Swiss **PRO**

ENHANCING GOOD GOVERNANCE
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ASSESSMENT

OF e-GOVERNMENT STATUS
IN LOCAL SELF-GOVERNMENT UNITS

SWISS PRO e-GOVERNMENT DEVELOPMENT INDEX

INTRODUCTION

The Assessment of e-Government Status in Local Self-Government Units (LSGs) in the Republic of Serbia, was financed by and for the purposes of the Swiss PRO Programme - Enhancing Good Governance and Social Inclusion for Municipal Development. In the period from August to December 2018, the intervention was carried out by the Development Consulting Group (DCG d.o.o.) in 60 selected LSGs in the Republic of Serbia. Although the implementation of the Swiss PRO Programme is focused on 99 cities and municipalities in the region of Šumadija and Western Serbia and the region of South and Eastern Serbia, the assessment sample also included LSGs outside the Programme territory, selected on the basis of a set of general and specific criteria and agreed upon with the Government's Office for Information Technology and e-Government.

The Assessment, which is in line with the needs of the current national development of e-Government, overally aims at determining the current status of e-Government at the local level. More precisely, to provide evidence-based information, as well as the conclusions and recommendations arising from them in relation to institutional/organizational capacities, capacity to implement specific policies and regulations, e-Government capacities, capacity to communicate with beneficiaries, and general ICT capacities of LSGs.

The ultimate outcome of the overall intervention is to provide information to the LSGs and define further steps in providing better public services to businesses and citizens, through improving the efficiency, transparency and accountability of LSGs in the process of introduction of e-Government.

Assessment methodology and tools

In the preparatory phase, initial desk research and introductory meetings were held with key stakeholders. As a result, 60 LSGs[1], were selected, based on the carefully defined criteria, an assessment visit plan and timelines were defined. Methodology of the assessment was developed, including the concept of an improved tool for e-Government assessment, with considerations of the lessons learned and recommendations from the previous assessment efforts. The LSG sample was selected based on a set of general and specific criteria, agreed with the GOITEG and the Swiss PRO. In the launching phase the LSG assessment questionnaire was prepared and approved, as well as the survey questionnaires for citizens and the private sector. Scenarios for focus groups were defined, consultants were teamed up and LSG visits were scheduled.

An **electronic tool** has been developed, to serve as a database and generate the preliminary municipal reports and provide overall statistical reports, which can be used for qualitative comparative and trend analyses.

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[1] The list of LSGs included in the Assessment: Ada, Babušnica, Bački Petrovac, Bajina Bašta, Bečej, Bela Palanka, Bogatić, Boljevac, Ćuprija, Golubac, Inđija, Ivanjica, Kanjiža, Kikinda, Knić, Knjaževac, Kovin, Kragujevac, Kraljevo, Kruševac, Kula, Kuršumlija, Leskovac, Loznica, Ljubovija, Medveđa, Mionica, Negotin, Niš, Nova Varoš, Novi Pazar, Pančevo, Pirot, Plandište, Požarevac, Požega, Preševo, Prijepolje, Raška, Ruma, Šabac, Sečanj, Šid, Smederevo, Sokobanja, Srbobran, Sremska Mitrovica, Subotica, Surdulica, Svrljig, Temerin, Topola, Tutin, Užice, Vladimirci, Vlasotince, Vranje, Vrbas, Vrnjačka Banja, Zrenjanin.

The field visits were held in the period October-December, 2018. Focus groups were held with a total of 369 participants from 60 LSGs, with 287 LSG representatives (60 focus groups, ranging from two to 17 participants) and 16 focus groups with 82 users of LSG services (20 CSOs, 33 private sector participants and 29 citizens). In addition, 254 citizens were interviewed in the municipal Citizen Assistance Centres (CAC) and their responses were included in the online citizen survey results. In the period October-January 2019, a total of 698 e-service users (542 citizens and 156 private sector representatives responded to the surveys).

Swiss PRO e-Government Development Index **(Swiss PRO EGDI 2018)** is a combination of the existing (EGDI 2014) and new criteria and indicators. The use of **EGDI 2014** as a basis has ensured a baseline for monitoring the key indicators, but the new tool is updated, in line with the new developments and GOITEG's particular interest in the e-Government's users' perspective. Thus, the aim was to create an integrated, reliable tool for measuring e-Government at the local level. Compared to EGDI 2014., the list of services was expanded, indicators of technical, institutional and HR capacity were added and e-Government users' perspective was added. The 2018 Swiss PRO EGDI has three sets of indicators related to:

1. Electronic Service Provision,
2. LSG's Capacity and Readiness to Implement e-Services, and
3. e-Government Users' IT Literacy, Perception and Satisfaction with e-Government Services.

The total score for Parts 1One and 2Two is 590 (430 + 152) and Part 3Three is measured only qualitatively.

1. SUMMARY OF eGOVERNMENT ASSESSMENT IN LOCAL SELF-GOVERNMENT UNITS IN SERBIA

The Programme Enhancing Good Governance and Social Inclusion for Municipal Development – Swiss PRO Programme, implemented by the United Nations Office for Project Services (UNOPS), aims to promote good governance and social inclusion in 99 cities and municipalities in the region of Šumadija and Western Serbia, and the region of South and Eastern Serbia.

To this end, the Swiss PRO Programme, on the one hand, works to improve local capacities in terms of the principles of good governance (GG) in the development and implementation of local sectoral policies and regulations. On the other hand, the Programme, together with LSGs and civil society organizations, creates lasting capacities, improving the knowledge and skills of the existing officials, in order to increase the volume and quality of public services for all citizens, especially those belonging to excluded groups.

In general, this approach will contribute to the improvement of the rule of law at the local level, increased accountability, transparency, efficiency and effectiveness of the LSGs and, in the final outcome, improve the quality of life of citizens, especially citizens belonging to vulnerable groups. Among the key, tangible results of this approach, there is the improvement of the existing regulations and institutional, technical and personnel capacities for the improvement of the e-Services, i.e. digitization of administrative processes as one of the key priorities of the Government of the Republic of Serbia.

In the past decade, various differnet initiatives for the introduction of e-Services were implemented in Serbia, which did not have a common approach or a comprehensive view on e-Government and the digital environment. In order to optimize relevant existing and future processes, Swiss PRO conducted an assessment of the existing capacities and resources of e-Government in a statistically relevant sample of 60 LSGs. As a result, preliminary data have been obtained which will, on a national level, serve as information for all forthcoming activities directly related to e-Government.

The legal and regulatory framework for e-Government in Serbia

Modernisation is one of the key goals of the Republic of Serbia's Public Administration Reform (PAR) Strategy, aimed at digitalisation of the society, by introduction of IT technologies and e-services at both the central and local level. Other relevant strategic framework includes *Information Society Development Strategy 2020 and Electronic Government Development Strategy*. The *e-Government Portal of the Republic of Serbia* was first introduced in 2009, as a focal space for e-services. In 2005, the *Guidelines for Website Design of the State Administration, Territorial Units and Local Self-Governments* were issued (last updated in 2015) and, in 2014, a *List of Interoperability Standards* (updated in 2018). The *Open Data Government Portal* (OGDP) was launched in October 2017. In 2018, the *Law on e-Government* was adopted and, finally, in December 2018 a set of four crucial by-laws were adopted, regulating the content and structure of public institutions' websites, use of Central Government's Data Server and e-

Government Portal, technical standards and communication related to the e-Government Portal and OGDP.

The *Law on General Administrative Procedure*s adopted in March 2016, also, relies on e-Government concepts. In June 2017, an information system for electronic administrative procedures (e-ZUP) was introduced, as an important step forward in PAR implementation, it has significantly contributed to LSG efficiency and has visibly improved their communication with citizens and businesses. The main benefit for LSG service users is that they do not have to submit hard copies of supporting documents, provided that they sign official authorization of local government officials to access their documents stored in the electronic database. The *Action Plan for Implementation of the Initiative Partnership for Open Government (POG) (2018-2020)* was adopted in December 2018, also, focuses on e-Government and open data exchange. In recent years, several important e-services have been developed, including the electronic construction permitting (CEOP), e-Baby, e-Paper and e-Inspector. In line with the Strategy of Regulatory Reform and Public Policy Management (2016-2020), steps have been taken in implementing a *Central Public Registry of Administrative Procedures.* The establishment of the Serbian-Korean Information-Access Centre (SKIP) in 2017, has also significantly contributed to the development of e-Government.

Previous e-Government assessments and research in the Republic of Serbia

Occasional research has been done since 2014, but not consistently. No integrated research was done since the adoption of the major legislative and strategic framework and no assessments have incorporated the users' perceptions and attitudes. The *Criteria for Evaluating the Web Presentations of Public Administration Entities* were developed in 2012 and were last applied for the year 2015 (conducted in December 2014), covering only the website-related aspects and not focusing on the public entities' institutional and human resource capacities to implement and maintain the e-Government. Development of a self-assessment tool for evaluation of web presentations has been announced in 2017, but has not been completed yet. According to the results of the E-Government Development Index (EGDI), all LSGs, except for one have websites. The best placed LSGs come from Belgrade region, while the lowest ones are from Jablanički, Pčinjski and Mačvanski districts, indicating that the level of socio-economic development influences e-Government conduct, as well. In 2014, there were almost no e-services and no human resource capacity for regular website updating and maintenance.

According to the *Global Open Data Index* for 2016, which measures openness of data globally, Serbia is 41th out of 94 countries. The availability of quality data, governance and exchange within the Government, as well as the general understanding of the policy-making process based on data, have been recognised as a key challenge for the transformation of the Republic of Serbia in line with the EU. In 2015, Serbia joined the *Open Government Data Initiative,* and performed Open Data Readiness Assessment, resulting in the first OGDI Action-Plan. Relevant international research on e-Government included the 2017 *EU e-Government Benchmark*, 2017 *Study on e-Government Services in Europe*, *2018 UN e-Government Survey* and 2017 Global Open Data Index.

1.2. KEY FINDINGS OF THE e-GOVERNMENT ASSESSMENT IN 60 LOCAL SELF-GOVERNMENT UNITS IN SERBIA

In line with the indicators used by Swiss PRO EGDI 2018, that is, the quality of e-Services, capacity and readiness of LSGs for the implementation of e-Services and IT literacy, perceptions and satisfaction of the beneficiaries of e-Government services, Vojvodina LSGs are generally better placed than other municipalities, while the city of Zrenjanin is the leader on the list, with 67.8% of the indicators met. Highly-positioned large cities such as Zrenjanin, Novi Pazar, Pančevo and Šabac have invested significantly in the development of the website, hardware, software and data security in the past years, while well-off municipalities such as Knjaževac, Sremska Mitrovica, Vrnjačka Banja and Bečej have increased number of functional e-Services on the e-Government portal. Generally speaking, smaller municipalities have weaker results, which has been expected.

City Ranks

Zrenjanin, Novi Pazar and Pančevo are the most highly ranked cities, while Kruševac, Vranje and Užice run the lowest rank. The three lead cities have updated websites, offer the biggest number of e-services, have capable IT administrators and have significantly improved their technical capacities[2], in line with interoperability standards. On the opposite end, the Kruševac has low scores for most of the indicators in Part One and Part Two of the questionnaire. Užice and Vranje have no developed e-services and their websites require significant improvements.

Municipal Ranks

Knjaževac and Vrnjačka Banja have the highest scores for most of the parameters. These two municipalities have improved their overall e-Government capacities in line with the prescribed standards and legal framework. Knjaževac and Vrnjačka Banja are the only municipalities which have functional e-services on the e-Government Portal. Also, both municipalities have good internal organisation and communication. Vrnjačka Banja is the only municipality which uses e-ZUP for internal exchange of data and documents. In addition, both LSGs have capable human resources and informed heads of administration. On the other hand, municipalities with the lowest ranks (Preševo, Ćuprija, Ljubovija and Svrljig) have scored low or no points for most of the indicators.

Swiss PRO participating LSGs[3]

Even the LSGs with the highest rank have room for improvement. For example, the highest ranked Swiss PRO participating LSG, Novi Pazar, has scored 59.3% of the total points (352.5 out of 590), whereas the LSG with the lowest rank (Preševo) has fulfilled only 10.6% of the maximum score (62.5 points). The majority of the LSGs have scored between 150 and 250 points (significantly below 50%). Thus, there is significant room for improvement, as detailed in the LSGs Action Plans, prepared based on the outcomes of the assessment.

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[2] They have recently procured hardware, licensed software and improved the overall security of the IT systems
[3] Swiss PRO Programme Area of Responsibility: https://www.swisspro.org.rs/en/onama/gde-radimo

Ranking by Statisctical Regions

It is also interesting to look at the municipal ranking by statistical regions. The best ranked municipality in South-East Serbia (Knjaževac) had scored 335.5 points (56.9%). Novi Pazar, the best ranked LSG in Šumadija and Western Serbia statistical region has scored 352.5 (59.3%), whereas the leader in Vojvodina, Zrenjanin, has fulfilled 68% of the indicators, with the score of 401 point. Preševo is the LSG with the lowest rank in South Serbia (62.5 points, or 10.6%). Ćuprija is at the end of the list for Šumadija and Western Serbia region with 87 points (14.7%), whereas the LSG with the lowest score in Vojvodina is Kovin with 114 points (19.3%). Similar to the EGDI 2014, the overall results by statistical regions indicate that e-Government status and capacities in South-East Serbia, with lower level of development, are somewhat lower than in the other regions, while, expectedly, Vojvodina LSGs have the best overall performance.

Comperison of findings with EGDI 2014

Part One of the index refers to the content and design of websites and availability of e-services on the website. It corresponds with the EGDI 2014, and, therefore, allows a reliable comparison of the LSGs scores in 2014 and 2018. Similar to the overall index, Zrenjanin and Novi Pazar have remained at the top of the list, while small municipalities are, again, at the end of the list. Approximately one third of the 60 assessed LSGs (38%) did not make any further progress in their website content, design and other assessed features in Part One, whereas 16 (27%) showed improvements and 21 (35%) have deteriorated compared to the results of the EGDI 2014. Most of the LSGs with improved rank are, actually, those that have developed a new website, in accordance with the *Guidelines.* The most striking discrepancy in the results has been observed for Prijepolje and Preševo – both were ranked in the first group by EGDI 2014, whereas their 2018 rank is four.

Website Status

Almost a half of the municipalities (51,7%) have outdated websites, which do not correspond with the [GOITEG](#)'s standards, with very poor structure, content and design. This means that as many as 31 LSG are candidates for new website development or substantial improvement. In addition, even the modern, new websites that the other half of the municipalities possess require structure or content development, because they do not fully correspond the Standards. For example, the municipalities do not entirely follow the prescribed structure and design in the *[Decree on Web Presentation Design](#).* The Government of Serbia (GoS) suggest the development of a model LSG website, which will include all content, structure and design elements, as required.

Website Domain Names

The assessed websites of 60 municipalities have a wide variety of domain names. The LSGs stated that they had never received clear instructions or recommendations on the use of domain names, before the adoption of the *Decree on the Web Presentation Domain*. This is an important issue that needs to be further monitored by the GOITEG. All LSGs should have the same, uniform domain name, as specified in the *Decree* (gov.rs). The situation with the use of e-mail addresses is even worse. Approximately one-third of the surveyed LSGs need to address the e-mail domain name issue. The Government of Serbia has now reserved the domain names for all LSGs.

1.1.2. Status of key indicators – Part One: Electronic Service Provision

Out of 60 LSGs, 98.3% of them have included **general contact data and local administration structure** on the website. None of the LSGs have published all relevant **budget-related documents and information**. Fifty-five (55) out of 60 LSGs (91.7%) regularly publish annual budget decisions, but instructions for budget preparation, budget revisions, data on budget execution, capital investments, data on budget hearings are less frequently published and only one-third of the LSGs have some sort of a citizen-oriented budget, presented graphically and narratively, in a comprehensive way. Budget revisions are published selectively, or are not published at all. Draft budgets are almost never presented for online public hearings. All municipalities publish **public procurement data** which are legally required, on the Public Procurement Portal. However, not all of them publish all information and documents. Also, the quality of information is questionable and there is no possibility to generate statistics on the number of interested bids, number of received bids, awarded contracts and it is not possible to monitor contract execution (either in terms of financial transactions related to the contract, or quality control). Out the 60 LSGs, 66.7% have published some information on **public hearings**, but none of them have a comprehensive webpage, which would have a chronological record of all public hearings held in the past three years. Fourty (40) LSGs have some published calls on the website, but only two out of 60 have published information on any public hearings on the e-Government Portal. Twenty six (26) out of 40 LSGs have published draft documents along with the public calls (on the website, but not on the Portal), while seven (12%) offer a possibility for online submission of comments and only eighteight (13%) have published information on public hearing outcomes.

In 2018, 42 out of 60 LSGs' (70%) published instructions for submission of **request for information of public interest** in a visible place (while all of them have it published in the Information Booklet). Thirty eight (Thirty eight) out of them have published the application form along with the instructions and 17 offer an option for online request submission (28%). Fifty seven (95%) of the LSGs regularly publish **information on public calls for applications for funding** and 42 out of them provide application forms with instructions. However, only one (Bački Petrovac) makes it possible to submit the form online. However, information on **implemented and prospective projects** is less transparent. Only 27 LSGs (45%) regularly update information on projects and only 20 (33%) provide links to and information about available sources of funding. While 40 out of 60 LSGs have some general information about **local economic development** available, only 21.7% of them have published an updated database with relevant statistics on SMEs and investors and doing business, in general. Sixty per cent (33) offer updated information on locations and 55% (30) have published guides for investors. However, only about one-third of the LSGs have published the information on available incentives, subsidies or tax holidays for investors and the information on available workforce.

None of the LSGs have ensured easy and user-friendly **access to information and services to the PWD** in their communities. Nine LSGs have an interactive accessibility map; however, these maps need to be regularly updated. Only five of them have published a *Guide for Accessibility* with information on facilities and infrastructure (ramps, etc.) for the PWC. Accessibility standards, legal framework and information on relevant institutions is almost unavailable - less than 10% (four to five) LSGs have published any of this information on their websites. Only seven LGS have website adaptability options for these groups of

the disabled, such as enlargement of letters, and only two have sound options (Kragujevac's new website, launched after the assessment was completed and Kuršumlija). None of the websites offer a narrative description of visual presentations (photos, graphs or pictures). Thus, this is a key area for improvement in the forthcoming period, also recognized in the LSGs Action Plans.

Although **archiving** has received particular attention in the Decree on Web Presentations, most of the LSGs do not do it properly and regularly. Only one-third (23) LSGs had a separate *Archive* tab, while most of them archive only news, which can be filtered by key word or year of publishing. Eleven LSGs have kept the link to their previous (outdated) presentation, where older content can be accessed.

The **available documents** can be downloaded from LSGs websites in all assessed LSGs (issues with accessing documents were reported in only three LSGs, due to technical problems, but at the time of the assessment they had already been working on improvements). However, most of the documents are downloadable in PDF or doc format and not in machine-readable format. LSGs are familiar with the possibility to post data sets on the *Open Government Portal*, however, they are facing issues with preparing updated, machine-readable tables. So far, only Šabac and Pančevo have published any data on the Portal.

About a half of the LSGs have presence on **social networks**, mainly through a regularly updated Facebook page. Ten LSGs update their Facebook pages in almost real time and 15 LSGs (25%) have reported that they share news, blogs and relevant information through the RSS channel. While none of the websites allow citizens to post comments, this is possible on the Facebook page. A number of municipalities have reported issues with inappropriate comments (at the focus groups), but they pointed out that they could not afford a social network moderator. In 13 LSGs, mainly PR and communications officers act as Facebook moderators.

Availability of e-Services on the e-Government Portal

As evidenced on the e-Government Portal, only 24, out of 60 LSGs (40%) have published any services on the e-Government Portal, but only few LSGs offer e-Services. For example, Šabac is an absolute leader, with 124 services published on the e-Government Portal, but only four of these services can be fully executed electronically. Loznica, Zrenjanin, Novi Pazar, Vrnjačka Banja, on the other hand, offer a great number of fully executable e-services. Also, Tutin was among the first LSGs to introduce e-services on their website and the Portal; however, the instructions and forms have not been updated for a while. Similarly, the quality and accuracy of many published e-services is questionable. For example, Vrnjačka Banja reported a serious issue with wrongly paid taxes, due to outdated information on the e-Government Portal. At the time of the assessment closure (December 2018), none of the services were paid online yet, although the option of paying by credit/debit card was enabled on the e-Government Portal. Local governments do not seem to have a habit to publish calls for applications, invitations for public hearings and other public calls on the e-Government Portal. Except for Novi Pazar (23) and Šabac (ten), only five LSGs have ever published any calls or announcements on the Portal.

e-Services on the website

The only e-Services offered on the LSGs' websites refer to the **Civic Registry** and Citizenship Certificates. Electronic civil data registry is functional in 90% LSGs, to the point that documents can be collected at the Citizen's Assistance Centre (CAC) and to a lesser degree, to be sent to home address by regular mail. All LSGs have migrated the civil registry of vital records[4] to the Central Government's Server (CSM) in the format that supports e-Government. By December 31, 2018 they were also expected to migrate the **Citizenship Registry** and **local tax administration (LTA)** to the CSM. For most of other LSG services[5], information is available online, but requests cannot be processed or submitted online, nor can the documents be delivered to home address. About two-thirds of the assessed LSGs make use of a **geographic information system (GIS),** but GIS data are available on the website in only 13 LSGs, where they can be downloaded or used interactively. In seven cases, GIS can be viewed, but cannot be used interactively. About one-half of the LSGs have an **electronic system for reporting communal problems[6]**. However, only 13 of these systems show all reported problems with their status in a systematic and transparent manner and only 12 of these systems are able to generate statistics. Vojvodina municipalities offer some of the best practice examples of efficient an effective communal problem reporting.

Unified Procedure for Construction Permitting (CEOP)

All surveyed participants agree that the CEOP procedure has brought many improvements, especially when it comes to communication among the relevant institutions and respecting the prescribed deadlines. However, some LSGs emphasize that deadlines cannot be the same for all requests – there needs to be some flexibility in specific, complex cases. In addition, issues with bugs, poor functioning of the system, blockages and malfunctioning of the electronic certificates have been reported by about 20% of the LSGs.

Language and Script

All 60 LSGs have an official version of the website in Cyrillic script, whereas the Latin version is only available in 35[7]. All bilingual, or multi-lingual local communities have presentations in both official languages, but some of Vojvodina LSGs have expressed a need for improvement of the presentations in Hungarian language. English version is available in 40% of the websites. With the adoption of the *Decree on Website Design*, identical presentation in English language is no longer mandatory. The **search** options have to be improved in about 50% of the LSGs where, either the search option is dysfunctional, or cannot be effectively done in all languages and/or scripts. Still, in 83% of the cases the search by key word works.

Navigation

Out of 60 LSGs, 43 have multiple navigation options[8], while only 29 (less than 50%) have a comprehensive website map. Multiple navigation option is an important feature of web presentation design from the PWD angle.

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[4] birth, death and marriage certificates
[5] Such as the right to child welfare, maternity compensation, report to inspection, etc.
[6] one-way reporting, System 48, or some other customized IT tool
[7] The Cyrillic and Latin presentations are identical in 31 cases
[8] 53 have banners, links to contents and sub-menus

Website structure - key sections

The LSGs, in general, have all key section in 95% of the cases, except for the Archive and Registry sections.

Interoperability standards

Interoperability standards need to be further pursued in all LSGs, in terms of improvement of network protocols, machine-readability of databases and, primarily, security of the system[9].

Web-administration

Forty two LSGs have an in-house web administrator, while the remaining 18 have outsourced these services to the company which designed the website, or on-call administrator. About 10% of the LSGs do not have competent web administrator (or it is done as a side job, by an employee with a non-related job description).

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[9] e.g., SSL protection – https, authorization to access data, and protection of publicly available e-mail addresses from robot use and spamming, etc.

1.1.2. Status of key indicators – Part Two: Readiness of LSGs for e-Government

According to the second set of indicators (Part two of the questionnaire), the LSGs which have scored best, again, include Zrenjanin, Šabac, Vrnjačka Banja, Sremska Mitrovica, Novi Pazar and Knjaževac, Kikinda and the City of Niš. These are the LSGs which, mainly, have larger budgets and have invested more in improving their hardware and software (including licenses and overall security of their systems). All 60 LSGs have introduced e-ZUP, to some extent; however, those at the end of the list (Ljubovija, Vladimirci, Ćuprija, Požega, etc., typically, lack electronic case/document management system (elektronska pisarnica) or use it only to some extent.

Server room availability and basic equipment

Although 40 LSGs claim that they have a server room, only 14 big cities, have a specially equipped space, with none of the employees using that room as an office. The servers' security and level of protection is low – some LSGs lack minimum conditions, such as proper air-conditioning and in almost 50% of the cases there is no effective fire protection. Migration of data to the Government's CMS is seen as a long-term solution, especially for smaller municipalities. Kragujevac has developed its own virtual server system which will cover the entire local government system.

Hardware, licensed operating systems, application software and customised software solutions

Less than one-third (19 out of 60) LSGs have adequate quality hardware (brand name). Twenty five LSGs have a combination of good and poor-quality **hardware**, whereas 15 reported that they had no brand name computers and, mainly, old and outdated desktop machines, which do not have sufficient capacity to meet the e-government requirements. 60% of the LSGs face serious issues with outdated **operating systems** which are not compatible with modern technologies (Windows XP, Vista, which, for example, do not support e-ZUP) and/or licensed operating software. Only seven out 60 LSGs have confirmed the use of registered **application software**. The state of technical equipment and soft tools is, obviously, a significant obstacle to proper introduction of e-Government. However, an insight into the LSGs budget has shown that, despite the minimum standard requirement only those which operate with larger amounts can afford to procure for and maintain expensive hardware and software.

All assessed LSGs use some **customized software solutions**, including the accounting software, information systems for property management, local tax administration, or keep data in simple Access programmes and web applications. Some LSGs have capable programmers, who develop various customized tools. Others have acquired software through donations, or have procured them. It has been reported that some of the outdated software solutions are not compatible with the low performing hardware and operating systems (which is the reason why some of them avoid complex upgrades of their computers and operating systems.

Human Resources in IT Sector

All surveyed LSGs struggle with human resource capacities in the IT sector and many of them are forced to outsource these services. Most of the LSGs with highly capable IT persons are also understaffed. Inđija Municipality is the only LSG which has an IT Agency, with eight employees, and the City of Niš has a Secretariat for IT, with more than 30 employees, while smaller LSGs have one, full or part-time

programmer who cannot physically cover all IT needs. The Agency employs highly capable human resources, including programmers, who develop various information systems, offered commercially to other LSGs. LSGs in Serbia are restricted both by the inability to employ new personnel and by the salary limitations. IT personnel is not adequately paid – all IT administrators with stronger capacities, who can work as programmers, tend to leave public service and get employment in international IT companies.

Network, hardware and software security

Network, hardware and software security is the least respected interoperability standard. About 80% of the 60 LSGs have a well-developed, professionally wired **network**, while the rest have a partially developed network and would need financial support to improve it. About a half of the LSGs ensure network administration via domain, while the other half does it through "work groups". At the time of the assessment, 35% (21) LSGs did not adopt the *Internal Act on IT Security[10]* within the legal deadline. Most of those who have adopted it, have just copied the model prepared by the GOITEG, to fulfil the legal requirement, although this should be the governing document in ensuring the specific systems' security requirements. Other security issues that need to be faced, as a prerequisite to the CSM use and introduction of e-Government are **licensed anti-virus programmes** (about 30% of the LSGs use *Avast* or some other free-of-charge software, which does not offer reliable anti-virus protection), **appropriate firewalls and website protection (SSL),** as well as **a strong password system.** Thirty eight LSGs **back-up** data on daily basis, while others do it weekly, or even less frequently. One of the issues is that backed up data are predominantly kept in the same (server) room, or on CDs which, might not be secure enough (for example, in case of fire). The minimum security-related standard requirements can be fulfilled only by the LSGs with larger budgets.

Security of e-Services

Online issuance of birth, death, marriage and citizenship certificates on the websites is, generally, not secure. Theoretically, anyone who knows a personal identification number (PIN) could order documents on behalf of that person. Only Bečej offers an option for service users to check the history of their requests, by using the PIN as log-in password.

Internet Quality

Internet quality is good. The only municipalities which have reported issues with the internet are Knić and Raška.

Data management

Although of central importance for proper e-Government functioning, data are, generally, not managed properly, nor are they properly regulated at the organisational level. The assessment has shown that only 14 out of 60 LSGs have adopted some form of internal regulations, while the majority have only informal, or no agreement on steps and responsibilities for management of different sets of data. Establishment of a proper procedure is seen as a prerequisite for functional e-Government at the local level.

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[10] Internal Act on IT Security, February 2018.

Institutional framework and human resource capacity for e-Government

Formally, the LSGs have appointed two system administrators, who communicate with the Super Administrator of the e-Government Portal. Considering a low level of e-service provision, the administrators are mainly in charge of e-ZUP, which is functional, to some extent, in all municipalities. Also, all LSGs have certified employees for e-Government access and use; however, in most municipalities only one or two persons actually use e-ZUP, while posting of e-services on the Portal is entirely left to IT administrators, who are not competent for regular updating of the substance (instructions, forms, information on taxes). Generally, IT administrators complain that they are overloaded with work and that they cannot effectively manage the system. Also, some complaints were heard about the inefficiency of the Super Administrators – according to them, they are not sufficiently responsive and sometimes it takes weeks before they respond to requests, or before the submitted IT services are actually published.

Electronic Case Registry – Document Management System

At the time of the assessment, 60% of the LSGs had the electronic case registry established and in use, whereas 11 LSGs had recently bought the software and were in the process of establishing it. The main challenge with the electronic registry is not to have it in place, but to put it in full use (including all procedural steps from receipt, registering, opening and sorting of cases, to their proper processing and archiving. Electronic Registry – DMS is a prerequisite for communicating with the Central Meta-Registry and CSM use.

eZUP Implementation

All LSGs have fulfilled formal conditions for e-ZUP use – they have appointed two Administrators and obtained certificates for all employees involved in any of the procedures. The only LSG with zero activity is Preševo. However, in most LSGs, only two to three persons use e-ZUP, except for some bigger cities and Vrnjačka Banja. Vrnjačka Banja is the only LSG that uses e-ZUP for internal data and document sharing. The following table provides an overview of requests for data addressed to the institutions included in e-ZUP.

1.1.3. Status of key findings – Part Three: IT Literacy, Telecommunications and Internet Use

According to the national level statistics (National Statistics Office - NSO and former Republic Agency for Telecommunications – RATEL), Serbia is a relatively IT literate society, with 68.1% of the households and 67.7% individual computer users. In September 2018, Serbian citizens had more than one mobile telephone device *per capita* and, for the first time, the percentage of internet use exceeded computer use (76 out of 100 mobile network subscribers use the internet). Compared to 2016, in 2017, mobile Internet use has doubled, now amounting to 97 million GB. Typical internet users have secondary or higher-level education. According to the National Statistics Office, in 2018, 37.3% of the computer users have used e-services at the e-Government Portal; 31.3% of administrative service users were able to obtain online information about the procedures, 20.2% used public institutions' websites for downloading forms, 16.8% filled online applications, 30.9% of the Internet users have ordered or bought goods or services online in the last quarter of 2018. About two-thirds of Serbian internet users actively search for information, goods and services online, or use social networks; however, only one-third seems to be ready to use the e-services. Considering the fact that the number of mobile internet users is significantly higher than the number of citizens who use personal computers, e-services are more likely to be accessed and used via mobile phone applications.

Citizen and Business Sector Survey Results

The **citizen and business sector surveys** were, done on a much smaller scale and sample than the NSO or RATEL's one, indicates that our survey's sample did not include the same population structure – the respondents are mainly from urban areas, aged 25-50. Computer use 9 8% of the respondents and 94.7% use a smart phone[11]. The number of internet users, according to the survey sample is 96% (compared to 68%) in the national survey results. The surveyed business representatives use internet and smart phone 96.8% . The very structure of the sample creates expectation of an IT-literate group of prolific internet users. This can also be explained by the fact that the survey was performed in urban areas and online – thus, it targeted more computer literate population.

The business sector survey sample is dominated by micro and small enterprises (96%), half of them SMEs and the other half entrepreneurs. Only one-third of them have an updated website, which probably means that online marketing and representation is not crucial for their business.

Use of online services

According to RATEL, 32% out of Serbian citizens prefer online communication to face-to-face communication at a counter, when dealing with public administration and 37.3% have had an opportunity to use e-services, but only 16.8% out of them could, actually, submit an online request. Online shopping have done 30.9% of the internet users.

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[11] The question in the survey was formulated differently to identify smart phone users

Online activities

Business sector predominantly uses e-signature (71.8%), whereas 28% of the surveyed citizens have reported that they have a token and/or an ID card reader and 53% pointed out that they have never needed it, so far. The focus groups revealed that most of those who applied for a token did it only when they could not complete a service without it. On the other hand, business sector needs electronic signature for submitting electronic financial reports, e-banking and signing other business documents **Business sector uses e-banking more than citizens** (70.5% compared to 61%, but are less interested in online shopping (37.5%) than citizens (68%). While 23% of the citizens **pay their bills online**, none of them have paid electronically for LSG e-services.

Use of LSGs website

The private sector is more active in looking for information or using services on the website (95%, compared to 76% of the surveyed citizens). Common complaints by the survey citizens are that information on the website is presented unselectively, it is complicated to find documents and information, there is too much information, unsystematic data, and dysfunctional two-way communication.

Neither surveyed citizens, nor business people are well informed that they no longer have to bring piles of paper in support of getting access to a service, if they authorize officials to do that on their behalf. The reasons for that lie in the fact that this not all LSGs fully implement the procedure and it is not well promoted.

Use of e-Government Portal

The majority of citizens and businesses are aware of the e-Government Portal; however, only few have been able to complete an online form, upload the proof of payment and get the document to the home address. This indicates, a very low functionality of e-Government: either LSGs do not have them on the Portal, or there is only information and form in PDF available. In some cases, they have given up because of the system error. All identified issues should be solved by the new e-Government platform, due in November 2019.

The private sector and businesses look for different types of e-services.

Issuance of personal documents (ID, driver's license, passport, etc.) has been the most commonly sought services. These services have been the first to be offered on the e-Government Portal and Serbian citizens could get familiar with their benefits over a longer span of time. Issuance of civil registry certificates is the second most used e-service. The private sector is most interested in business registration, electronic submission of financial statements, CEOP, documents and certificates related to doing business, insight into the tax account, spatial planning documents. Interestingly, only one-third of the surveyed business sector representatives saw public procurement as a priority, presumably, because most of the sample does not participate in procurements.

Negative experience with LSGs' e-services

Negative experience with LSGs' e-services includes system errors, poor connection, bugs in the system, only a limited number of offered services, complicated access and registration procedure, unclear

instructions, slow service, but, also, personal reasons, such as a lack of scanner at home, lack of token, computer, etc. The comments also indicate that dysfunctional e-services demotivate citizens to use e-services. Citizens and businesses suggest that **first, all technical issues should be solved and, then, a massive awareness-raising campaign should be organised.**

Surveyed citizens suggest introduction of the following e-services: information on local job vacancies, online tax management, online Assembly meetings, black-lists of non-performing investors and contractors, application for public transport subsidies, e-Inspection, e-Cadastre, online enrolment for primary school.

Surveyed businesses are mainly satisfied with the offered e-services, but complain mainly about a lack of feedback from support staff, think that the technical solution for the e-Government portal could be better. Not rarely, both the business persons who filled the questionnaire online and those who participated in the focus groups complained about insufficient transparency, poor inspection service and resistance of the public sector to e-service implementation, because it reduces opportunities for corruption.

Surveyed business representatives suggest the following improvements: further work on improving electronic communication of the private sector with public institution, full introduction of e-services, to the level of receiving ordered documents to the company's address or, better, in electronic form, in their mailbox. They would benefit from centralised registers[12]. The business sector points out the importance of ongoing, two-way electronic communication related to all services, to ensure timely information and warning of customers, including all LSG services, parking and communal services, inspection, communal police, etc.

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[12] For example, of taxes and contributions, so that the account status can be checked and the debt paid online

1.2. THE KEY ISSUES AND CHALLENGES

The LSGs lag behind the e-Government agenda. The analysed LSG sample indicates that after a decade of e-Government Portal implementation, less than a half of them have, even, posted services on the Portal. Those who have published some e-services, struggle with regular updates and are, mainly, at the level of providing information and request forms.

Only few municipalities have launched fully functional services – they need technical support, to prepare the instructions, documents and to keep them updated.

Migration of databases to the CSM (Central Government's Data Centre) has significantly contributed to the accessibility of e-services related to civic registry, citizenship and LTA. In addition, the GoS and the GOITEG recommend inter-municipal cooperation and use of common servers (sharing of IT and human resources by a two or more LSGs).

Most LSG websites support one-way communication only. Most of the assessed websites offer current information, news and links to documents. According to the website analysis, only a limited number of LSGs' online presentations offer some sort of two-way communication - e.g., some websites allow citizens to ask questions (16.3%), submit online requests for birth, marriage and death certificates; or report a communal problem online (53.3%). Even these rare examples, in most cases, do not include feedback to citizens on the outcomes or statistics on service provision. This finding is supported by the citizen survey results (80% visit websites to get informed and only 20% have used it to ask questions or file specific **requests).**

Coordination of activities with the GOITEG. About one-half of the surveyed LSGs emphasized that they have already had intense cooperation with the GOITEG in the past six months, particularly with bigger LSGs. All e-Government-related activities at the local level, including technical support provided through international assistance, need to be agreed upon and coordinated with the GOITEG. Technical assistance needs to be provided in the process of implementation of the four newly adopted Decrees.

Adequate monitoring and control mechanisms of e-Government progress and results are currently missing. Annual self-assessments of LSGs' web presentations will be helpful as a mechanism of continuous learning. However, regular monitoring and control of the content and completeness of information and e-services will add to the quality aspect of web presentations. The GOITEG as the manager of the e-Government process and citizens and businesses as e-Government users should develop a monitoring system that would measure the e-Government progress in LSGs at the *input, output, outcome* and *impact level*.

Inefficient communication with the Super Administrator of the e-Government Portal. e-Services are not published on the e-Government Portal automatically – they first need to be approved by the Super Administrator - sometimes it takes days before services or public calls are published. Also, a number of local system administrators have reported that the Super Administrator is not always readily responsive to requests for technical requests.

Bugs and errors in e-Government system functioning and structure/organisation of the e-Government Portal is expected to be significantly improved by the new e-Government Portal platform, which is currently being developed.

Standardization of e-Services on the e-Government Portal. Some LSGs have duplicated the services, because their names are not chosen from a unified database. This creates a lot of confusion. The standardised list of services is expected to be ordered and organized in a better way on the new e-Government Portal, including a drop-down menu and improved search option.

Campaign for Citizens. No LSG has had a significant campaign for citizens to use e-Government. Most of them claim that, first, the system has to be established and become functional, before it is promoted. Otherwise, it would have a negative effect on citizens who are, anyway, reluctant to changes and new technologies.

Decision-makers do not sufficiently support e-Government. Decision-makers, including, the Assembly, Mayor and members of the LSG Council, generally, do not have sufficient understanding and do not see introduction of e-Government as a priority. Decision-makers should address this issue at the policy level.

Roles and responsibilities for managing e-services are not clearly defined at the level of organisational units. Most of the assessed LSGs expect that their system administrators will publish and maintain the services published on the Portal. This results in unreliable services and increases users' dissatisfaction. This is, mainly, due to the fact that none of the assessed LSGs have a developed procedure for implementing e-Government at the organisational level.

Management of e-services is not included in the scope of work of organisational units and individual job descriptions. In line with the *[Law on Employees in Autonomous Provinces and LSGs](#)*, the Rulebook on Internal Organisation and Systematisation of Job Description provides a framework for organisational units' scope of work and individual job description. Implementation of e-services is not commonly included as a mandatory part of job description. Furthermore, the Law requires definition of annual objectives for each LSG employee with a public official status. These objectives create a basis for evidence-based evaluation of employees' individual achievements.

LSGs lack human resources for e-Government. The issue of human resources is a complex and multi-faceted one. Small LSGs usually have one or two lawyers, who are overwhelmed with work and are not interested in e-Government, as long as decision-makers do not see it as a priority.

Inadequate internal communication. E-Government combines different areas of LSG functioning with IT. Such an integrated approach is not well-understood by decision-makers and, in combination with the prohibition of employment in the public sector, this creates a perception of digitalisation and introduction of e-Government at the local level as marginalised activities. Employees in charge of services do not need to be IT experts, but they must have a basic understanding of how e-services work. On the other hand, IT experts – e-Government Portal administrators, are not experts in legal and financial matters, public procurement, asset management, inspection services, environmental protection, etc.

Therefore, they depend on "subject matter" experts, who need, not only to prepare the content of e-services, in the prescribed form, but to ensure that they are regularly updated in line with the legislative changes, relevant LSG's decisions (e.g., on taxes) and modified formats and templates. Currently, none of the 60 LSGs have a well-defined process of data collection, management and use.

Inadequate data management. Effective and efficient e-Government services, to a great extent, depend on the integrity, reliability and accuracy of data systems. If data are not kept in an appropriate manner, a number of issues can arise, such as inadequate personal data protection, outdated instructions and forms for e-services, etc. In addition, e-Government requires involvement of professional staff scattered around different organisational units, who should be responsible for regular updates of documents and databases. With that in mind, the GOITEG has suggested adoption of an internal act on data collection and management.

Internal case/document management is not adequate. Use of an electronic registry/case management system has become mandatory by the *[Decree on Electronic Case Management](#)*, but its particular significance for e-Government is introduces by Article 10 of the newly adopted *[Decree on Keeping Meta-Registry, Approval, Suspension and Cancellation of Access to the Central Government's Server and e-Government Portal Functioning,](#)* which explicitly states that electronic requests for placing e-services on the e-Government Portal is done through the electronic case management system. In December 2018, only 60% of the surveyed LSGs had the system established, but most of them used it only for receiving and registering mail and cases. The new by-laws create yet another challenge for LSGs – to ensure that the entire process is managed from case receipt and registering, through processing, to closing and archiving.

Inadequate technical conditions for introduction of e-Government. The key issues include low performance and inadequate security of servers, hosting location of web presentations, old or outdated hardware, unlicensed or outdated operating systems and application software and low-level security of web presentations, hardware and software. However, the GoS does not intend to fund hardware and software licensing and security measures at the local level. This is, entirely, a responsibility of LSGs. In addition, the GoS has established IT inspection, which will check on the hardware, software and security stats at the local level.

Examples of dysfunctional websites and e-services. In the course of the assessment, many examples of limited or impaired functionality of LSG websites and e-services on the Portal were reported on during the focus groups with LSG representatives, citizens and businesses, but a number of bad practice examples are still accessible online. The most common dysfunctionalities include inadequate error notifications, errors notification with incomplete information, display errors and issues related to the visual aspects, empty web pages which announce e-services, without stating the expected time of their publication, wrong or dysfunctional links to other web pages, documents or social networks.

1.2.1. Identified Best Practices

Successful examples of multiple, **functional e-services** have been found in several LSGs, but the best examples are Inđija and Smederevo. Bečej is one of the highly ranked municipality, mainly for several **innovative e-Government solutions**. In addition to asking the mayor, the citizens of Bečej can, also, *Ask an Assembly Member* and watch the Assembly meetings online. The **Assembly has a separate webpage** with electronic assembly sessions, real-time broadcasting of sessions, and all documents for the Assembly members in electronic form. Novi Pazar and Inđija also provide online broadcasting of Assembly meetings.

In Bajina Bašta, an electronic announcement board is displayed on the website's main page, which contains various, regularly updated, information on public hearings and public insight, information about public procurements, contests, calls for applications, relevant communal information etc. Each link, also, appears on a relevant web page or section. Vrnjačka Banja has a similar electronic board. Establishment of a public announcement board on the LSG's website has become mandatory by the adoption of the *Decree on the Web Presentation Design.* Inđija has **a fully functional Electronic Case Management System**, from receipt of requests, through document management, to archiving. Several LSGs in South-West Serbia have an **Electronic Register of Administrative Procedures**. This is a good IT platform which could be further developed. The Law on Electronic Government envisages that a Centralized Registry of Administrative Procedure. In addition to well-known software solutions, such as *System 48*, Inđija has **a unique GIS**, LTA software (linked to GIS) and many other customized solutions for internal use, the IT Agency has developed an **IoS/DOS configuration for *Smart City* mobile phone application.** In addition to transparent information on issued permits, per category, Bački Petrovac has an interest in **helping citizens to submit proper documents and avoid common mistakes in the construction permitting procedure.** Babušnica and Tutin municipalities have a **property tax calculator** on the website, which is the legacy of the European PROGRES Programme. This is an example of user-friendly information published on the website.

Most LSGs publish scanned documents (decisions, rulebooks, administrative acts) and sometimes, even, do not provide clean text of the amended documents. In Bečej, **information on public hearings** is always published on the front page, and the announcement is made early enough. In addition to the invitation to participate in public hearing, clear instructions are provided, with downloadable draft document(s) and a template for submitting comments. Raška has a functional electronic **application for submitting requests for access to information of public interest**. The multiple-choice questions allow filtering by the type of information sought and serve as a simple monitoring system to the municipality. Also, citizens get a notification of their submission and can choose how they want the document to be delivered to them. Smederevo is one of the LSGs which have their own e-Government Portal, including an online form for problem reporting. The form includes information on what the personal identification number (LIB) and unique citizen's identification number (JMBG) are (and how they are used), including a warning note against misuse, which is controlled by insight into users' internet protocol (IP) address. Kikinda has developed its own, **customised tool for managing communal issues** reported by citizens. The system also serves as a **communication tool with public utility companies** and for monitoring their efficiency and effectiveness in meeting citizens' requests (LUPA System). Bečej has a Call Centre for communal

problem reporting – regardless of whether citizens' have reported an issue by telephone, e-mail, in person – at the counter, or online, all requests are entered in an information system which contains transparent information shared on the websites. Vrbas has **automatically calculated statistics on processed e-services** and a comprehensive database of current and completed public procurements.

2. RECOMMENDATIONS AND CONCLUSIONS

Recommendations for the Government's Office for Information Technologies and Electronic Services

- Provide further training and support to the LSGs in the implementation of the *Law on Electronic Government* and the by-laws;
- In developing a standard list of LSG's electronic services on the e-Government Portal, take bottom-up feedback into account. Currently, the names of e-services are not unified (the same service may appear in several variations);
- The new e-Government Portal should contain a drop-down menu with all services listed. This should ensure that the same services appear under the same name, as well as an effective search engine by e-service, key word, area and other filters;
- Develop a model Rulebook on Data Collection, Maintenance, Analysis and Use. Adequate data management is essential for effective e-Government. The assessed LSGs have expressed it as a priority need;
- Develop more detailed guidelines/standard procedures for archiving of old and/or outdated content on the LSG's website;
- Develop a monitoring system for e-Government implementation at the local and national level.

Recommendations for Local Self-Governments

- Adopt a systematic approach to e-Government introduction and development. This includes proper action planning, adequate regulatory, institutional framework and a step-by-step approach in implementation and monitoring of e-Government at the local level;
- Establish a Task Force for Introduction of e-Government. Establishment of electronic government is a complex and slow process and, therefore, it cannot be a side activity;
- Adopt an Action Plan for Introduction of e-Government. The LSGs which have participated in this assessment have received technical support in the preparation of their e-Government Action Plans;
- Adopt e-Government Policy or Strategic Framework. This is a very significant "umbrella" document, a decision-makers statement that they are pro-electronic Government and LSG modernisation in line with public administration reform processes;
- Conduct a public awareness campaign prior to e-Government action plan implementation. It will help introduce key e-government concepts, objectives, measures and activities taken by the LSG, from the perspective of e-Government users - citizens, the private sector and, particularly vulnerable groups (PWD, young people, elderly population, women, etc;
- Adopt Rulebook/Procedures as an internal act on e-Government introduction, implementation and monitoring. as a cyclical step-by-step process, with clearly defined sets of activities, roles and responsibilities of all actors in the process and timelines for each milestone in the cycle;
- Define internal lines and channels of communication and make the communication plan a part of the Rulebook/Procedures;
- Define the specific roles of each organisational unit and revise staff's job descriptions, to ensure that individual responsibilities for e-Government are clearly defined. Revise the Rulebook on Internal Organisation and Job Systematisation, in line with the new job descriptions;

- Include fulfilment of specific e-Government objectives in individual employees' goals at the annual level. Evaluation of employees' performance and a merit-based approach are mandatory by the *Law on Employees in Autonomous Provinces an LSGs*. Evaluation should be based on the fulfilment of specific, measurable, achievable, realistic (SMART) and time-bound individual tasks of each employee;
- Define training needs of LSG employees in e-Government. It is likely that introduction e-Government will be the focus of LSGs in the coming years. Staff training is also an obligation, introduced by the *Law on Employees in Autonomous Provinces an LSGs.* LSGs should define specific training programmes and budget funds for their delivery;
- Adopt a Rulebook on Data Collection, Maintenance and Use. Accurate and updated data are essential for professional e-services (and they come from various sources). Everyone employed in local administration participates in e-service delivery. Organisational units need to prepare accurate and timely information on e-services;
- Ensure that data are collected and kept in a machine-readable form, so that they can be shared publicly[13] and usable by other institutions and individuals;
- Increase security and protect website content by hosting it on the Central Government's Data Server (CSM). The by-law on web presentation design also recommends this;
- Continue migration of data to the CSM;
- LSGs should consider inter-municipal cooperation in sharing a server and IT staff;
- Establish a functional electronic archive. This includes: 1) digitalisation of old documents (scanning, photographing, transfer to machine-readable formats), 2) proper archiving of outdated website content and 3) use all modules in electronic case/document management system, which ends the cycle by archiving. Keep archived data safe, on a protected server;
- Ensure that e-ZUP is used by all e-certified LSG officials who have an official token/ID reader (new, official tokens will be issued by the MoI);
- Improve software and hardware quality to ensure interoperability with the central e-Government systems. This includes acquisition of good quality computers, licensed operating systems, application and antivirus software, firewalls and transfer of data kept in outdated customize software to standardised information systems which generate universally readable electronic data;
- Ensure adequate security of web presentations by introducing SSL protection, CAPTCHA codes, standardised website domain (gov.rs, upr.rs) and other measures prescribed in the *Decree on Web Presentation Design;*
- Improve accessibility of e-services for PWD in line with the prescribed standards, including the website structure and content;
- Ensure multi-lingual websites for all multi-ethnic LSGs;
- Increase possibilities for two-way communication with citizens through introduction of e-services, online submission of requests and complaints, transparent feedback and reactions to citizens' requests, e-Assembly, online communication with the Mayor and Assembly members, use of social networks to inform citizens, hear their comments and get wider community's feedback. Introduction of two-way communication requires competent PR and communications staff and appointment of website and/or social network moderators;

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[13] On the Open Government Data Portal, e-Government Portal, e-ZUP, website

- Increase responsible use of social networks. Currently, few LSGs update their Facebook pages in real-time, which is essential for proper use of social networks. Clearly define what information is posted on Facebook or Twitter and why (and who is authorised to publish it);
- Improve design, or develop a new website (depending on its current state and compliance with the adopted standards);
- Ensure clear division of roles and responsibilities for updating e-services and information in real-time, LSG's website content includes data and information which must be posted on time, be accurate and relevant;
- Everything should be available in machine-readable, electronic form. Use of hard copies has become outdated. The sooner LSGs understand that, the readier they will be for electronic Government in its true sense of the word;
- Define a framework, responsibilities and timelines for preparing e-service for publishing on the e-Government Portal. Each organisational unit should define an annual plan for preparation of e-services, which should, then, be posted on the e-Government Portal by the assigned administrator;
- Introduce all necessary organisational changes for the implementation of e-Government, including regular updating of e-services, handling electronic cases and requests, (opening of dedicated e-mail address), make the electronic case/document management system functional, and enable receipt of electronic payments made via the e-Government Portal;
- Support citizens to pay electronically for the LSG's services by making use of POS terminal, online payment option and QR code;
- Regularly inform citizens about newly published e-services and promote e-Government on the website, local media, in focal community points (billboards, posters, etc.);
- Regularly publish data on the Open Government Data Portal (OGDP).

Recommendations for the Standing Conference of Towns and Municipalities

- Assist LSGs by developing a Model e-Government Policy document for LSGs, in cooperation with the GOITEG and Swiss PRO;
- Develop a standard list of LSG's e-services, with easily adjustable model descriptions, instructions and forms. The SCTMs is seen as a reliable partner of LSGs. They are always grateful for model documents and recommended methodologies;
- Develop a new Model Rulebook on Internal Organisation and Job Systematisation, which would ensure that standard job descriptions include responsibilities for e-services related to their scope of work;
- Develop a Model Procedure for e-Government Implementation and Monitoring, in line with the *Law on Electronic Government* (in cooperation with the GOITEG and Swiss PRO);
- Support LSGs in the process of preparing specific (special) training programmes related to e-Government;
- Organise and moderate e-Government-related forums, focus groups and panels. Exchange of experience and best practices is a common, proven method promoted by the SCTM;
- Support preparation of e-Government Best Practices Manual, in cooperation with the GOITEG and the Swiss PRO. It can include local, regional and EU best practices in e-Government introduction and implementation;
- Support an awareness-raising session for decision-makers. The entire process of e-Government introduction has to be clearly explained to decision-makers, from different perspectives (decision-makers, providers, users), in a step-by-step manner, to reflect the order of priority;

Recommendations for Swiss PRO Programme (and Other Donor Programmes and Projects)

- Support Swiss PRO LSGs in the process of e-Government Action Plan implementation. Action Plans for improvement/introduction of IT and e-services were prepared by all 60 municipalities. Swiss PRO should provide technical assistance to the Programme-participating LSGs in the AP implementation. The Action Plans might need to be modified in line with the e-Government Strategy, which will be adopted by June 2019;

- Offer opportunity to the remaining 58 LSGs, which did not participate in the e-Government assessment to perform a self-assessment, by making use of the developed tool. Make the questionnaire available on the Swiss PRO website and invite LSGs to perform a self-assessment and inform the Swiss PRO on the results;

- Encourage remaining 58 Swiss PRO LSGs to prepare an e-Government Action Plan. Provide the AP model and template to the LSGs;

- Support annual (or bi-annual) assessments of e-Government progress in Swiss PRO LSGs (and other Serbian LSGs, in cooperation with the GOITEG and Swiss PRO). The assessment tool can also be used for measurements of the Programme's progress and successes;

- Publish best practices in e-Government, identified during the assessment. Issue a compendium of e-Government best practices in e-Government, or, at least, present some of them as success stories on the Swiss PRO website;

- Put focus on accessibility of the website by PWD and other vulnerable groups. Accessibility of the LSG website, e-Government Portal and e-services should be regarded as a cross-cutting issue. Swiss PRO should assist LSGs in ensuring accessibility as a priority task. The LSGs' Action Plans include improvements of website's structure and content in this respect;

- A standard website model should be developed. Swiss PRO should consider supporting the development of fine pilot templates;

- Provide technical assistance to the LSGs in establishing the strategic, regulatory and institutional framework for e-Government implementation. Support LSGs in adopting an e-Government Policy/Strategic Framework, Procedures and other internal acts related to the introduction of e-services and online two-way communication with citizens and businesses. Provide institution building, as needed;

- Strengthen LSGs technical capacities to support e-Government (improvement of hardware, software, website, security, etc.). Provide technical assistance in the fulfilment of interoperability standards;

- Assist LSGs to improve database and produce them in machine-readable formats. Assistance should include improvement of the existing databases, preparation of new ones and publishing data on the Open Government Data Portal;

- Provide technical assistance to LSGs in improving the existing and developing new services. Assist LSGs in developing a list of services to be introduced (based on the LSG reports, where the missing aspects are identified), present model descriptions, instructions and forms and help them customise them in line with their specific needs;

- Support LSGs in improving the quality of information and documents published on the website. This may include a qualitative review of the existing information and documents, with suggestions for improvements (e.g., related to budget, public procurement, public hearings, various registries, etc.);

- Provide support in the preparation of specifications for e-Government related procurements, including market research and analysis and proper formulation of needs;

- Provide capacity development of human resources for the implementation of e-Government. In cooperation and the GOITEG, organise and deliver training and exchange of experiences and best practices among LSGs, as needed;
- Support LSGs to use e-ZUP for internal data exchange. To date, Vrnjačka Banja is the only LSG which has included all municipal departments' official databases into e-ZUP. With their positive experiences in mind, other LSGs should also be supported to use e-ZUP for internal administration of data and documents;
- Organize LSGs' meetings with other institutions involved in e-ZUP, to improve their communication and cooperation. The assessed LSGs have reported less successful communication with certain institutions (e.g., Cadastre, MoI). It should be useful to bring them together to discuss how they can improve the effectiveness of official correspondence and communication;
- Provide support to the GOITEG in developing an e-Government monitoring system. At present, there is no effective M&E system and the GOITEG does not have a comprehensive picture of the individual LSGs progress. This can be improved by defining clear monitoring and reporting guidelines;
- Organise coordination meetings with the SCTM/GIZ and USAID/GAI projects in order to establish cooperation and synergy of the actions.

CONCLUSIONS

The e-Government Assessment in 60 LSGs in Serbia was an important follow-up activity after the initial assessment carried out in 2014. For the first time, this assessment also included the perspective of e-Government beneficiaries. This resulted in individual reports by municipalities, with identified shortcomings in the process of introducing e-Government, as well as ranking of LSGs in terms of the status and impact of their e-Government. Comparative analysis has shown that LSGs in northern and central Serbia have better results than those in southern and eastern Serbia. However, the most successful LSG, Zrenjanin, has met only 68% of the criteria, which suggests that e-Government at the local level requires further improvements and capacity development. As a result of this assessment, each of the 60 LSGs has created e-Government Action Plan, which should help them meet the requirements in a systematic way.

In response to the obtained findings, the Swiss PRO Programme will publish a public call - Support LSGs in Enhancing Overall Capacities for Improving of e-Government. Swiss PRO will support up to 40 LSGs through technical support and grants for procurement of equipment, improvement of the technical and technological basics for the implementation of e-Government and the provision of e-Services to citizens, and through the establishment of functional administration and processes at the local level.

List of Abbreviations

AoR	Area of Responsibility
AP	Action Plan
APR	Business Registry Agency
BPM	Business Process Management
CAC	Citizen Assistance Centre
CAPTCHA	Completely Automated Public Turing Test to Tell Computers and Humans Apart
CERT	Computer Emergency Response Team
CEOP	Central Registry of Integrated Building Permit Procedures
CMS	Content Management System
CRS	Customer Relations System
CSM	Government's Central Server (Centralna servisna magistrala)
CSO	Civil society organization
DCG	Development Consulting Group
EGDI	E-Government Development Index 2014
EGDI-Swiss PRO	E-Government Development Index – Swiss PRO (2018)
ERP	Enterprise Resource Planning
ESB	Enterprise Service Bus
EU	European Union
EU PRO	European Union Support to Municipal Development Programme
E-ZUP	Electronic administrative procedures
GDPR	General Data Regulation Protection (EU Directive 206/679)
GG	Good Governance
GGI	Good Government Index
GIZ	German Agency for International Cooperation
GOITEG	Government's Office for Information Technologies and e-Government
G2B	Government to Businesses
G2C	Government to Citizens
G2G	Government to Government
HR	Human resources
GLED	Local economic development
GoS	Government of Serbia
LG	Local government
LSG	Local self-government
MPALSG	Ministry of Public Administration and Local Self-Government
MoI	Ministry of Interior
NALED	National Alliance for Local Economic Development
NAPA	National Academy for Public Administration
NGO	Non-government organization
NSO	National Statistics Office
ODRA	Open Data Readiness Assessment
OGDP	Open Government Data Portal
PAR	Public Administration Reform
POG	Partnership for Open Government

POS	Point-of-Sale
PWD	People with Disabilities
RATEL	(Former) Republic Agency of Telecommunications
RfP	Request for Proposals
SAP	Single Administrative Point
SDC	Swiss Development and Cooperation Agency
SCTM	Standing Conference of Towns and Municipalities
SKIP	Serbian-Korean Information-Access Centre
SSL	Secure Socket Layer
Swiss PRO	Enhancing Good Governance and Social Inclusion at Local Level in Serbia Programme
TTS	Text-to-Speech
UN	United Nations
UNOPS	United Nations Office for Project Services
UPS	Uninterrupted power supply
USAID/GAI	United States International Development Agency/Government Accountability Initiative