

Vienna leads the way.

Vienna's public services go digital.



Introduction

Dear reader,

Vienna is renowned the world over for its high quality of living. Communal public services such as water supply, waste collection, waste water management and public transport are key elements in making a city a coveted place to live.

Often, it is only in times of crisis that we fully appreciate the availability of such services, as the pandemic and the repercussions of the war on Ukraine have clearly shown.

Public services need to remain reliable, easily accessible, and affordable, even in our present era of digital change. The City of Vienna is committed to ensuring this for the long term. And in the spirit of Digital Humanism, any kind of technical innovation should put people front and centre.

However, digitalisation is also a key driver of development in public services and offers for all citizens. It holds a wealth of potential in terms of ongoing standardisation and innovation. Making public services for citizens and businesses available also in digital form opens up tremendous opportunities for innovation in existing processes as well as for new smart services that benefit all of society. Going digital frequently gives rise to new ideas or entirely novel products and services. This brochure showcases excellent examples of how open-minded Vienna's municipal departments and municipal service providers address digitalisation in their respective areas of responsibility, all the while working on the cutting edge of technology.

Mayor of Vienna,



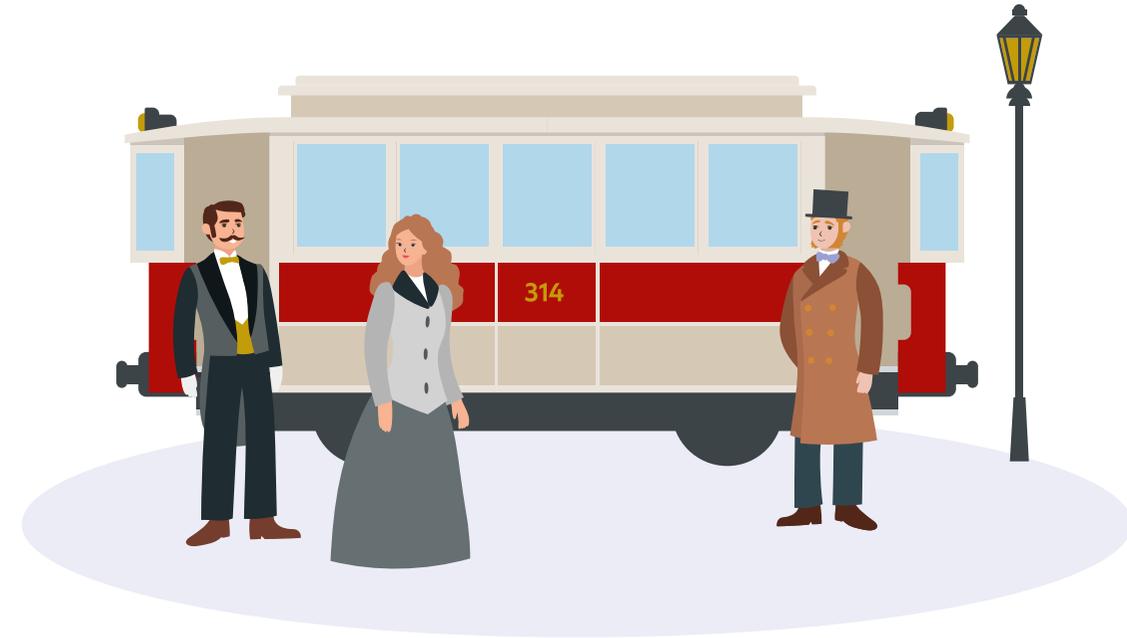
Michael Ludwig



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1. What is this brochure about?

The purpose of this brochure is to highlight the importance of, and the latest trends in, public services in the digital age. Digitalisation has by no means made public services less relevant for the population. Quite on the contrary, the targeted use of digitalisation results in an overall improvement in the quality of the services provided by municipal departments and municipal service providers.¹ This publication presents the current digitalisation framework for public services in general and showcases select municipal services, introducing projects, both large and small, from the broad range of public services offered by the Vienna City Administration. The key focus of the examples provided is on water supply, waste water management, waste disposal, and transport.²



2. The eventful history of public services in Vienna

As a municipality, Vienna looks back on a long history of providing public services. For decades, these services, whether called communal or municipal services or otherwise, have been meeting exacting standards of excellence. Key among them are water supply (Vienna Water – Municipal Department 31), waste water disposal (Vienna Waste Water Management), waste collection (Waste Management, Street Cleaning and Vehicle Fleet – Municipal Department 48) and local public transport (bus, tram, underground – Wiener Linien).

Such services being in excellent supply is by no means a natural state of affairs, but, quite on the contrary, the result of ongoing efforts

for ever more customer orientation, quality and efficiency, as well as staff qualification and motivation.

HOW IT ALL BEGAN ...

It was back in 1873 that then Emperor of Austria Francis Joseph inaugurated the First Vienna Mountain Spring Pipeline. What is today Municipal Department 31 (Vienna Water) dates back to the year 1902. In Vienna, efforts to dispose of waste water from households and commercial establishments as quickly as possible through underground pipe systems can be traced back to the Middle Ages. Vienna Waste Water Management,

¹ **Companies, enterprises and undertakings:** In Vienna, a multitude of services are being provided by different organisational units operating at varying levels of independence and autonomy, all of them subsumed under the umbrella term 'municipal service providers'.

There are outsourced organisational units, such as **companies** (e.g. Wiener Stadtwerke GmbH, which includes Wiener Linien, Vienna's transport service operator) and funds run by the Vienna City Administration (e.g. Vienna Social Fund [Fonds Soziales Wien – FSW] and Vienna Employment Promotion Fund [Wiener Arbeitnehmer*innenförderungsfonds – WAFF]). Companies and other outsourced organisational units of the Vienna City Administration are legal entities in their own right which are either partly or wholly owned by the City of Vienna. Each such organisational unit is assigned to one of the Administrative Groups of the Vienna City Administration. In addition, there are entities referred to as **enterprises**, which have a higher level of economic autonomy than municipal departments (Section 71 of the Vienna City Statutes [Wiener Stadtverfassung – WStV]). The most obvious indicator of such autonomy is the fact that the assets of such enterprises are managed separately from the other assets of the municipality and that they are being run in line with private-sector business management principles. Housing in Vienna [Stadt Wien – Wiener Wohnen], Vienna Hospital Association [Wiener Gesundheitsverbund] and Vienna Waste Water Management [Wien Kanal] are examples of such enterprises. In the case of municipal departments which, given their nature, would be eligible to be run as enterprises of their own, but have not been awarded this status, the City Council can resolve for them to be operated as **undertakings**. Currently, such undertakings include Municipal Departments 10 (Kindergartens), 31 (Vienna Water), 44 (Municipal Swimming Pools), 48 (Waste Management, Street Cleaning and Vehicle Fleet), 49 (Forestry and Agriculture) and 70 (Emergency Medical Services).

² As liberalisation efforts in the past had already placed a stronger focus on these areas, they have been selected to be featured prominently in this brochure.

an outsourced enterprise, originated from what used to be Municipal Department 30 (Sewer System). A dedicated municipal department in charge of waste disposal was likewise established already in the 19th century, giving rise, on 1 March 1946, to Municipal Department 48 (Waste Management, Street Cleaning and Vehicle Fleet). The precursors of today's local public transport system (underground, bus, tram) were what in Vienna were referred to as 'chair-bearers', a much sought-after means of transport within the city from as early as 1703. This was followed by horse-drawn carts and carriages. 1925 saw the first electric tramway taking up operations in Vienna. Some 50 years later, in 1978, Vienna's first underground line was publicly inaugurated.

HOW IT CONTINUED

The excellent public supply of essential everyday services to the population of Vienna has grown organically over the course of many years.

However, the 1990s saw a rise in sociopolitical criticism of the modern-day welfare state with its strong public sector. The neo-liberal spirit of the times and, not least, the European Commission postulated that the free market and private enterprise were better equipped to provide for the well-being of the people than the public sector.

Many European cities and municipalities followed this trend, privatising and liberalising their public services for years – often with negative consequences for service users, such as higher prices, reduced infrastructure upkeep and maintenance, and a higher risk of non-availability or even of accidents.

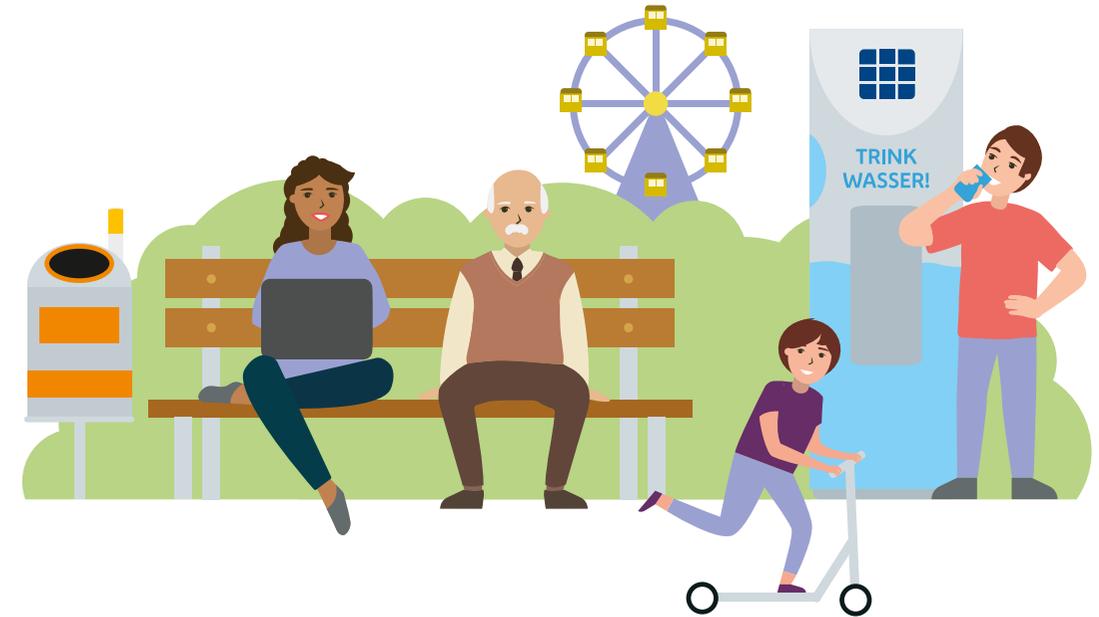
THE 'VIENNA MODEL' OF PUBLIC SERVICES

Amid the political dispute about what legal forms such services should take in the future, the Vienna City Administration remained firm in its conviction of being able to continue providing such services in the public interest and not having to resort to privatisation. Freedom of choice is a fundamental principle enshrined in the Austrian constitution and as such an important cornerstone of social cohesion. In the context of public services, this means that each city or municipality is free to choose the type of business organisation it wants to use to provide its public services with.

Vienna challenged the liberalisation of water supply and waste management initiated by the EU Commission, developing a whole set of arguments against it, and thereby made a successful contribution towards keeping the provision of such essential services firmly in the public domain.

Many cities which had opted to liberalise their public services had to suffer negative consequences. Privatisation efforts often gave rise to the phenomenon of 'cherry-picking', with private service providers focusing on the profitable parts of such services while neglecting the rest (for instance, in local public transport). As a result, many cities are today faced with the challenge of bringing these services back into the public sphere again (remunicipalisation).

Vienna has successfully chosen a different path in providing public services, deliberately relying on well-functioning partnerships with private businesses and on third-party contracting where expedient. The Vienna City Administration continues to be the contracting entity in charge, retaining both responsibility and knowledge in terms of how public services



are to be provided and what they should comprise. In this way, the know-how needed for each segment of such public services remains safely with the Vienna City Administration, without any risk of it being lost in the process.

Today, Vienna's efforts to keep public services within its own domain are paying off in many ways. These services remain the key foundations for the city's high quality of living, making Vienna a role model for cities throughout Europe and all over the world.

A STRONG PUBLIC SECTOR BENEFITS ALL

Experience has shown that a strong public services sector makes valuable

contributions towards a variety of goals – safeguarding the welfare state, fighting poverty, achieving equality between men and women, creating good jobs, strengthening the city's position as a business location, boosting value creation, protecting the climate, and allowing all people to participate in society.

The City of Vienna is set to continue along this path, making it a priority to maintain the high level of quality of public services available to all citizens at affordable prices and to ensure that this will stay this way in the future. With this aim in mind, the Vienna City Administration is striving for innovation in digital services to keep public services evolving along with the state of the art.



3. Digitalisation and the mandate to provide public services

NEW OPPORTUNITIES AND NEW CHALLENGES

Digitalisation, which is pervading all areas of life at an ever-faster pace, is one of the key sociopolitical issues we need to address in our time.

The European Commission is currently pursuing the goal of advancing digitalisation within Europe. This European-level agenda is also driving digitalisation in the public

sector, with many cities now being faced with new challenges alongside new opportunities.

RECENT DEVELOPMENTS IN VIENNA

Vienna aims to be a place where the digital solutions being developed and implemented provide benefits for people in a sustainable and inclusive manner. All the people living in Vienna, not just a section of them, are

supposed to profit from digital progress. Digital Humanism³ is the principle underlying all of Vienna's efforts in the field of digitalisation, all the more so when it comes to public services.

The interest of society as a whole in Vienna's municipal departments and municipal service providers offering certain services has remained unchanged. The Viennese firmly count on being supplied with water, having their garbage and waste water disposed of, and public transport running smoothly.

THE MANDATE TO PROVIDE PUBLIC SERVICES REMAINS UNCHANGED

The provision of public services in Vienna is governed by both statutory and contractual provisions. This is referred to as the mandate to provide public services, a mandate the municipal departments and municipal service providers fulfil for the population of Vienna. Digitalisation has not changed this mandate as such.

Digital technologies improve existing services and make them easier to access. However, if implemented correctly, they sometimes also come with new challenges. To ensure end-to-end supply and data security, the Vienna City Administration not only needs to have adequate infrastructure capacities on hand, both analogue and digital in nature, but must also comply with high legal standards of data protection.

IMPROVED SERVICES AND NEW OFFERS

Where offers are being digitalised, this must always entail a benefit in terms of better quality, improved efficiency, and easier access. Another aspect is to create new services for citizens and municipal units, and to streamline and optimise existing services. Digital solutions have the potential to make the work of municipal departments and municipal service providers easier and improve the services they provide. Examples would include using digital solutions to optimise workflows, making them more efficient and less resource-intensive for the staff in charge of handling them.

Digital service offers save customers time and effort because certain matters can be handled online and no longer require an in-person visit. Staff, too, can profit from this development, in some cases finding more time again to act in an advisory and customer service capacity. Accessible or barrier-free online forms allow persons with limited mobility more autonomy and are also beneficial for blind and visually impaired persons (think assistive technologies such as screen readers). The same applies to persons lacking adequate language skills, since they can have unknown terms and phrases translated directly in the web browser. Digital processes can lay the basis for increased transparency, making the steps in a process easier to understand and follow for both customers and staff. Digitalisation can help improve the quality of many services and products while at the same time allowing for entirely new services to be offered.

³ Digital Humanism describes the aspiration of shaping the process of digitalisation in such a way that people with all their social needs, at both individual and community level, come first in all relevant developments. To achieve this goal, it is necessary to design and implement digital technologies, products, and business models in a way to ensure that values such as inclusiveness, fairness, transparency, security and autonomy are being upheld.

4. Examples of digitalisation of public services in Vienna

LOST & FOUND: NEW SOFTWARE IN VIENNA'S LOST PROPERTY OFFICE

If you have lost something in Vienna, you can turn to the Lost Property Office, and with a bit of luck, you might find it there. Vienna's Lost Property Office is part of Municipal Department 48. With waste management, street cleaning and vehicle fleet management as its core tasks, this municipal department, whose short form, MA 48, is a household name in Vienna, is a key actor when it comes to providing municipal services.

Vienna's Lost Property Office handles the largest share of lost & found items throughout the whole of Austria. As a consequence, the Vienna City Administration took on a leading role in upgrading the existing tool used for processing found items. The project, which had been launched in November 2018 in collaboration with several Municipal District offices, was successfully taken live in June 2022. The new system has already proved able to significantly increase user friendliness for citizens, as well as operating efficiency for staff. The new software ensures transparency and verifiability in all processes, from acceptance to storage to the selling of uncollected items.

Municipal Department 48 is noticing a change in citizen's demand for services, with many Viennese nowadays expecting a wide range of information to be available online. With customer orientation at the top of its agenda, Municipal Department 48 is set on keeping its products aligned with popular demand also

going forward. It sees digitalisation as a tool that is able to help it to (even better) meet customer expectations.

DIGITALISATION IN WINTER ROAD MANAGEMENT SERVICES

In the wintertime, Municipal Department 48 needs to optimally schedule staff and road clearance vehicles to keep Vienna's streets and bike paths free of ice and snow. To provide optimised services, it is necessary to carefully plan ahead and avoid gaps in road clearing routes while also keeping drivers informed about which routes they need to attend to.

2022 saw the introduction of a new software for winter road clearance planning to replace the existing one, which had become outdated. The new software takes the planning of winter service routes to a new level based on GIP data. GIP or Graph Integration Platform is the intermodal geographical information system used by public administration bodies in Austria. The Vienna City Administration supplies updates to the system on an ongoing basis so changes in the transport network, diversions or road closures can be visualised in real time. Such data are made available for route planning purposes, allowing an immediate response to any changes observed.

In addition to generating traditional maps, the new application is also able to create

'roadbooks', which convert the route data into textual information. Drivers, who generally tend to be familiar with their routes, can thus opt to use a list to work with as an alternative to a map.

The next step, due out in 2023, is a purpose-built navigation system into which planners can feed routes as they create them. This will make it possible to reduce both journey times for specific routes and training time for new drivers unfamiliar with given routes, and, more importantly, to instantly communicate route changes to drivers.

RECYCLING GOES DIGITAL

The collection of lightweight packaging and recyclable glass is particularly prone to changes in tour schedules (i.e. the planned routes of waste collection vehicles). Collection intervals range from nearly every day to once a month, and some recycling banks are not easy to locate. This makes it a challenging task for collection teams to ensure that containers are reliably emptied in line with the given requirements (especially where vacation and sick leaves result in changing team compositions).

This is why Municipal Department 48 has decided to use GPS-assisted onboard

computers which provide guidance during a tour and can serve as a communication interface between control centre and vehicle. Off-the-shelf tablets equipped with a special app are used in combination with a high-performance GPS system.

Municipal Department 48 has now equipped all vehicles used for collecting lightweight packaging and recyclable glass with onboard computers.



SEWERS PATROLLED BY ROBOTS: HIGH-TECH CAMERAS MONITOR VIENNA'S SEWERS AND DETECT PROBLEMS

As an enterprise run by the Vienna City Administration, Vienna Waste Water Management is in charge of safely disposing of waste water and rainwater. The City of Vienna's sewer system is approximately 2,500 kilometres long, 675 kilometres of which are impassable – for humans, that is. To check these narrow sewers for damage, Vienna Waste Water Management now uses pan and tilt cameras and 3D pipe scanners. The high-resolution images they generate are evaluated directly on site, in a TV-equipped vehicle.

The team has five mobile TV stations at its disposal to continually monitor structural conditions. The recorded videos, 3D scans and electronically submitted expert and inspection reports are stored in the digital sewer information system and can be accessed by technicians at any time, as needed.

Monitoring the fabric of the sewer structures provides important data to inform decisions on repairs and investment.



DIGITAL SEWER MAP: VIENNA WASTE WATER MANAGEMENT'S FREE-OF-CHARGE GRAPHICAL INFORMATION SYSTEM

Vienna Waste Water Management has digitised the existing sewer maps, which used to be available only on paper, using them to create a digital system called KANIS, which now allows users to digitally consult maps of the Vienna sewer system, making work a lot easier for both staff and customers of Vienna Waste Water Management. Computer assistance speeds up the calculations of waste water flows in larger sewer clusters, allowing Vienna Waste Water Management staff to analyse, for example, the effects of different rain events on the sewer system or the impact newly built up areas will have on existing sewers.

But Viennese citizens, too, can access KANIS online, using this easy and convenient approach to obtain select items of digital information about Vienna's sewer system. This may come in handy when a new plot of land is to be linked up to the sewer system. Landowners or developers will then be able to obtain information themselves (in advance) without having to visit Vienna Waste Water Management in person to inspect the sewer maps. The data in KANIS comprise a wealth of information about the sewer system, such as diameter, length, gradient, ground elevation or the positioning of information and communication technology cabling. What is more, users can check whether or not it is allowed to discharge rain and storm water into a given sewer.

A BREATH OF FRESH AIR: DIGITALLY CONTROLLED COOLING INFRASTRUCTURE AND CITY OF VIENNA APP

In Vienna, we drink water straight from the tap without giving it a second thought, we use it to

prepare our meals and for our daily hygiene. Why can we do that? Because top-quality spring water from the Alps flows into Vienna through a pipeline following a natural gradient. Vienna's water has been travelling along the same route since 1873. Municipal Department 31 – Vienna Water is in charge of Vienna's water supply. The background work involved in safeguarding both the quality and the amount of water used in Vienna has changed. Digital processes are being employed now, both in internal applications hardly noticeable to outsiders and in digital services intended for consumers.

To help people stay cool in the summer, Vienna Water operates drinking fountains and mist cooling systems, which are – by popular vote and modelled on a favourite summer tippie – referred to as 'summer spritzers'. Many of these water features have a cooling mist function. On hot summer days, the fine spray of cooling mist makes for a beneficial microclimate and helps people in the vicinity stay cool, an effect similar to that experienced close to mountain waterfalls. Forming part of Vienna's Heat Action Plan, these cooling islands are equipped with solar powered remote controls.

Powered by decentralised PV modules, these remote controls enable Vienna Water, via an app, to monitor the equipment and adjust it to current weather conditions, ensuring the efficient operation of a total of 175 drinking fountains and mist cooling systems.

The City of Vienna or 'Stadt Wien' app helps users find the closest drinking fountain or water feature. A digital map shows where all drinking and cooling options – drinking fountains, historic fountains, mist cooling systems, parks with shade-giving trees, and



other water features – are located. The app can be downloaded for free from the Android and iOS app stores.

Being able to map all cooling options in one app requires several municipal departments to collaborate, sharing their relevant location data on the data.gv.at platform where the app obtains the latest information.

DIGITAL NOISE LOGGERS DETECT LEAKS IN THE WATER SUPPLY NETWORK

Municipal Department 31 – Vienna Water was among the very first to invest in setting up a geographical information system (GIS). Their software provides assistance for managing and maintaining the water pipe system and the related infrastructure. It interfaces with virtually all technical systems and facilities needed to ensure our water supply, allowing pumping stations, water storage facilities, valves and gates to be electronically controlled and monitored.

To check the pipe network for potential damage, Vienna Water relies on noise loggers.

These devices can be mounted on drinking water supply network fittings – either temporarily or permanently, depending on the strategy – to provide general-area monitoring. Usually, noise loggers are attached to elements that are installed below the road surface and are connected to the pipe system. At night, when there is less background noise caused by traffic, these noise loggers record noises in the pipe network. By evaluating the recorded data, it is possible to detect defects and identify their general location with relatively high accuracy. Further acoustics methods are then used to pinpoint the exact location of the leakage and repair the affected pipes.

Using digital technology to detect and locate leakages helps reduce water loss and avoid more serious pipe damage.

SELF-READING OF WATER METERS

In the past, annual water meter readings required residents to be present on site at a given date and time. Now, Vienna Water offers its customers the option to self-read their water meters and enter the readings on an Internet portal.

The only thing customers need to do is register for self-meter-reading with Vienna Water. When meter reading time comes around, Vienna Water sends customers a letter containing all the information they need to self-read the meter and correctly enter the data.

MOBILITY FOR ALL – WIENMOBIL PLATFORM



Wiener Linien is the operator of the largest transport network in Austria. A subsidiary of WIENER STADTWERKE GmbH, it is in charge of building and operating underground, bus and tram lines in Vienna, moving some two million passengers to their destinations every day.

The WienMobil platform offers citizens of Vienna as well as commuters and visitors a one-stop overview of all available modes of transport, including information on how to buy tickets or make bookings.

WienMobil aims to provide assistance to customers using the services of Wiener Linien and other mobility service providers throughout their journey, from planning their trip to buying their tickets to what awaits them at their destination. For this purpose, WienMobil has combined various multimodal mobility options in a single application.

In a future release, this phone app for multimodal mobility planning will also be available in a web version featuring a ticket shop. Access is easy and barrier-free and available from anywhere at any time.

Providing appropriate assistance to persons with disabilities (for example persons with visual impairments or mobility limitations) takes high priority for Wiener Linien. The new digital offer comes with relevant information and assistive features (for example, a screen reader) to make both planning and taking trips as smooth and convenient an experience as possible for everybody.

EASY-TO-USE STAFF TICKETS: TICKET4WORK

The Ticket4Work app is a project conducted by Wiener Linien which was still at the pilot stage at the time of publication.



Its purpose is to provide an easy way for the staff of various businesses to purchase tickets for business trips. Staff members will be able to obtain digital one-trip or one-day tickets for public transport in Vienna without having to pay for such tickets themselves.

Billing will be handled directly with the respective businesses at the end of the month. Businesses will receive an invoice directly from Wiener Linien, saving staff the administrative effort involved in accounting for their trips.

There are plans to integrate the Ticket4Work app in the WienMobil app in the future, to provide a one-stop solution for all types of passengers.

First conclusions

- Digitalisation has not changed anything about the mandate to provide public services, which Vienna's municipal departments and municipal service providers have to fulfil.
- In many cases, digitalisation gives rise to new services and offers and improves existing municipal services.
- Data are the backbone of innovation and better services.
- Digitalisation makes it easier for citizens and businesses to access existing services, allowing offers to be optimised. There is a chance that entirely new services able to better meet the expectations and demands of society will be developed.
- Digitalisation makes communicating and sharing information with the public easier.
- Digitalisation can help to make service provision more sustainable and climate-friendly.



5. The Digital Single Market presents new challenges

Digital business and trade activities do not stop at national borders. This is why the European Commission is forging ahead with a single European market strategy also in the digital area. The goal is to ensure that companies will be able to offer products and services throughout the EU in conformity with common rules and standards. Another aim is to ensure that digitalisation will serve humankind and the environment and contribute to achieving climate neutrality in Europe by 2050. Vienna has set itself an even

more ambitious goal in its Climate Guide, a roadmap until 2040.

Advancing Europe's technological sovereignty, which begins with the resilience of data infrastructures, networks, and communications, is another objective. Technological development should put people first, a tenet that applies throughout all efforts for a European data strategy. The European Commission intends to defend and promote European values and rights also in the digital sphere.

Ambitious goals, without a doubt. Many of these projects come under the umbrella of the European Commission's "A Europe fit for the digital age" strategy.

Against this backdrop, the European Commission has launched a number of EU (legislative) initiatives.

The topics most important to Vienna in this context are

- shaping Europe's digital future,
- artificial intelligence (more specifically, the European Commission's AI strategy),
- the European data strategy,
- digital services,
- network and information security (NIS Directive), and
- critical infrastructure resilience.

DATA ARE THE BACKBONE OF INNOVATION

Data constitute the stable, long-term core of the Vienna City Administration's information management efforts, while at the same time raising the city's digital IQ. Data are the building blocks of information and knowledge and a key production factor for a smart, intelligent, and digital city.

Improving services, processes and planning requires data. The amount of data being handled is growing dramatically, also in the public services sector. A **prudent approach**

to handling such data is essential as they may not only relate to persons living in Vienna, but also to the city's **critical infrastructure** (such as water supply, sewer system, transport, waste management, etc.)

This comes with both, new challenges and new opportunities. Data Excellence (DX) is an umbrella term for all the measures taken to maximise the value of data over the long term.

The guiding principles of the City of Vienna's DX strategy take future developments at EU level into account.

Key focal points for the European Commission include the creation of common European data spaces and the European data strategy, which aims to create a Digital Single Market. Once more, the goal here is to share as much data as possible from different fields (both economic and societal) and make data available for use by the public. This also concerns Vienna's municipal departments and municipal service providers.

The following EU legislative initiatives are particularly important in this context:

- Directive on open data and the re-use of public sector information (Open Data Directive, formerly PSI Directive⁴).
- Closely linked to it is the implementing regulation⁵ on high-value datasets. In its Annex, the European Commission lists the public sector information falling within its scope.

⁴ Public Sector Information Directive

⁵ An implementing act lays down uniform rules to ensure implementation of EU regulations. While implementing acts are adopted by the European Commission, they still require prior consultation of a committee consisting of Member States' representatives. In contrast to the procedure for delegated acts, the European Parliament may raise objections against an implementing act, but cannot revoke it.

The Open Data or PSI Directive, which governs the reuse of public sector data and establishes EU-wide minimum rules, introduced the concept of high-value datasets. According to the definition provided by the European Commission, high-value datasets are documents that have important benefits for society, the environment, and the economy. The Annex to the Directive lists the public sector information falling within its scope. The thematic categories of high-value datasets are geospatial, earth observation and environment, meteorological, statistics, companies and company ownership, and mobility.

EUROPEAN DATA LEGISLATION

The principle of data being 'open by default' is essentially aligned with the mandate of public administration. Under this principle, all results of public administration activity must ultimately be accessible to the public, not least as such activity is publicly funded. Exemptions from this rule apply only in exceptional circumstances, for example where national security could be compromised. The same principle underlies the EU Open Data Directive. Public institutions are therefore called upon to incorporate this principle in their strategies.

The Vienna City Administration had included the 'open by default' system in its Data Excellence Strategy already in 2019 and then upped the ante by introducing the 'open by design' principle in 2023. Open by design means that the requirements for the publication of open data will be taken into account already at the design

stage of a project or product, ensuring that publication will be well planned, systematic, automated and secure.

The European Data Governance Act seeks to increase trust in data sharing, to strengthen mechanisms to increase data availability and to overcome technical obstacles to the reuse of data. The Data Governance Act is also meant to support the set-up and development of common European data spaces in strategic domains, involving both private and public players, in sectors such as health, environment, energy, agriculture, mobility, finance, manufacturing, public administration and skills.

The proposal for a regulation on harmonised rules on fair access to and use of data (Data Act) seeks to make more data available for use and to set up rules on who can use and access which data for which purposes across all economic sectors. The new rules are expected to address the legal, economic, and technical issues that lead to data being underused.

After the Data Governance Act, the proposed regulation for a European Data Act is the second major legislative initiative proposed by the European Commission in following up on the European data strategy.

The Vienna City Administration needs to monitor and analyse all EU legislative initiatives also from a public-services perspective to be able to respond appropriately and to take an early stand in the interest of the city and its inhabitants.



6. Conclusions and outlook

Preparatory work on this brochure involved consultations with Municipal Department 31 – Vienna Water, Municipal Department 48 – Waste Management, Street Cleaning and Vehicle Fleet, Vienna Waste Water Management, and Wiener Linien.

These consultations showed that Vienna's public sector is using digitalisation both to improve existing services and to develop entirely new services and products for the citizens of Vienna. In doing so, the municipal departments and municipal service providers pro-actively embrace new options in their day-to-day work. Relying on a wealth of expertise and longstanding experience, they are best placed to judge where exactly digital solutions will be able to add value in their respective fields.

They are all well prepared for the (digital) developments of the future, which makes them attractive employers, for open-minded technology aficionados as much as for experienced and specialised skilled workers.

DATA SOVEREIGNTY AND PROTECTION OF SENSITIVE CRITICAL INFRASTRUCTURE DATA

Data constitute the basis both for planning and improving applications and services and for (re)designing processes.

Data sovereignty refers to the objective that the data needed to make informed and autonomous decisions can be used by data consumers under clearly defined

conditions and that the misuse of data by unauthorised third parties will be prevented or stopped.

When it comes to public services, some of the data relate to **critical infrastructure**, such as information on the set-up of the drinking water supply network, transport infrastructure or power supply hubs. Government bodies and public service providers must have suitable systems in place to provide adequate protection when collecting, storing, processing, and using such data within their sphere of responsibility. Careful handling of such data is all the more important as the Vienna City Administration is responsible for ensuring the supply of all citizens with basic services also going forward. For this reason, the **protection of critical infrastructure** must be **factored in also in all of the above data initiatives at EU level**.

SOCIAL RESPONSIBILITY

The Vienna City Administration promotes technological development paired with social responsibility. This is the guiding principle underlying Vienna's efforts for digitalisation in public services. The primary focus of digital development should be on what customers and staff need, and the relevant bodies must take a pro-active role in shaping the framework for digitalisation accordingly. Vienna's municipal departments and municipal service providers regard this challenge as an opportunity to promote human-centred innovation. Their aim is to develop and use digital solutions that provide benefits for people in a sustainable and inclusive manner, true to the tenets of the Vienna Digital Humanism approach.

The values embodied in Digital Humanism are key elements of the strategies developed by the Vienna City Administration, such as Vienna's Smart Climate City Strategy or the Digital Agenda. Vienna strives to position itself not only as an internationally recognised smart city and digitalisation hub, but also as a centre of Digital Humanism.

A NEW REGULATORY FRAMEWORK

Vienna's municipal departments and municipal service providers embrace this approach by seeing digitalisation as a tool meant to help people better cope with their day-to-day needs. Digitalisation is not an end in itself; its purpose and usefulness need to be continually scrutinised. What is more, all the people in Vienna are to be able to (continue to) use the services offered by public service providers. What this implies, for instance, is that there will have to be conventional, non-digital ways to communicate with the Vienna City Administration available also going forward.

The fact that more and more aspects of digitalisation are pervading nearly all areas of life gives rise to new questions the Vienna City Administration needs to address, such as whether certain new infrastructures or services require new regulatory frameworks to achieve the desired positive effects of digitalisation in the public interest. In some cases, decisions will have to be made – as was done in the past – on whether the public sector should, in the future, take on the responsibility for providing certain newly evolving services itself. This interesting question is being debated by the scientific community under the heading of digital general interest services. The authors

of this brochure are certain that this issue will become even more significant in the future.

VIENNA REMAINS TRUE TO ITSELF

Excellent public services will remain the cornerstones of the high quality of living in Vienna. Digitalisation will change nothing about that. On the contrary, it will help modernise and improve such services where it makes sense to apply it.

As the examples above demonstrate, digitalisation will in many cases improve service quality for customers, as well as raising staff satisfaction due to the technological support they receive in fulfilling their core tasks. When it comes to digitalisation, Vienna persistently advocates having a regulatory framework in place to ensure that public services will be reliably provided to all citizens also going forward and that the positive aspects of digitalisation will be used in the best interest of the public.



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Municipal Department 27 – European Affairs
Friedrich-Schmidt-Platz 3, 1082 Vienna
eu-post.wien@ma27.wien.gv.at
Vienna City Administration
Chief Executive Office, Office of the Director for Science, Research & Business Location
Auerspergstraße 15/52, 1080 Vienna
bl-wfw@mdgb.wien.gv.at

Contributors / Editing

MA 27 – European Affairs: Daniela Frohofer, Paul Grohmann, Karin Mathé, Martin Pospischill
Chief Executive Office, Office of the Director for Science, Research & Business Location:
Franz Oberndorfer, Svenja Schroeder, Elke Zinner-Wögerbauer

Contributors from the municipal departments and municipal service providers

Chief Executive Office, Executive Group for Organisation and Security – ICT Strategy and Process Management Group: Sandra Heissenberger, Klemens Himpele, Brigitte Lutz, Alexandra Prinz, Thomas Schuhböck
Municipal Department 48 – Waste Management, Street Cleaning and Vehicle Fleet:
Martina Ableidinger, Michael Karl Burggraf, Josef Thon
Wiener Linien: Martin Gugler, Anja Preis, Katharina Rehling, Stefanie Schindler, Siegfried Trybek
Municipal Department 31 – Vienna Water: Martina Baier, Theresa Dienstl, Wolfgang Gruber, Paul Hellmeier, Walter Kubicka, Astrid Rompolt
Vienna Waste Water Management: Josef Gottschall, Stefan Holper, Andreas Ilmer, Felix Rupp, Tania Salat

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