services and procedures – often bundled in a dedicated "citizen service centre" or "citizen hotline" – is one such routine activity.

To support cities and municipalities in the targeted use of AI technologies, the Austrian Association of Towns and Cities has commissioned a short study on the "Use of AI in municipal administration" and the test implementation of an AI-supported "application assistant" as a proof of concept. Through a dialogue, this assistant aims at guiding applicants to the right application as quickly as possible. The technological implementation has been chosen to ensure a multiplier effect, allowing multiple use by cities and municipalities with very little effort. This application assistant is embedded in a central municipal citizen service portal, which also bundles the online forms of the cities and municipalities centrally, making them easier for applicants to find and use.

4 Strong protection against cyber crime

The more digital technologies are used, the greater the potential for attacks by cyber criminals. Recent examples show that they do not shy away from the public sector and try to extort public funds through targeted disruptive actions. At the request of many cities and municipalities, the Austrian Association of Towns and Cities, in cooperation with the Head of the Department of Secure Information Systems at the Hagenberg University of Applied Sciences, has therefore developed two guidelines for a municipal self-assessment that are tailored to the needs of municipal administrations. The aim is to determine the individual status of information security and, where appropriate, NIS2 compliance, as part of a self-assessment or, optionally, a moderated assessment, in order to optimise cyber resilience on the basis of the knowledge gained.

5 "Digital transformation" hub

"In addition to its core tasks as an interest group, the Austrian Association of Towns and Cities has increasingly developed into a hub for digital issues in local government in recent years," summarises Secretary General Thomas Weninger. The spectrum ranges from pioneering approaches to new topics such as AI or IoT, to the technical preparation, implementation and operation of digital services based on legal requirements (whistleblower portal, IFG portal, etc.), to advice on sensitive issues such as the tension between freedom of information and data protection.

Austrian
Association of Municipalities

The right use of municipal data

In addition to broadband expansion and cyber security, the Austrian Association of Municipalities is increasingly focussing on artificial intelligence and data management. A data warehouse is to be set up to enable forward-looking handling of data at a municipal level.

Österreichischer Gemeindebund

Representing the interests of 2,082 Austrian municipalities, the Austrian Association of Municipalities deals intensively with issues relevant to the future of municipalities. Alongside other areas, such as broadband expansion or cyber security, the focus is increasingly shifting to artificial intelligence the data management that underpins it.

In 2022, the Digitisation Committee of the Austrian Association of Municipalities addressed the issue of data management for the first time. It was quickly agreed that it will be essential for future developments that the municipal level not only has its data in its own hands, but that it is also made available in a way that allows it to be used optimally (e.g. through appropriate interfaces). There was also a consensus that many potential uses for data cannot be fully assessed today, and that only the future will show the potential uses of optimally managed data.

Future-proof data preparation

For example, we can expect artificial intelligence to make our local government more efficient and targeted in the future. However, any AI application can only ever be as intelligent as the data that is fed into it. This is why it is important to get started as soon as possible on processing the wide range of data that municipalities collect and manage in a forward-looking way.

The Austrian Association of Municipalities is therefore pursuing the strategy of a data warehouse that will enable digital, future-oriented data handling at municipal level. Although this project is still in its infancy and there are many unanswered questions (mainly legal and organisational), an important process is underway and the final product could be a landmark for the future.

Active municipalities

In addition to the large-scale project of the Austrian Association of Municipalities, individual municipalities are already very actively involved in applying AI and managing data.

The municipality of Laab im Walde, for example, has been working on data management for several years under Mayor Peter Klar. Recognising that every municipality receives a huge amount of data from a wide range of sources and sensors, the question was how best to process and utilise this data. Important baseline requirements were identified, such as the need for a coordinated data aggregation and storage body at local authority level. Overall, this is a project that has shown innovative thinking and groundwork that can ultimately benefit the country as a whole.

Since 2023, ten Weinviertel municipalities have been using a chatbot embedded in the respective municipal website to answer citizens' questions.

Secretary General Dr. Walter Leiss

The digital flagship community of Kremsmünster has also embraced the topic of artificial intelligence. On behalf of the Upper Austrian Association of Municipalities, Head of Office Reinhard Haider organised a seminar for the municipalities of Upper Austria in cooperation with the Upper Austrian Institute for Economic Promotion (WIFI Oberösterreich), where employees learned more about the basics of artificial intelligence, from the data protection framework to the use of specific tools.

Ten Weinviertel municipalities (Herrnbaumgarten, Ebenthal, Ernstbrunn, Fallbach, Gaubitsch, Hausbrunn, Hauskirchen, Neudorf im Weinviertel, Niederleis, Schrattenberg, Stronsdorf, Sulz im Weinviertel, Ulrichskirchen-Schleinbach, Wilfersdorf and Wolkersdorf) show how artificial intelligence can make life in the municipalities easier at a low-threshold level. Since 2023, these municipalities have been using a chatbot embedded in the respective municipal website to answer citizens' questions.

Looking at developments in the field of data and AI, it is clear that the municipal level is leading the way, with individual municipalities emerging as real "innovation hubs" where innovative projects can be implemented on a small scale.

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LIST OF ABBREVIATIONS

AG	Working group
AI	Artificial Intelligence
AR	Augmented Reality
ASCII	American Standard Code for Information Interchange
BGBl	Federal Law Gazette
BIM	Building Information Modeling
bPK	Domain-specific personal identifier
BRZ	Bundesrechenzentrum GmbH (Federal Computing Centre)
BWB	Federal Competition Authority
CDO	Chief Digital Officer
CNN	Convolutional Neural Network
CSH	Complexity Science Hub
dadeX	Register- and System Network
DESI	Digital Economy and Society Index
DIAS	Digital Submission System
DIO	Data Intelligence Offensive
DKO	Digital Competence Campaign
EiB	ELAK im Bund – Electronically secure file
ELGA	Electronic health record
EVIS	Real-time traffic information system for roads
EY	Ernst & Young
FH	University of Applied Sciences
FFG	Austrian Research Promotion Agency
IFG	Freedom of Information Act
GPS	Global Positioning System
G-ZG	Health Target Control Act
IDR	Identity document register
ICT	Information and communication technology
IT	Information technology
AI	Artificial intelligence
KIHoRiMo	Artificial Intelligence for Comprehensive Flood Risk Monitoring
PPHB	University College of Teacher Education Burgenland
LLM	Large Language Model
NIS2	Freedom of Information Act
OECD	Organisation for Economic Cooperation and Development
RIS	Federal Legal Information System
RTR	Rundfunk und Telekom Regulierungs-GmbH (Regulatory Authority for Broadcasting and Telecommunications)
SoDPS	School of Data Public Services
STEDIS	Road deployment data information system
TEF	Agri-food testing and experimentation facilities
USP	Business Service Portal
VAB	Federal Academy of Public Administration
WIFI	Institute for Economic Development
WIFO	Austrian Institute of Economic Research