vienna
business
agency

A service offered by
the City of Vienna

E-Government

Technology Report

Vienna, January 2017

Introduction

Dear Readers,

Vienna is among the top 5 ICT metropolises in Europe. Around 5,800 ICT enterprises generate sales here of around 20 billion euros annually. The approximately 8,900 national and international ICT companies in the "Vienna Region" (Vienna, Lower Austria and Burgenland) are responsible for roughly two thirds of the total turnover of the ICT sector in Austria.

According to various studies, Vienna scores especially strongly in innovative power, comprehensive support for start-ups, and a strong focus on sustainability. Vienna also occupies the top positions in multiple "Smart City" rankings. This location is also appealing due to its research- and technology-friendly climate, its geographical and cultural vicinity to the growth markets in the East, the high quality of its infrastructure and education system, and last but not least the best quality of life worldwide.

In order to make optimal use of this location's potential, the Vienna Business Agency functions as an information and cooperation platform for Viennese technology developers. It networks enterprises with development partners and leading economic, scientific and municipal administrative customers, and supports the Viennese enterprises with targeted monetary funding and a variety of consulting and service offerings.

Support in this area is also provided by the technology platform of the Vienna Business Agency. At technologieplattform.wirtschaftsagentur.at, Vienna businesses and institutions from the field of technology can present their innovative products, services and prototypes as well as their research expertise, and find development partners and pilot customers.

This technology report provides an overview of the various trends and developments in the field of E-Government, as well as current data and facts for the Vienna location.

Your Vienna Business Agency team

Contents

1 Digital Administration

The trend towards a digital life and work-world does not stop short at administration. Offices and authorities are increasingly dependent on information technology. The objectives are clear: E-government is to make public administration more transparent and more efficient, increase the participation of citizens, and facilitate communication with the business community. Implementation has been quite successful in Austria. The country has been considered a pioneer in the field of electronic administration for many years.

Meanwhile, the problem concerning lack of interest from citizens in the more moderately exciting applications is now less of an issue. However, the lack of awareness of services is still the main barrier to a more intensive use of E-Government. Because, apart from sites such HELP.gv.at, which has been offering online services since 2001 based on the "one-stop" principle, many digital services have remained unutilized in the past.

But the trend is now headed in the right direction. The digital (mobile) signature service is experiencing enormous growth rates and the number of offers is constantly increasing. Security and data protection have top priority, and the foundation for an effective E-Government exists. The goal in Austria is a "Republic 2.0" in the E-Government area in which citizens have the right to handle government-related business through online services. After all, modern administration has also become a location factor for businesses and citizens.

1.1 Austria at the Top Internationally

Austria attained first place in the EU benchmarking in 2006, 2007, 2009 and 2010 and was "European champion in E-Government," so to speak. Although overall European rankings were no longer kept, in the following years, the country has retained a top spot.

According to the "E-Government Monitor 2015[1]", Austria is on the second place compared to Germany, Switzerland and Sweden regarding the use of E-Government. The number of citizens who have used online services in 2015 increased, according to the survey to 73 percent, from 72 percent the year before. Sweden is on the top with 75 percent, followed by Austria with 73 percent, Switzerland with 69 percent and Germany with 39 percent.

Satisfaction with existing services is 69 percent in Austria and still relatively high. However, the study authors noted a slight decline, in Austria from 69 to 63 percent, in Germany from 53 to 52 percent and in Sweden from 70 to 67 percent. Only for the Swiss, however, the satisfaction rate increased from 83 to 87 percent.

1.2 E-Government Benchmark

In the E-Government Benchmark 2015[2], in which the 33 countries (EU28 plus Iceland, Norway, Serbia, Switzerland and Turkey) participated, Austria is also well above the European average. For indicators "Transparency" and "Key Enablers" Austria attained a rank among the top five countries. In "User Centricity" Austria was placed in the upper third. The local results were above average for the indicator "Business Mobility"; only "Citizen Mobility" needs optimization. The main problem here is the long journey through the administration if you move to a different location.

---

[1] Representative Study by Initiative D21 and ipima, carried out by TNS Infratest, 1,000 surveyed in Germany, 1,001 surveyed in Austria, 1,001 surveyed in Switzerland and 1,019 1,000 surveyed in Sweden. http://www.egovernment-monitor.de/e-government.html
[2] 11. Two mystery shoppers per member state have studied four life situations and five central key technologies for the "Government Benchmark Report" (SMART 2013 / 0053-3).
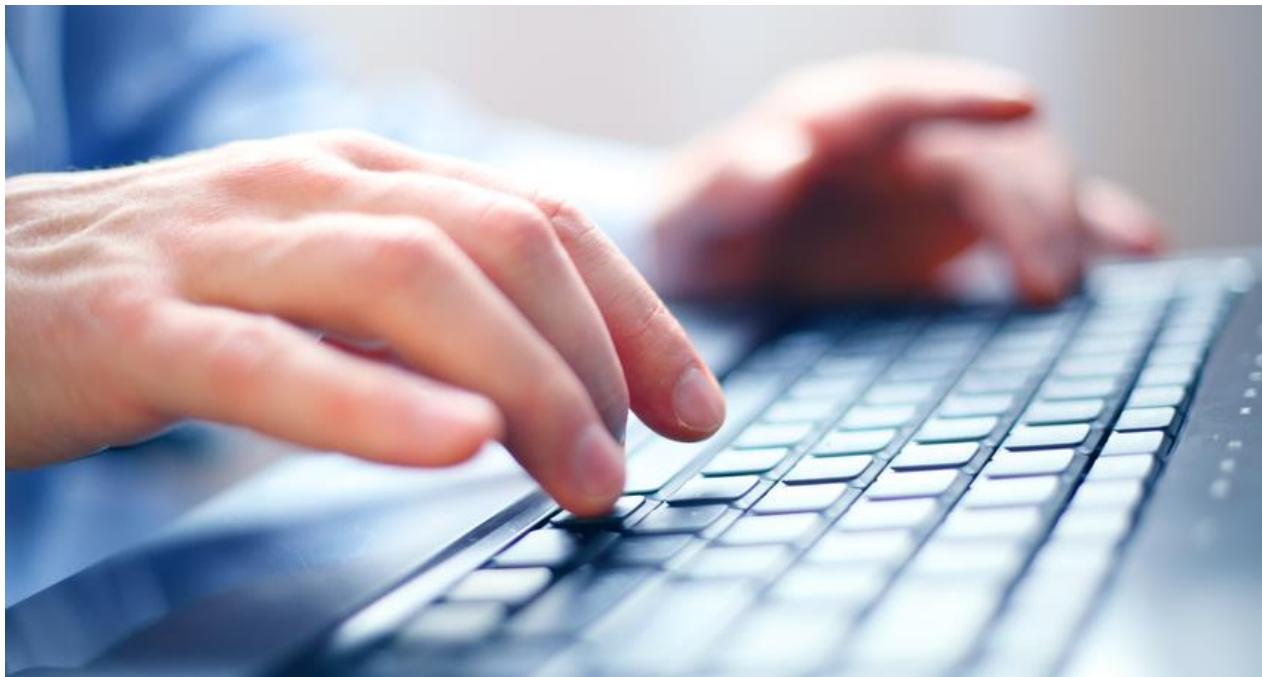
Top grades were awarded, however, for the availability of key technologies such as the mobile signature. The public register, an electronic data safe and the option to use services through major portals (single-sign-on) were highlighted accordingly. "The mobile signature, which now has around 500,000 users, was a small breakthrough. This allows you to use services anytime, anywhere, without having to carry around a card reader," says Christian Rupp, speaker of the platform Digital Austria, and points out the more than 5,000 signatures a day.

Along with Denmark, Spain, Lithuania, Norway and Portugal, Austria is part of the group of countries which are characterized by a particularly successful national integration of key technologies and a high level of user concentration. But there is still room for improvement for cross-border services.

2   Use of E-Government in Austria

The most important factors in the electronic processing of administrative processes are privacy and data security (54 percent), not being dependent on opening times (50 percent) and the convenience factor (45 percent). As far as awareness of government online services, there is still room for improvement in Austria. 81 percent of those surveyed said that they did not use E-Government more intensively because they didn't know many of the services. Comparatively there is strong interest for Open Government. 81 percent want to find out through Open Government how the authorities use their data and 72 percent hope that the administration finds out the concerns of the citizens swiftly with it.

Approximately 150,000 Austrians have a citizen card (card with activated citizen card function) and more than 500,000 people currently have the enabled mobile signature (accepted as a citizen card). Every month 10,000 to 25,000 signatures are added to this amount. The card is used especially for entry into Finance Online (68 percent of citizen cardholders) as well as access to social security data (45 percent).

The eIDAS regulation[3], regulates the use of the citizen card in the EU internal market, specifically the use of electronic signatures, electronic seals, electronic timestamps, delivering registered mail electronically, website authentication, validation and preservation services, and the sector for the electronic identification of individual persons and legal entities.

---

[3] Regulation (EU) No. 910/2014 of the European Parliament and of the Council, https://www.digitales.oesterreich.gv.at/web/digitales-osterreich/eidas-verordnung

For Austrians living abroad, there are already some Austrian embassies and consulates (such as London, Madrid, Munich and Brussels) that provide the option to activate one's mobile signatures and thus use Austrian E-Government services from abroad.

With a signature, which serves as an electronic ID card, numerous applications can be performed with a mouse click. You can, for example, view your pension account, get a registration certificate or an extract from a judicial record. Documents, invoices or contracts can be signed electronically. Increasing numbers of users are expected to result from ELGA (electronic health records). You will be able to see your own health data exclusively with the citizen card or mobile phone signature. Moreover, declarations of support for citizens' initiatives and petitions shall be possible electronically in the future. In Vienna, petitions can already be supported digitally.

2.1 Mobile Government

68 percent of those surveyed in Austria[4] believe that mobile phones, smartphones and tablets will be important or vitally important for the handling of administrative services in the future. This could be attributed to the increasing use of mobile devices, and thus the possible location-independent use of administrative services - keyword "always and everywhere." Mobile Government also called "M-Government," has not yet been widely implemented in the population as of 2015 (the year the survey was done).

Despite a variety of offerings in the areas of administration, traffic and leisure usage as a whole is low in the two survey countries of Germany and Austria. The mobile application most commonly used is from the field of transport. 35 percent of German and 51 percent of Austrian smartphone or tablet owners view mobile timetables for public transport. There is public awareness and demand for mobile applications in this area.

---

[4] eGovernment Monitor 2015, page 28-31, http://www.egovernment-monitor.de/fileadmin/uploads/Studien/2015/150715_eGovMon2015_FREIGABE_Druckversion1.pdf

Another aspect of Mobile Government is the collection of information using the smartphone, for example, viewing opening times of the city or recreational facilities, which are relatively frequently accessed on the go. Many public authorities in Austria recognize the trend towards mobile use of digital administration services and searches on custom apps. Thus, for example, many administrative authorities have already launched interactive apps to communicate information to the population and to get in touch with it.

2.2 Open Government

Open Government refers to the provision of public accessible information by the government and administration for citizens and the business sector. Moreover, participation in planning and decision-making is made possible. Objectives are more participation and transparency for citizens, more information from the administration, new revenue models for companies and a boost to the business location.

With regard to the future use of Open Government services, there are a number of differences according to the "E-Government Monitor 2015"[5] While Germans increasingly went online to participate in political decisions (31 percent) in the future, Austrians want to gain insight into the processes and procedures of the authorities (42 percent).

---

[5] eGovernment Monitor 2015, page 32-34, http://www.egovernment-monitor.de/fileadmin/uploads/Studien/2015/150715_eGovMon2015_FREIGABE_Druckversion1.pdf

3 E-Government as an Economic Factor

Experts such as Christian Rupp, speaker of the platform Digital Austria, estimates that about half of the E-Government applications will be in-house developments. The rest is expected to be distributed to international players and domestic suppliers, whereby the latter will also deliver smaller tools for industry giants. Prominent international examples are for example, Unisys, BearingPoint, SAP and Fabasoft. There are also very innovative small and medium-sized enterprises that offer solutions for forms or consultation systems.

"We have approximately 450 members from one-person businesses to large corporations, but one-half are very small businesses," said Kurt Nowotny, spokesman for the E-Government Experts Group of the Professional Association of Management Consultancy and Information Technology of the Austria Chamber of Commerce. It is quite common that individuals or programming teams collaborate on major projects.

E-government applications are becoming an increasingly important factor as an export commodity. Domestic companies compete with Austrian solutions abroad. Furthermore, they are used to secure standards and to establish interoperability. There are already some demonstrable success stories.

The Vienna letter logistics service hpc DUAL was commissioned by the National Administration of the Principality of Liechtenstein to provide dual delivery of letters and is now preparing for expansion into Switzerland as the next step. "Demand for our service will also exist among our neighbors in Germany," says hpc DUAL CEO Josef Schneider and is already forging big plans.

According to experts, the provision of Open Government data could boost the innovation engine and hold a total economic potential in the billions, long term. Currently, however, there seems to be just initial steps rather than a social or economic breakthrough in this area. Critical mass has not yet been achieved after the phase of raising awareness. Nevertheless, the European Commission expects a growth spurt of 40 billion Euros per year for the EU economy with the opening of administration data.

3.1 The Business Sector as a New Target Group

Service providers are increasingly also focusing on businesses as a target group. They need to look for other markets due to certain variations in the governmental sector. Delivery service providers could gain with financial service providers. The business sector also benefits from E-Government developments, for example, in the field of cloud computing by digital signature, e-bill (XiTrust) or identification solutions (Msign).

Other frequently mentioned providers are hpc Dual (electronic delivery systems), Infinica (document management), XiTrust (digital signature), aforms2web (forms), Qualisoft, bit group, Atos and the Federal Computing Center (Bundesrechenzentrum BRZ).

Representatives of the domestic business sector who wish to use the citizen card concept for their purposes as well can integrate open-source E-Government building blocks (modules for online applications; MOA) free of charge into their systems, adapt them to their specific needs and further develop them. This allows you to login using your citizen card, sign contracts and submit electronic contracts, as an example.

According to a survey[6] by the Gallup Institute in 2014 concerning the implementation status of E-Government services of the Austrian administration, in-house developments were in use at all participating provincial governments and ministries. By contrast, only around 60 percent of cities have their own solutions. All provincial governments confirmed that website forms that can be filled online with the data directly going into the internal processes. For ministries and cities, there were only 71 or 60 percent.

E-Government Sample Application

1. Filling in of form
2. Citizen card (mobile/e-Card)
3. Payment (credit card/ e-banking)
4. Processing by the administration
5. Electronic delivery

Sources: Digital Austria, Federal Chancellery
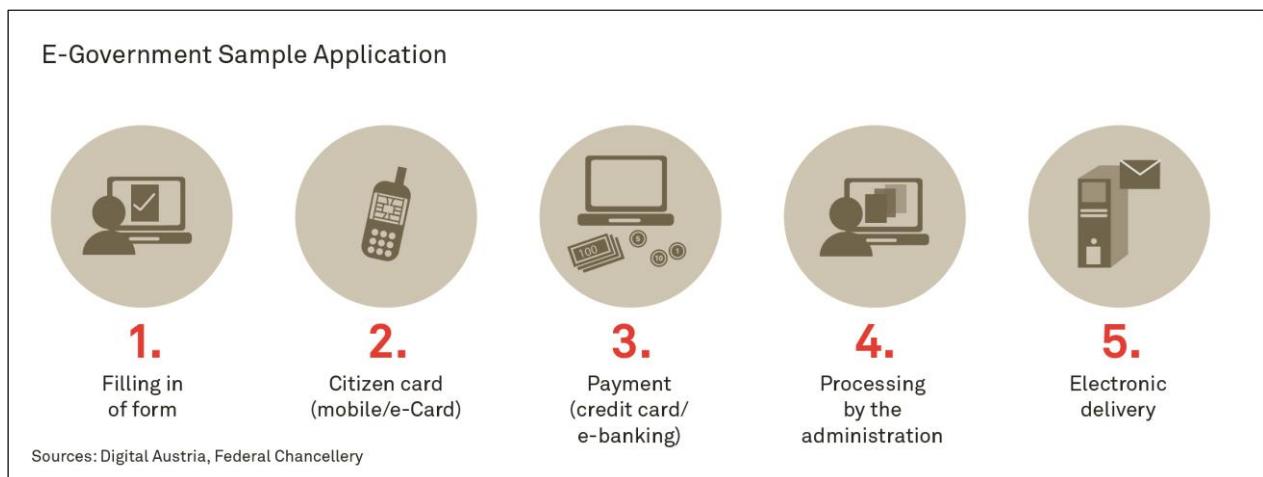
4 Vienna as a Pioneer of E-Government

The City of Vienna is considered a pioneer in the field of E-Government, although other cities, such as Linz or Hamburg, are also making great efforts. The federal capital of Vienna achieved third place in the 2015 ranking of the most innovative cities. The annually published "Innovation Cities Global Index"[7] ranked Vienna just behind London and San Francisco, but ahead of Boston, Seoul and New York.

Partly responsible for this is the very good IT infrastructure. "Vienna is well-positioned here, if one considers WLAN access and Co.," says Christian Rupp, speaker of the platform Digital Austria. In addition to about 60 "access points" already in service, up to 400 new free Wi-Fi access points will be created in the years 2015 and 2016. This will put Vienna on par with cities like New York or Barcelona. According to those responsible, free access to the Internet is as much part of a Smart City as an excellent public transport system or an efficient energy supply.

---

[6] Survey commissioned by aforms2web, 50 telephone interviews, target group: external and downstream services
[7] Index of 445 cities, ranked according to potential for innovation in 31 areas by the 2thinknow agency

The City of Vienna sees information and communications technology (ICT) as an "enabler" for the implementation of innovative urban development and a demand-oriented management. Moreover, ICT is also the nervous system of the city within the Smart City initiative, which is facing major challenges due to the growth of the population to over two million people. This is becoming even more important, since there is almost no part of life, in which ICT doesn't play a role.

In order to convey the different aspects of E-Government and Government 2.0, the City of Vienna is collaborating with the Danube University Krems (Center for E-Government) and the Federal Chancellery on the "eLearning for E-Government" project. E-Government and transparency are also the basis for E-Democracy. The petition platform of the City of Vienna shows this potential by giving citizens the opportunity to submit their specific concerns to the Municipal Council's Committee for Petitions and Citizens' Initiatives (Petitions Committee) via an Internet platform.

Freedom of information and transparency are also a focal point in the revision of the regulations on official secrecy and obligation to provide information. The draft law abolishing official secrecy provides that current obligation to secrecy of the authorities as currently stated in the constitution, shall be deleted and replaced by a series of concrete grounds for secrecy. Furthermore, a law on "access to information," will be created which is not covered by these grounds for confidentiality. However, it is still unclear how this information law will be implemented in practice.

5 Showcase Projects from Vienna
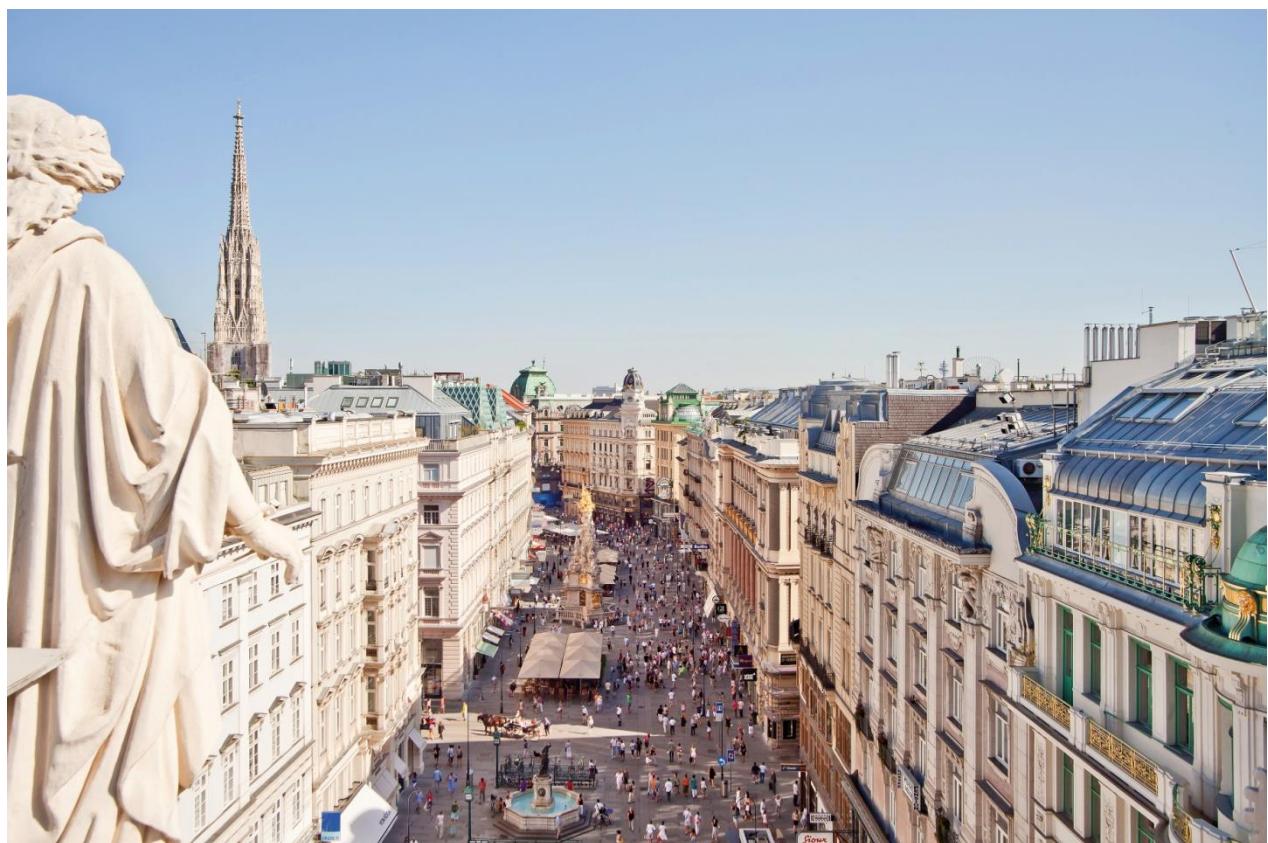
5.1 "Virtual Office"

The Virtual Office of the City of Vienna is a definite showcase example for E-Government. The citizens are supported in the handling of official matters and receive information about the services offered by the city administration. There are more than 580 official help pages that are well-structured and of uniform appearance which explain and facilitate the handling of official matters or help to avoid unnecessary actions. Nearly 200 administrative processes can be currently completed online.

The town also offers numerous other interactive services that are not of the official nature as the Virtual Office. They range from information on night pharmacies, air quality animations, to a bike routes planner.

With the "Vienna is e" initiative, electronic delivery of notices and errands (now an essential part of a modern, service-oriented management), is now the center of attention. The "electronic registered letter" is very beneficial because it eliminates long trips to the post office to collect such a letter. Target group number one are business people, who have considerably more contact with the authorities than individuals.

5.2 "Digital Agenda Vienna"

In other areas of digital administration Vienna can serve as an example for many local and national governments in Europe. For example, the city gathers ideas for its digital strategy on how to facilitate or enhance life in the city in the future with the project "Digital Agenda in Vienna." In the course of an online consultation, to which the public was invited, a number of proposals were submitted, rated and commented on. These suggestions are the basis of the new ICT strategy of the City of Vienna, which is to be expanded in the future again and again with new suggestions from the participatory processes.

The citizens and businesses were asked about their requirements for modern ICT in the city with the "Digital Agenda Vienna." An interactive participation platform has been set up for this purpose, which provides the opportunity to bring new ideas to the table to be discussed.

5.3 OGD Vienna

There is a lot of activity in the City of Vienna Open Government area. As early as May 2011, the Vienna City Administration opened its non-personal data to the public. In 2014 the European Data Innovator Award (EDI Award) went to the City of Vienna and the Open Government Competence Center. They paid tribute to the extraordinary activities and visions in the field of Open Government and Open Data in Vienna, Austria, the D-A-CH region (Germany, Austria and Switzerland) and beyond.

A study[8] by the Danube University Krems reached a similar conclusion. The Open Data Activities of the City of Vienna were evaluated as part of it. It states that Vienna is a pioneer when it comes to provision of public data and a good example for open administration. Employees of the municipal authorities are working in a competence center in cooperation with the community on how to best utilize and provide administrative data in a service-oriented way.

Open Data is also the topic at the regularly held in Vienna gov2.0camps. The exchange, inspiration and reflection on new ways of cooperation between government, civil society, research, business and politics are the point of focus. Another project concerns the finances of the municipalities. These can be made available via the Internet on the "open budget" platform in the interests of transparent financial management. Innovative apps or visualizations are also supposed to be created.

---

[8] Ex-post evaluation of the implementation of the Open Government Data Strategy of the City of Vienna on the basis of qualitative interviews and online surveys; Danube University Krems, Center for e-Governance, December 2012

Cooperation Open Government Data Austria short "Cooperation OGD Austria," which was established on July 13, 2011 by the Federal Chancellery and the cities of Vienna, Linz, Salzburg and Graz cares for common standards and the creation of effective parameters. The "e-Gov:Labs" portal is a central point of contact for anyone who wants to participate in the activities and developments related to the "open" E-Government software modules. Change requests, bug fixes and enhancements can be systematically incorporated.

5.4 Citizen Participation

A new strategy for the Vienna research, technology and innovation policies to 2020 is currently being worked on in a lively exchange process with the citizens. An "Open Forum" offered the possibility to participate in the project "Innovative Vienna2020" and to jointly develop important priorities, challenges and visions for the location Vienna.

The possibility of internal participation has been created for the employees of the Vienna City Administration as well. In a newly organized form of an employee suggestion scheme, suggestions for optimization of administrative processes are collected and made available for internal discussion.

With these participation initiatives, the City of Vienna wants to take into account having an open administration and the objectives of the digital and smart City of Vienna. "Collaborative approaches are the route towards cooperation between the population and the Vienna City Administration," the city stated.

5.5 University of Vienna

The University of Vienna has approximately 92,000 students and 9,700 employees, making it one of the largest universities in Central Europe and has implemented an information system called "U:SPACE" to handle their requirements for digital administrative processes. It includes web applications for registration and administration of courses and examinations, access to the electronic examination pass, payment of student contributions using modern payment methods, job centers and more. Future access to all study-related services is supposed to be bundled into a single portal (single-point-of-entry).

In addition to applications for the technical execution of business processes and a university-wide Intranet and Wiki, the University of Vienna has the research information system "u:cris" (cris = current research information system). The data collected here will be used to comply with the legal reporting requirements on their performance. Additionally, the system also offers service systems for the scientists themselves, since their own publications can be compiled into a list in various citation styles or CVs with a mere push of a button. Even the general public can use the portal as a source of information.

5.6 Wiener Linien (Vienna's public transport operator)

"The external use of digital administration helps us to continually improve customer service and make it more efficient. Internally transactions, communication and information exchange is much easier," the WienerLinien explain about the simplified and accelerated procedures.

Examples include a ticket app that allows passengers a mobile and uncomplicated access to purchasing tickets, as well as an online store, which additionally facilitates the customer's personal management of annual tickets. The public transport system app qando, developed by software specialists Fluidtime, enables you to get mobile information on the progress with metro, bus and streetcar and has already won several awards. Among other things, qando was nominated for the National Multimedia Award, received the "ebiz egovernment award," and the National Consulting Award.

Helpful to employees is the "Handy4All Cruises" app. It tracks the current traffic situation and disturbances. In addition, the Wiener Linien are part of the Open Government initiative of the City of Vienna since 2011 and in that interface have made available real-time data, geospatial data from stations, elevators and much more.

6 Security and Data Protection/Privacy

IT security is one of the basic requirements for E-Government, both for use in companies, as well as the acceptance by the citizens. Therefore, numerous initiatives have emerged in this area in order to create the right conditions and opportunities for action.

A comprehensive approach for the protection of cyber space and humans in virtual space was adopted on March 20, 2013 by the Federal Government, the "Austrian Strategy for Cyber Security" (ÖSCS). An operational cyber coordination structure is being established at national level with the strategy for cyber security.

Especially for public administration and the critical information infrastructure in Austria, the Government Computer Emergency Response Team (GovCERT.at) was founded. The Federal Chancellery operates this facility in cooperation with the national CERT (CERT.at) for the handling and prevention of security incidents in the field of information and communication technologies since April 2008.

The tasks of GovCERT include the collection and evaluation of incidents from the operational ICT operation of federal, state, city and local governments, the coordination of counter-measures and the procurement and evaluation of messages from the public and non-public sources. With the Austrian Trust Circles set up by the Federal Chancellery and CERT.at, security experts are linked to the different sectors, so as to have the right contacts available immediately in the case of emergency.

The Internet platform of the E-Government Innovation Center provides both general information on current projects as well as its own test site for risk-free testing of E-Government basic technologies in the field of security.

6.1 Mobile Signature and Citizen Card

Important tools in the field of E-Government are mobile signatures and citizen cards. They offer a simple and secure electronic identity on the Internet and have the same validity as a handwritten signature. Thus citizens can, for example, conclude legally valid business transactions on the Internet, handle official processes, view their pension accounts, submit their tax returns or cancel a subscription.

The citizen card or mobile signature is also the online key for electronic health records (EHR). Personal health information can only be accessed aside from the patients themselves, by those who can prove to need the data for treatment purposes and then only for 28 days. Patients can see who has accessed their data. In case of misuse, penalties may be levied. For employers, occupational physicians, government agencies, insurance companies and Health Insurance primary physicians the data is inaccessible, access is also not possible from a technical standpoint. In addition, patients can block individual findings, treatment cases or medications from being able to be viewed if desired, and thus control the access of their data.

7 Initiatives and Events

In recent years, a network of organizations, initiatives and companies has formed that wants to broach, discuss and advance the issue of E-Government. The focus of activities is in Vienna, but keen commitment can also be found in the provinces. Following are brief descriptions of the range of services.

E-Government Conference
An E-Government conference is held every year at different a location (2015 at Vienna City Hall), which provides a forum to the issues surrounding the digital state. It is organized by the Association for Data Processing (ADP), which also organizes other conferences, for example, about the topic of digital preservation.

E-Government Forum
The E-Government Forum is a platform for discussion and exchange of experiences on E-Government and E-Democracy and was founded in 2001. The aim of the Austrian Computer Society's initiative is to provide impetus for the E-Government project.

CeDEM
The "International Conference for E-Democracy and Open Government" is organized by the Center for E-Governance at the Danube University Krems. It takes place annually and already has a branch in Asia.

EGIZ
The Graz E-Government Innovation Center EGIZ offers information sessions and workshops on current E-Government topics.

EDI Award
The European Data Innovator Award acknowledges special achievements in the field of Open Government and Open Data. In 2014, the award went to Johann Mittheisz, former CIO of the City of Vienna, and the Open Government Competence Center of the City of Vienna.

OGD D-A-CH-Li Conference
The 4th OGD D-A-CH-Li conference on "Open X" was held in Vienna in 2015. The conference series began in 2012 in Austria and takes place every year in another participating country.

8 Best Practice Application in Austria

The utilization rate of E-Government in Austria has increased in recent years mainly due to the citizens' portal HELP.gv.at and the services offered at the Business Service Portal USP.gv.at. However, there are a variety of applications that show that innovation potential exists in this area. With the following list we offer an exemplary excerpt of successful E-Government applications in Austria:

HELP.gv.at
Already since 2001, HELP has been providing online services under the "one-stop principle." In addition to initial information about E-Government services and forms, there is an electronic appointment booking system and a correspondingly adapted information service for mobile devices. More than 40 million pages are viewed per year, a quarter of them on mobile devices. In the "analog world" it would take 528 office counters to meet this kind of demand for information. The most sought after are the areas of birth, car / driver's license, pensions and inheritance.

FinanzOnline
FinanzOnline (Austria's electronic tax administration service) was launched in 2003 by the Ministry of Finance and has contributed significantly to cost reduction in the finance administration office. Moreover, the platform also offers the taxpayers a lot of advantages. A third of all worker investments are handled through this system every year.

ELGA

With the electronic health record an information system was created for patients and doctors to be able to access health data (results, drugs, etc.) via computer. Patients are automatically included unless they opt out. The key to the record is the E-card at the doctor visit and on the Internet, the citizen card or mobile phone signature. Although physicians must enter lab and radiology results and prescribed medications, they are not required to use ELGA. However, they can be held liable if they make a mistake as a result of not using it.

Business Service Portal (USP)

The Business Service Portal provides all relevant information on public administration for entrepreneurs through a website. The most important federal E-Government applications (FinanzOnline, data processing register, etc.) are available for registered companies only with an ID code. It is intended to primarily benefit the small and medium enterprises (SMEs) that cannot operate complicated IT systems themselves. The most popular are sales tax, the commercial register and trade.

Mobile Parking

Mobile phone parking has been available in Vienna since 2003. After a hesitant start, the payment method has now been established. By 2013, half of all parking vouchers, 24 million to be exact, were already handled via mobile phones. This represents almost a quarter of the 100 million electronic tickets that have been ordered since the introduction of the system. The City of Vienna was able to achieve its goal of a simple and precise control method while optimizing the administrative costs.

Criminal Record Certificate

The Vienna Federal Police Directorate provides electronic criminal records certificates, formerly called "Certificate of Conduct." Electronic delivery and payment through an online service are possible.

Information for Mobile Hazardous Waste Collection

Municipal Department 48 for waste management, street cleaning and vehicle fleet (MA 48) developed an SMS and e-mail information service that informs registered citizens, among other things, about the mobile collection sites of the City of Vienna. You will be reminded when special collection trucks come around to collect hazardous materials, used cooking oils and small electrical appliances.

Authorization of Work on or Near the Road

One of the first integrated E-Government procedures, employed by the City of Vienna supports citizens with the application on the Internet, the electronic delivery of the notice, and payment of the fees and permits the rapid, automation-assisted processing in the back office.

e-Business Vienna

The e-Business project has also been applied consistently. It supports citizens and the municipal staff with the application (conventional or via the Internet), the (electronic) delivery of the notice, and payment of the fees, as well as the rapid, automation-assisted processing in the back office. The commercial administration acts here as "one" office through the networking of all departments.

Information System for the Administration of Construction Site Excavations

The system developed by Municipal Department 14 - Automated Data Processing, Information and Communications Technology (MA 14) and Unisys Austria has already received several awards. Specifically, companies that are planning a street excavation and have access authorization can retrieve all necessary information on the authorization and coordination of excavations in road construction at a glance on the screen.

Culture;App - Where to Go in Vienna

This application provides an overview of the events of the federal theatre, federal museums and other selected Viennese theatres. Tickets can be purchased by the push of a button or the venues can be contacted. A route planner will reliably get you there, whether by car or on foot.

9 Trends

The progressive digitalization of society affects the administration more and more. Citizens want more transparency and participation; the business sector calls for simplified processes. Austria, and especially Vienna, have already responded in this area and have been ranked in Europe in the top group for many years. Structures and processes have been adjusted accordingly in order to utilize the full potential of ICT developments. With the boom of mobile signatures, use of E-Government is now more widespread which in turn brings movement to these services. Registration forms have become superfluous because the data can be directly viewed electronically by authorities.

In Graz an analysis is being done as to where the water travels when it flows down the slopes during heavy rain. Thus, building sites can be better assessed. Domestic companies may apply for the commercial register and handle all aspects of it online and files publication costs have been decreased by 95 percent. An increasingly important issue is transparency. A start is the "Open Budget" platform, which presents the financial data of Austrian Municipalities clearly.

What opportunities will present themselves through "wearables," i.e. portable devices such as fitness trackers and computer watches or the "Internet of things" has not yet been estimated. The range includes shoe soles that indicate the right route for blind people through vibrations or car keys that flash when a traffic jam is reported on one's usual route. An evaluation of Flickr photos also shows where tourists like to spend time.

Garbage cans that alert the administration when they have to be emptied and apps through which you can send photos of a bad situation directly to the responsible authority, already exist in some countries and cities. Novel forms of interaction between people and computers, such as virtual and augmented reality and artificial intelligence are likely but still far beyond current fantasies.

Our domestic achievements are luring delegations from various countries, who want to learn about the Austrian way in E-Government. It also affects the image of public services positively. A large proportion of support to the administration is provided by numerous specialists from one-person businesses to large operations.

And who knows what impact the recent developments could have on the administration in the foreseeable future. Perhaps in the Vienna of the future you can check a car license plate and verify if a parking ticket has been resolved by looking through a pair of smart data glasses?

A service offered by
the City of Vienna

10 Services Offered by the Vienna Business Agency

The objective of the Vienna Business Agency is the continuous development of international competitiveness by supporting the Vienna-based companies and its innovative strength, as well as a sustainable modernization of the business location. To achieve this, the Vienna Business Agency provides free consultations to all entrepreneurs in Vienna on the topics of business creation, business location or expansion, business support and financing. Furthermore, networking contacts in the Viennese economy are also made available.

The Vienna Business Agency supports and helps businesses complete their research and development projects with both individual consulting and monetary funding. Depending on requirements, they will receive information about sponsorships, financing opportunities, possible development partners, research service providers, or research infrastructure, according to their needs.

The Vienna Business Agency sees itself as a network of the Viennese ICT industry and supports businesses with consultations, as well with distribution and networking among themselves. Events and workshops on topics from the field of ICT are held regularly.

Additionally, the Vienna Business Agency helps company relocations or internationalization services. Help is provided to business founders and young entrepreneurs in the start-up area. Free workshops and training sessions on topics of everyday business are offered as well as small, affordable office spaces.

11 Businesses from Vienna

With the alphabetical listing[9] on the following pages, we provide you with an overview of selected businesses from Vienna offering research services in the field of E-Government.

An overview of Vienna technology businesses is also provided by the Vienna Business Agency's Technology Platform. At technologieplattform.wirtschaftsagentur.at, Vienna businesses and institutions can present their innovative products, services and prototypes as well as their research expertise and find development partners and pilot customers.

---

[9] This list provides no claims to completeness

E-Government Businesses

Business	Since	Staff	Description	References	Contact	Website	E-Mail
A-Trust	2000	16	A-Trust is the only accredited provider of qualified certificates in Austria. The company portfolio includes two secure electronic identity verification systems, the Citizen Card and the mobile phone signature. In addition, A-Trust offer the "E-Tresor", a secure online document archive. Approximately 500,000 Austrians use the mobile phone signature, while the Citizen Card has some 150,000 users.	The company predominantly specializes in Smart Cards, Hardware Security Modules (HSM), and certificates for the Windows Store or as a means of identification, SSL encryption, and as a signature, stored on a variety of server landscapes. Their clients include the Vienna University of Economics and Business, the Austrian Economic Chambers (membership cards), and the Austrian Federal Ministry of Finance (membership cards).	A-Trust Gesellschaft für Sicherheitssysteme im elektronischen Datenverkehr GmbH Landstraßer Hauptstraße 5 A-1030 Wien T +43 1 7132151-0 Contact partner: Michael Butz	www.a-trust.at	office@a-trust.at
aforms2web solutions & service GmbH	2007	19	aforms2web specialize in form management. Their product, "AFORMSOLUTION", is the leading form server in Austria and Switzerland, according to their own statements. The company provides integrated solutions to facilitate standardized, unimpeded, user-friendly civil dialogue. aforms2web further offers the efficient processing of applications in the administrative sphere, supports transitions from paper to electronic forms, and offers assistance in managing large-scale form inventories.	Five Austrian federal governmental agencies and state capitals, more than 500 cities and municipalities, and many subordinate federal agencies in Austria, six cantons and large cities in Switzerland, and the state government of Liechtenstein use the products and services offered by aforms2web. The Federal Ministries of Finance and Justice, the Medical University of Vienna, Innsbruck Medical University, Energieallianz Austria GmbH, and VAV Versicherungs AG also trust aforms2web products.	aforms2web solutions & services GmbH Theresianumgasse 11 A-1040 Wien T +43 676 3054404 Contact partner: Peter Marvin Behrendt, MSc, MBA	www.aforms2web.com	office@aforms2web.com
Anecon	1998	>100	Anecon develops and tests customized software solutions. The company is the Austrian market leader in the field of software testing. They also offer IT consultancy and IT training. In 2007, they established their subsidiary, aforms2web.	Their clients are predominantly from the banking, insurance, telecommunications, and public administration sectors.	ANECON Software Design und Beratung G.m.b.H. Alser Straße 4 A-1090 Wien T +43 1 4095890 Contact partner: Vera Reichlin-Meldegg	www.anecon.com	office@anecon.com
bit group	1986	>400	The bit group is headquartered in Graz. According to its own statements, it is the largest private education and qualification provider in Austria, working with public-sector clients amongst others.	Clients of bit group include A1, Bayer, T-mobile, Raiffeisen, ÖBB, Siemens, WKO, and the state of Styria. Under its umbrella brand, "Verwaltungsakademie der Stadt Graz" (Graz Administration School), bit offers all employees an internal training and further education programme tailored annually towards the current targets of the magistrat, for instance.	bit group GmbH Niederlassung Wien Lemböckgasse 49a A-1230 Wien T +43 1 729 69 50 0 Contact partner: Karl Kerschbaummayr	www.bitonline.com	office@bit.at
BRZ	1997	1,157	Bundesrechenzentrum GmbH is the market-leading e-government partner of the Austrian federal administration. It supports more than 30,000 IT jobs at 1,200 sites and operates over 400 e-government applications. It is owned by Republic of Austria.	The core market of the BRZ consists of the federal ministries, the Federal Chancellery, the supreme authorities, universities, and divested organizations such as the BHAG and AMS.	Bundesrechenzentrum GmbH Hintere Zollamtsstraße 4 A-1030 Wien T +43 1 71123-0 Contact partner: Barbara Blovsky	www.brz.gv.at/	kundenservice@brz.gv.at

Business	Since	Staff	Description	References	Contact	Website	E-mail
hpc Dual	2004	4	hpc Dual is a Vienna-based service provider in the field of electronic identities and distribution & shipping solutions.	Their portfolio includes the "BriefButler" online platform, which is used to dispatch approximately 25 to 30 million shipments per year. Anyone who registers his or her e-mail address in the system can receive his or her post electronically; all other recipients are catered for through the post. In addition to the dual delivery system – both electronically and on paper – "BriefButler" also includes an integrated payment function through which users can pay their bills online, without navigating away from the document.	HPC Duale Zustellsysteme GmbH Hasnerstrasse 123 A-1160 Wien T +43 236 6072 Contact partner: Josef Schneider	www.hpcdual.at	info@hpcdual.at
Infinica	2006	30	Infinica specializes in solutions for the automated, personalized creation of documents and interactive electronic forms, including the digitalized workflows involved.	Their clients include the Porsche Group, EVN, UPC, and OEBB. In addition to a large number of business partners, the company also works with the Vienna University of Technology (TU) and the Vienna University of Economics and Business (WU). Winner of the 2015 Constantinus Award.	INFINICA GmbH Saturn Tower Leonard-Bernstein-Straße 10 A-1220 Wien T +43 1 263 12 96 Contact partner: Herbert Liebl	www.infinica.com	info@infinica.com
lekton	2003	2	lekton – Grafik & Web development is a service provider in the field of web applications and graphic design. Together with the company doloops OG, Lekton develops applications specifically for the semantic web.	The Quiew (Quick Review) web application was developed in cooperation by lekton and doloops, with involvement of The Austrian Research Institute for Artificial Intelligence (OFAI). It is a surveying and evaluation system featuring intelligent semantic grouping and a search function. The program is used by the City of Vienna in the scope of its Intranet participation project, "Betriebliches Vorschlagswesen 4.0" (Suggestion Scheme 4.0). Other clients include the Chamber of Labour, bJV, the Province of Vienna health care fund, Arche Noah, and datadive.	lekton Grafik und Web development Pulverturmgasse 17/3+4 A-1090 Wien T +43 676 7365729 Contact partner: Bernd Haberl	www.lekton.at	bernd.haberl@lekton.at
MobileSign	2014	5	MobileSign is a company offering eID solutions. It is the cooperation partner of the Federal Chancellery (BKA) and has introduced the online ID / mobile phone signature into the commercial sector. Besides the evaluation and development of new use cases of the mobile phone signature, MobileSign also offers consulting and training programmes relating to the online ID. The company creates value for its customers by reacting to the individual and topical needs of companies with innovative solutions.	Its customers come from a wide range of sectors, e.g. Oberbank, brokerage agreements, Remax, daten pool, delta, carsharing 24/7, and the Neos party.	MobileSign GmbH Bründlsteig 23 A-1160 Wien T +43 664 4545755 Contact partner: Florian Wöhrle	www.m-sign.at	f.woehrle@m-sign.at

Business	Since	Staff	Description	References	Contact	Website	E-mail
Qualysoft	1999	>500	The Vienna-based IT service provider Qualysoft offers consultancy and support for fiscal administration processes, form management, and application and system integration.	Clients include the Ministry of Finance of the Republic of Croatia and the Albanian Taxation Office.	Qualysoft GmbH Leonard-Bernstein-Straße 10 A-1220 Wien T 43 1 4095987 Contact partner: Maria Bürger	www.qualysoft.at	office@qualysoft.at
Soroban IT-Beratung	2006	3	Soroban specialises in project management, consultancy, analysis, software development, test management, and quality assurance in e-government. Soroban has established an international reputation for expertise thanks to its long-standing experience with large-scale projects (e.g. central civil registers, registers of identification numbers, the Albanian National Civil Register, etc.) conducted in cooperation with the BMI, BKA, LFRZ, and other organizations of public administration.	The latest development by Soroban is an intelligent communication and information hub: GOV2BIZ. Gov2Biz allows users to transform any IT landscape into a secured communication hub in a few easy steps, without making any concessions on data security.	Soroban IT-Beratung GmbH Stephansplatz 6 A-1090 Wien T +43 1 9078091 Contact partner: Josef Weissinger	www.soroban-it.at	office@soroban-it.at
straight4ward	2013	5	The software company straight4ward offers customized software, interactive user interfaces, and mobile applications.	straight4ward has developed an employee suggestion platform for the City of Vienna, a questionnaire for determining the risk profile of mould infestations inside flats, and a rent calculator.	s4w straight4ward GmbH Hugogasse 5 A-1090 Wien T +43 1 9616666 Contact partner: Constantin Köck	www.straight4ward.at	c.koeck@straight4ward.at
XiTrust Secure Technologies	2002	11	XiTrust is headquartered in Graz with a branch in Vienna. The company is a contact point for consultancy, services, and products relating to electronic signatures and seamless business processes. It offers the optimization of company processes by means of digital signatures and encryption.	XiTrust uses a variety of technologies, including XiTrust MOXIS (digital signature and encryption), XiTrust Timestamp Server (electronic time stamp), and XiTrust Server (archiving of electronic documents) in order to provide its users with a legally watertight and confidential, yet user-friendly system of electronic communication. As a result, XiCrypt facilitates the consistent implementation of new technologies into business processes. Its customers include Spar, Strabag, the University of Graz, Bauhaus, and WienIT.	XiTrust Secure Technologies Favoritenstraße 16 A-1090 Wien T +43 699 14102032 Contact partner: Georg Lindsberger	www.xitrust.com/	office@xitrust.com

12 Imprint

Vienna Business Agency. A service offered by the City of Vienna.
A-1070 Vienna, Austria, Mariahilfer Straße 20
viennabusinessagency.at

CONTACT: Andrea Rauscher, Technology Services
T +43 1 4000-86786, rauscher@wirtschaftsagentur.at

PHOTOS & GRAPHICS: Vienna Business Agency, Fotolia, iStock Fotos, Vienna Business Agency/David Bohmann, Vienna Business Agency/Christian Husar, Vienna Tourist Board/Christian Stemper, Vienna Tourist Board/Peter Rigaud

ICT DATA SOURCES: Statistics Austria, G. Haber, METIS, University of Klagenfurt "Impact Analyse: Software und IT-Sektor 2011", KMU Research Austria, Economic Database

LAST UPDATED: January 2017

Technology reports are available on the following topics:

¬ Cloud Computing
¬ Big Data Open Data
¬ Mobile Apps
¬ E-Health
¬ E-Government
¬ Emerging Technologies
¬ IT Security
¬ User Centered Design
¬ Enterprise Software
¬ Entertainment Computing
¬ Visual Computing

The digital version can be found at https://viennabusinessagency.at/technology/technology-location-vienna/

At technologieplattform.wirtschaftsagentur.at Viennese can present their innovative products, services and prototypes as well as their research experience to enterprises and institutions in the technology sector and find development partners and pilot customers.