PEMPAL Treasury Community of Practice

Use of Information Technologies in Treasury Operations
Thematic Group Meeting

June 4-5, 2019

Budapest, Hungary

On June 4-5, 2019, PEMPAL Treasury Community of Practice (TCOP) Thematic Group on the Use of Information Technologies (IT) in Treasury Operations held a meeting in Budapest, Hungary. The main objective of the meeting was to to learn about the key IT systems used by the State Treasury of Hungary, their plans for introduction of a new integrated financial management information system (IFMIS) and discuss selected issues of priority interest for the group. The event included joint sessions with the TCOP plenary meeting held on June 5, 2019 where the group contributed its IT expertise to the discussions. The meeting was attended by 26 specialists representing 11 PEMPAL countries (Albania, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russian Federation, Tajikistan, Turkey and Ukraine). Representatives of the Hungarian State Treasury hosted the event and provided a significant contribution to the event agenda. The event was facilitated by the World Bank team, including Ms. Elena Nikulina, Team Leader for PEMPAL, Mr. Cem Dener, Lead Governance Specialist and the Chair of the World Bank Digital Governance Community of Practice, Ms. Yelena Slizhevskaya, TCOP Advisor, as well as Mr. Mark Silins, TCOP Thematic Advisor. Logistical support was provided by the PEMPAL Secretariat based at the World Bank Country Office in Moscow.

Mr. József Mészáros, President of the Hungarian State Treasury, opened the meeting and welcomed the participants on behalf of the hosts. In his welcoming address he noted that treasury functions and practices vary from country to country, and this opens many opportunities to learn from each other. **Ms. Elena Nikulina**, PEMPAL Team Leader, continued by thanking the Hungarian State Treasury for their readiness to host the event. Ms. Nikulina brought participants attention to the fact that this is the first opportunity for the group members to familiarize themselves with the experience of Hungary. Development of modern IT solutions and services is one of the priorities of the Hungarian State Treasury (HST) and she hopes that the meeting will be very useful for the event participants. Ms. Nikulina thanked Mr. Török Tamás Pál and his colleagues from the HST who contributed in preparing the event, as well as the members of the TCOP Executive

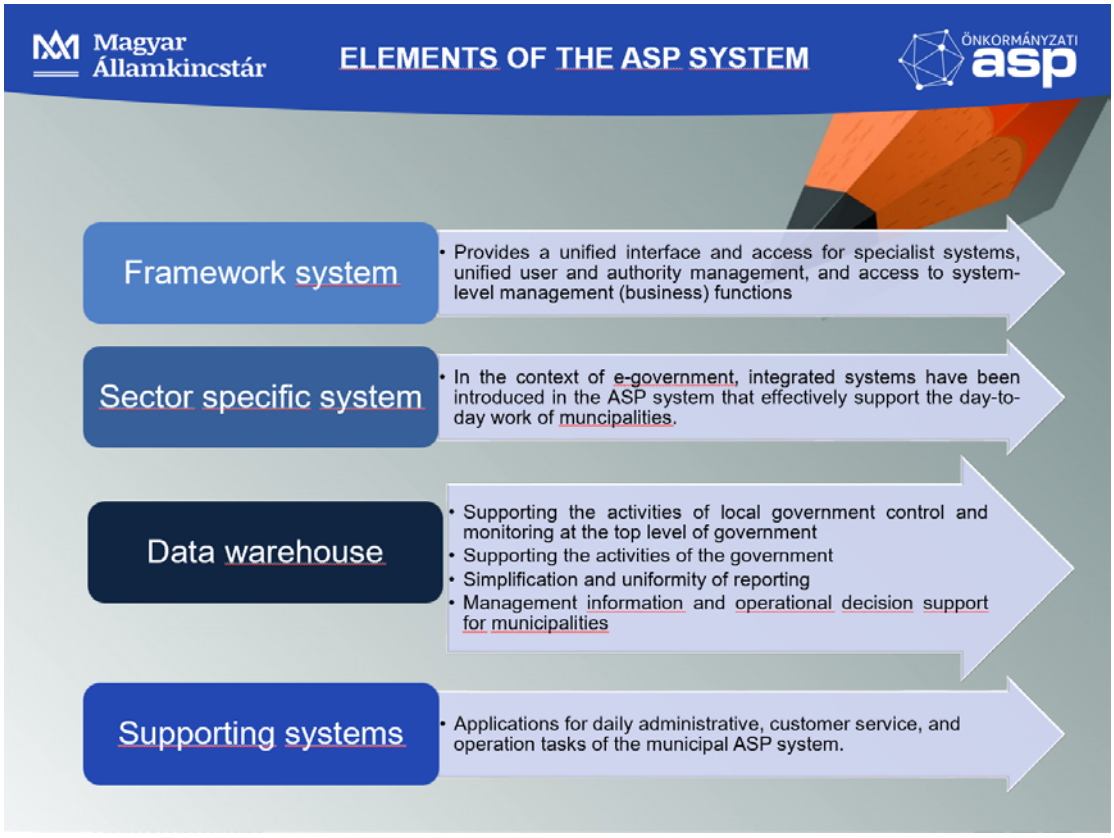
Committee and the members of the thematic group who provided their valuable inputs in developing the concept for the meeting.

Mr. Nazim Gasimzade, Chief of Information Technologies Department of the State Treasury of Azerbaijan and the co-leader of the thematic group welcomed the participants and noted that in 2018 the State Treasury of Azerbaijan hosted a similar event in Baku, and they know first-hand the effort it takes to put together such events. Mr. Gasimzade expressed his appreciation for the hosts on behalf of the thematic group. **Mr. Andrei Narchuk**, Director of the Data-Processing Center of Belarus Ministry of Finance and the co-leader of the thematic group, continued by saying that today IT is driving reforms in treasury processes and he hopes that learning from the experience of HST will generate many ideas for improving treasury processes in participating countries. He also shared his expectation that the meeting will serve a good opportunity for its members to define the way forward for the group.

Mr. Nazim Gasimzade, moderator of the morning session of the day, invited **Mr. Török Tamás Pál**, Head of Division in the Department for Budgetary Synthesis and Data Service of the HST, to introduce the speakers and the background for HST presentations. Participants were informed that the HST performs a number of functions that go beyond the core treasury tasks as understood internationally, and the scope of the functions continues to expand. The HST presentations for the first session provided insight into the treasury processes at the central and local government level in Hungary.

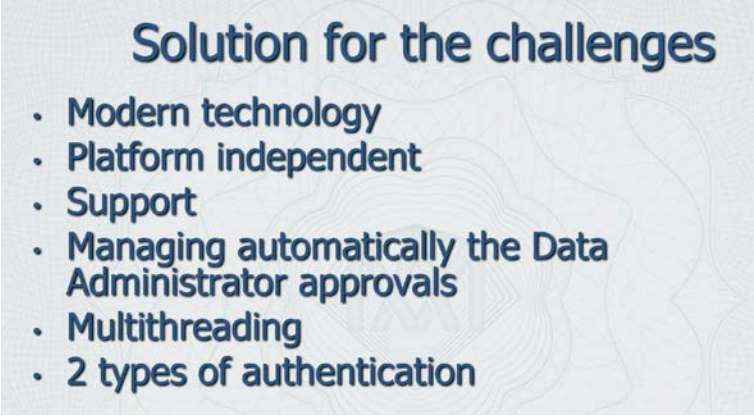
Mr. Kristóf Kállay, HST IT Vice President, started the presentations with a general overview of the main functions and IT support provided to the more than 200 public tasks performed by the treasury. The Treasury was established in 1996. In 2012 it commenced operations through a central office and 19 county directorates. The HST became a highly centralized payment body after recent absorption of the payment functions for several entities including the office of Agriculture and Rural Development and National Pensions - the HST currently manages payments for around 700 central government institutions in the volume of around 60 billion euros annually. HST's IT staff constitutes about 300 of the 6,000 total employees of the HST. Mr. Kállay further briefed the participants on the project to consolidate IT solutions as part of the organizational and operational transformation of the HST, as well as their plans to support expansion of IT services.

The second presentation on the Central Application Service Provider (ASP) service for municipalities was delivered by **Mr. Balazs Krucso**, HST Project Leader. ASP is a project to provide broad uniform IT services to more than 3,000 municipalities (30,000 users) in Hungary. Its goal is to reduce the costs associated with each municipality seeking IT services in the market through economies of scale. The ASP started with a pilot in 2014 and it is now mandatory for municipalities to use it. IT services provided by the HST to municipalities are very broad and cover financial management information systems, local tax management system, document management, property cadastre, and various sector-specific solutions where the municipalities interact with clients. While the HST leads the process, the execution of the project is made through a consortium of seven separate entities. The project has several project streams with the goal of building a national cloud-based infrastructure. A key development objective behind the ASP is to enter data only once in any subsystem with a shared master data file used to then access the data required for other subsystems or requirements. A further incentive regarding the evolution of ASP is a new legislative requirement for all municipalities to provide e-services to citizens.

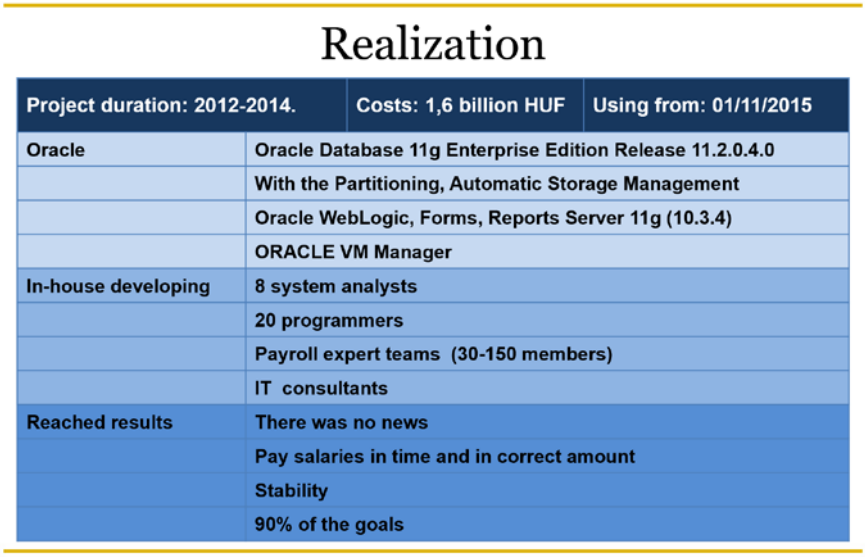


During the question and answer session that followed, the participants clarified the background for the ASP project - the original decision was made through an act of the parliament that assigned mandatory duties for all subnational governments (SNG). It was also established that all SNGs must operate under uniform requirements. After SNGs realized that the ASP is just a service and does not represent any control over their autonomy acceptance grew amongst recipients. Some larger municipalities already had significant investments in IT solutions and were free to continue using these systems, while smaller governments had to use ASP services as they had no proper systems in place. 600 staff (including IT and trainers) are employed in the project across the country with a total EU financed budget of 55 million euros.

After the morning break **Ms. Krisztina Pataki**, Head of Division in IT Department of the HST, presented the HST experience of the identity management. It was noted that this system started with the Agricultural and Rural Development Agency and after its merger with the HST in 2017 the number of users continues to grow rapidly – from 2,000 to 6,500 internal users and from 500 to 2,500+ external users. Ms Pataki shared the challenges in managing users in dynamic organizations including personal turnover, organizational changes and limitations with technological across different systems particularly with aging systems and explained the HST's approach to addressing the challenges.

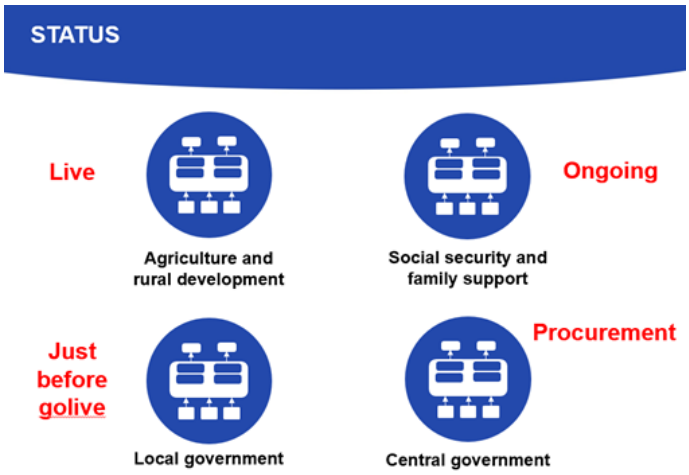


Digitalization in the centralized payroll system processes was the fourth presentation from the hosts delivered by **Ms. Ilona Kálmánné Schlichter**, Project Office Leader, Kincsinfo Ltd. The HST has been providing centralized payroll services for many years. In 2015 public sector payroll commenced using the KIRA[1] solution. When developing the system, the main goals were to transition to electronic documents, to use parametrization to flexibly follow changes in legislation, to centralize the database and to ensure interfaces with HR and accounting systems. There are over 1,000,000 employees and 13,000 institutions serviced by KIRA, 4,000 users in the HST and a further 17,000 external users. The system provides more than 300 forms, 500 reports and 670 procedures. Hungary is currently completing further modernization of the system aimed at its full digitalization and elimination of paper-based archives, implementation of the requirements of the Digital Administration Law, and automation of data transfers.



[1] The acronym for the Hungarian centralized payroll solution

The last presentation by the HST was delivered by **Ms. Krisztina Móra**, HST, and included an **overview of the data warehouses of the HST**. The Treasury has four data warehouses which are currently at different stages of operation/development (see the adjacent diagram). Capabilities offered by the data warehouses are highly demanded by users but operating them effectively and cleaning the errors when they arise present a big challenge. The ongoing plan is to merge the data warehouses into a Treasury Data Warehouse. This is part of a large strategic-level program plan other elements of which include creation of a central master data management system and development of a new account management system. This will also contribute to the IFMIS project aimed at improving public finance information processes, rationalization of public data and information flow, and development of decision support functions along with an increase of transparency.



During the question and answer session that followed presenters shared the lessons learned and provided additional information and clarifications on the treasury processes and supporting technologies used by the HST:

- *Identity management*. It is HST that controls access and privileges and deactivates a user if it is compromised; the analysis is based on weekly reports that allow to see who uses the system and how. E-signature and proper functional profile are required to create new user. The HST seeks to exclude sensitive information when creating new users. Responding to the question whether communication channels are sufficient to handle the data verification the hosts explained that currently, the system copes with 4,000 users, adding an additional 13,000 users is challenging but there is scalable infrastructure to support it;
- *Dynamic query options*. It was clarified that most user needs are met by predefined reports. About 10-20 % of users are skilled analysts who are granted access to create their own queries. There is also differentiation between the types of users – HST staff can access BI portal with their queries, while the general public can refer to the public finance management portal;
- *Payroll system*. All variations to the payroll are entered through an interface by spending units. Accounting for salaries is done by spending units themselves, but the HST provides them with all the needed information according to the predefined structure. Responding to the question about lessons learned and typical errors that should be avoided when centralizing the payroll HST representatives mentioned the need to simplify payroll legislation and minimize exemptions used for different professions. It was also mentioned that parametrization is one of the keys for success. Another important factor is for paperless document management to be integrated at inception – it should not be implemented retroactively;
- *Public accounting*. The meeting participants learned that a mandatory chart of accounts was introduced in Hungary four years ago as part of the reformed accounting rules. Spending units do not own property but have the right to use it and such assets are recorded in their books.

News from the Meeting Participants

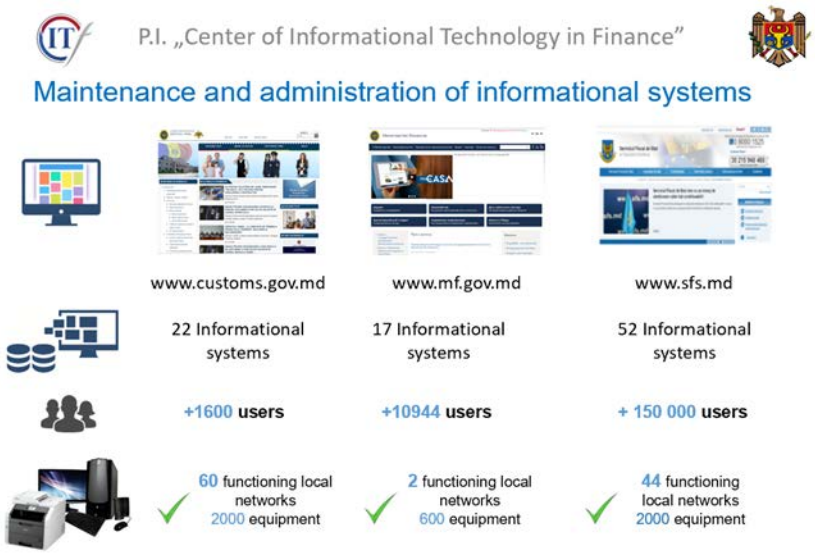
The afternoon of the first day provided an opportunity for the members of the thematic group and invited speakers to share news on recent developments. The session was moderated by Mr. Mr. Andrei Narchuk, the co-leader of the thematic group. The reports from participants of the session are summarized below.

Russia

Ms. Natalia Gvozdeva, Information Systems Development Division Head, Federal Treasury, **shared an update on integration of information systems in the Federal Treasury of Russia.** Ms. Gvozdeva started with saying that centralization of public accounting for 400+ spending units turned out to be an easier task than integration of this system with other solutions and functions. One of the challenges that arose and that was initially underestimated, was the need to manage and digitize huge volumes of paper-based documents and processes. Federal Treasury is taking an active part in entering the primary data into new system. Travel expenses are an example of a process that has many manual steps and the Federal Treasury is building a portal to allow users to fill out simple travel requests and generate reports. During the question and answer session that followed Ms. Gvozdeva explained that migration of the data into the new centralized accounting system was organized using inventory cards with special pre-defined requirements and each spending unit had to reconcile the data with the Federal Treasury, the task took around 3 months. It was noted that the first phase of centralization of public accounting affected 400+ units, another 1,000 units are expected to be added to the centralized system in 2020, while the tax and custom bodies are to join in 2021. Summarizing the discussion, Ms. Gvozdeva clarified that the reform led to reduction in the number of spending units' accountants with many of them becoming internal auditors or analysts.

Moldova

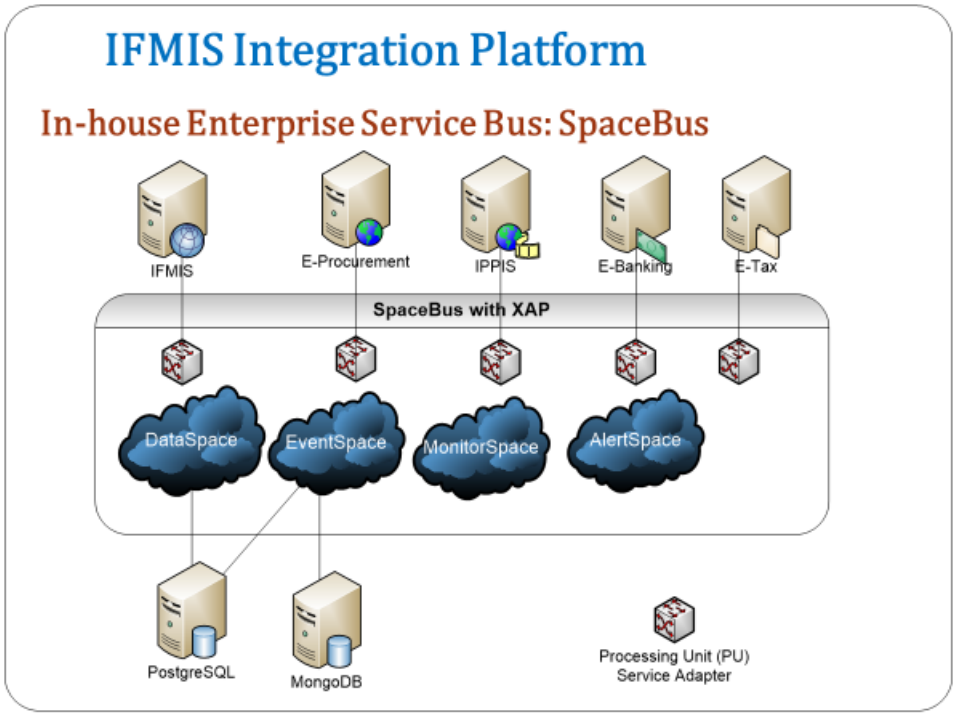
Ms. Elena Saharnean, Deputy Director of the Center of Information Technology in Finance, Moldova, **presented the recent experience of consolidating IT support for public finance management functions in Moldova**. The "Center of Information Technology in Finance" (public institution) was established in 2018 through the merger of the three enterprises that used to support Ministry of Finance, tax and customs administrations. Services provided by the Center include: administration and maintenance of the ICT infrastructure of the Ministry of Finance, Tax and Customs Services; development, maintenance and provision of functionality of IT systems supporting public finance, state procurement, tax and customs; and providing ICT and public



finance training. The centre has over 150,000 users across all platforms. The Center also serves as an operator for the pilot state procurement platform and is involved in the IFMIS and public accounting centralization projects.

Rwanda

Mr. Mukwende Placide, IFMIS Coordinator, Ministry of Finance and Economic Planning of Rwanda, **presented an overview of the IFMIS technologies and their integration with other systems in Rwanda**. Rwanda has an integrated and comprehensive IFMIS developed in-house based on open source software that currently covers 1,239 budget entities with 3,133 users across the central and local governments. These numbers are expected to reach respectively 4,085 and 10,000+ in the near future. E-signature capabilities have already been implemented and there is also a plan to move to paperless operation. The IFMIS unit has 30 IT staff (including 10 developers, 10 desk support staff, 5 system administrators, and 5 business analysts) which is not a large team by international standards.



During the question and answer session it was also noted that while there were some risks with open source solutions, and these options are relatively new, but growing, there are the benefits of reduced outlays for licenses and on-going maintenance costs which reduce dependency on customized off-the-shelf solutions.

The final presentation of the news session was delivered by **Mr. Cem Dener**, about the new **Client Connection (CC) Application Program Interface (API)** that was launched through the production environment in April 2019, and accessible externally. The objective of this initiative is to automate the existing manual process of data exchange for World Bank (WB) funded projects to improve client service delivery and reduce the cost/duration of regular (monthly) updates. The CC API was implemented in 2018, and the Albanian External Assistance Management Information System (EAMIS) and the World Bank CC teams completed the pilot testing in Q1 2019. Authorized CC users from WB client countries can now request access to use CC API for operational use to automate the data transfer on all

activities (project details, commitments, disbursements, procurement activities, contract awards, etc.) between the WB and country systems (e.g. Aid Management Systems, FMIS, e-Procurement platforms, Project Implementation Unit systems and more). Mr. Dener mentioned that the web APIs contribute significantly to the improvement of public services and seamless end-to-end interactions among government, citizens and businesses, by eliminating manual interactions on data exchanges. Web APIs can be developed in a relatively short time (in several months) with a modest budget ($20,000) and result in substantial cost savings due to automated data transfer and updates. The World Bank is the first development partner pioneering the use of APIs to connect operational databases with client country systems. New CC API is expected to be used/tested in several countries starting from July 2019 (e.g., Albania, Bhutan, Brazil, Rwanda, Kenya, Lesotho, Jamaica, Mexico, India).

The day concluded with the small group discussion session during which the participants shared their ideas for future events of the thematic group[2].

Box 1: Summary of topics proposed for the future events of the group

- Online capabilities of treasuries and learning from countries that are working in a remote manner – digital identification management, e-documents.
- GovTech
- Blockchain and distributed ledger technologies
- How to use analytical information – intelligence management rather than data management
- Use of APIs and other tools for interoperability
- Transformation of the reporting function
- Business Intelligence for revenue analysis
- Data-mining
- Open source software – examples of migration from COTS to open source
- Centralization of public accounting
- User support
- Ability to analysis data from central systems and data warehouses – how decision makers can benefit from this information

On the second day the group joined the participants of the TCOP annual plenary meeting for the discussion on the links between public procurement and public financial management processes and systems.

Mr. Mark Silins, TCOP Thematic Advisor, had set the stage for the day's discussions by providing an overview of what public procurement is and how it interacts with public financial management. He reminded participants that public procurement is not something outside public financial management – procurement takes place at the beginning of the expenditure process. The design of public procurement processes and the controls embedded should therefore be integrated with broader PFM processes and systems.

[2] These topics might be addressed using different PEMPAL formats, including thematic videoconferences, workshops, or study visits.

Ms. Elena Nikulina continued by presenting on overview of the results of the 2019 TCOP survey on the links between public procurement and public financial management information systems (FMIS) in PEMPAL countries. The survey illustrated that e-procurement systems are operational in 14 out of 16 surveyed countries, and two remaining countries also have plans to develop such systems. Eight out of these fourteen countries already ensured the data exchange between the systems through web services or APIs and there are some strong champions among TCOP countries in this area, but in most cases the scope of data exchange remains limited. The theme for the day's discussion was therefore very relevant and well chosen.

The session followed with a presentation by **Mr. Cem Dener**, who **presented the main components of FMIS and e-procurement platforms, and possible options to connect these systems** to improve budget/financial controls and monitoring of contract execution performance. He mentioned that e-procurement usually covers both "Tendering" (low volume, high value purchases for investments/capital spending) and "Purchasing" (high volume, low value recurrent budget expenditures). Core FMIS solutions sometimes include a purchasing module. However, FMIS and e-procurement systems are usually separate and not properly linked to exchange data. Therefore, it is important to clarify possible options to connect FMIS and e-procurement systems during system modernization and integration projects to improve controls and service delivery performance. Mr. Dener presented a template for linking specific functional modules of FMIS and e-procurement systems to guide decisions on interface development for automated exchange of data on procurement activities (ideally using web services or APIs). He suggested several data exchange options that could be considered during the development of interfaces (APIs), as presented in the box below. Mr. Dener completed his presentation by sharing several good practice examples from the Republic of Korea, Brazil and North Macedonia.

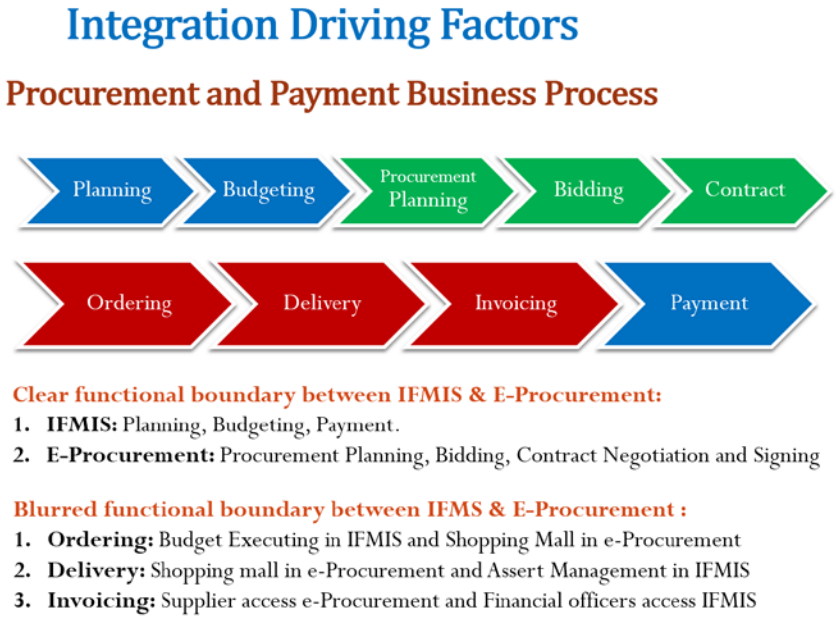
Box 2: Selected FMIS and e-GP data exchange options

- **Announcement of tenders/purchases:** Data exchange before the publication of each procurement notice to check the consistency of unique "activity code" (as a part of budget classification), unique "procurement package ID", "allocated budget", and more.
- **During procurement process:** Data exchange during procurement activities if there are securities/guarantees to be registered under treasury single account (linked to FMIS) and checked during the procurement process.
- **Before contract signature:** Data exchange before contract signature to ensure that the contract amount is within allocated budget (and if it is above the budget this is justified and accepted). Also, financial obligations of the selected supplier (pending tax payments and other obligations) can be checked through FMIS interface to minimize the risks.
- **After contract signature:** e-GP is expected to generate a unique "contract ID" linked to each procurement package and activity code, and share contract details with FMIS for each recurrent / capital budget contract. Ideally, contract details should also include the payment schedule and other details to ensure that FMIS can capture all relevant fields for commitment / cash management.
- **During contract execution:** FMIS is expected to capture all payments related to each contract, as well as other data fields (financial and non-financial indicators/outputs) and contract amendments (extension of closing dates, contract value and other changes). FMIS can send regular updates to the e-GP on payments and other indicators for monitoring and data analytics.

- **Monitoring and reporting:** Both FMIS and e-GP systems can include data analytics tools to monitor and report the progress in contract execution and project results. There should be data fields that will allow for monitoring the duration and actual costs of contracts.
- **Standards:** While recording and reporting procurement activities and contracts, e-GP and FMIS data structures can be aligned with national and international standards (e.g. CPV (EU), UNSPSC, GFSM, COFOG).

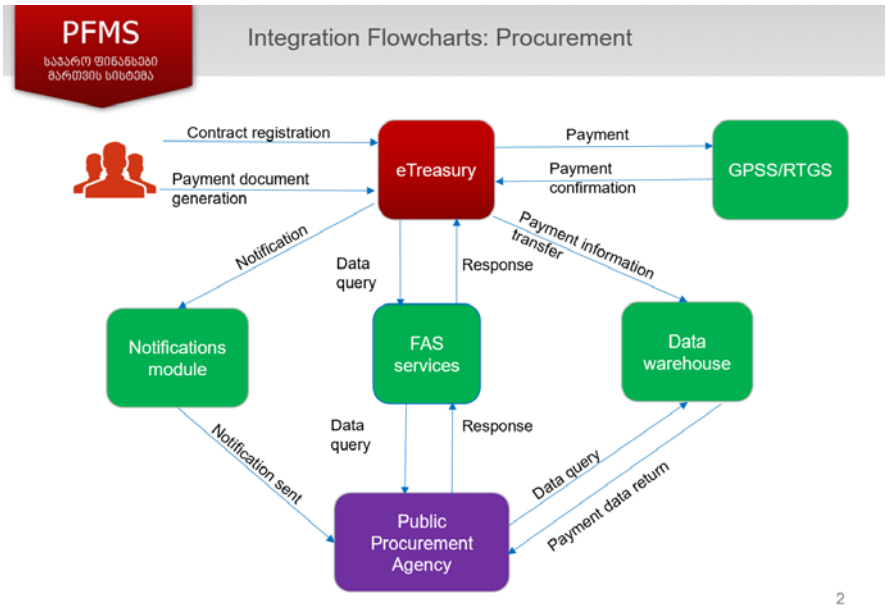
During the question and answer session Mr. Tufan commented on the case of Turkey, where about two years ago the government had decided that all its core PFM and procurement functions were to be performed under a single system, but this proved to be challenging and now the decision is to keep legacy systems, but to ensure their interoperability. Responding to Mr. Tufan's question, Mr. Dener clarified that the trend is to link existing PFM and procurement systems through web services and improve the quality and content of FMIS and contract execution data. Also, most of the countries are not prepared to spend at least 3-5 years to build a totally new integrated system, and the trend is to connect existing platforms cost effectively within a year or two. This is a fundamental challenge many countries are experiencing nowadays, and the key decision point here should be the cost-benefit analysis of running existing systems after rapid improvements vs establishing new systems. In the meantime, some of the countries are migrating to shared cloud-based (hybrid) platforms which can reduce the operational costs substantially.

The event followed with a session on country cases illustrating approaches for integration of FMIS and e-procurement platforms. **Mr. Mukwende Placide presented the case of Rwanda**. The IFMIS in Rwanda was rolled out in 2010 and covered 173 budget agencies. During the second phase of the project the IFMIS expanded to cover 364 budget agencies operating at 1,239 sites. The e-procurement system was developed in 2015 by a company from the Republic of Korea and is currently rolled out to 150 budget agencies. Mr. Placide explained the integration approach and paid attention to the practical challenges that the country experienced when integrating the systems. For some areas it was easy to define clear functional boundaries between the IFMIS and e-procurement, while for others (such as ordering, delivery and invoicing) the functional boundaries were blurred which led to conflicts between different offices (ordering officer, procurement officer, budget officer, logistics officer).

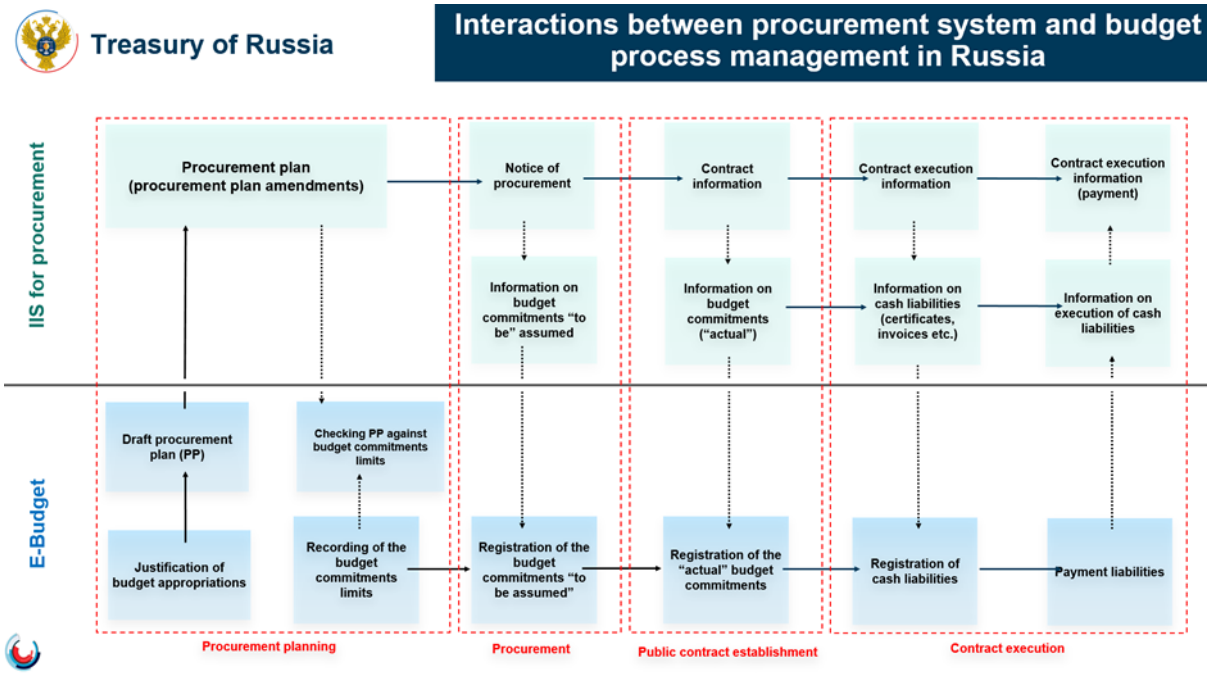


The **country case from Georgia was presented by Ms. Sophio Nemsadze**, Head of Service Department of the State Treasury, **Mr. Alexandre Khuskivadze**, the Head of Research and

Systems Analysis of Financial-Analytical Service of the Ministry of Finance, and **Mr. Giga Mikautadze**, the Leading Analyst of Financial-Analytical Service of the Ministry of Finance. The e-procurement system in Georgia is operated by Public Procurement Agency and was integrated with the e-treasury system in 2012, after the latter transitioned from Access to a Web-based platform. According to legislation, spending units are required to upload the signed contracts to the e-procurement system no later than 10 days after the contract signing, after that the contract passes to e-treasury. Controls ensuring contract amounts remain within approved annual appropriations were implemented in 2019. Mr. Giga Mikautadze provided an online demonstration of the system which was positively received by participants. During the question and answer session it was clarified that the Treasury is not allowed to refuse registration of already signed contracts. Information from the signed contract is not yet utilized by the cash forecasting function.



The **case of the Russian Federation was presented by Mr. Alexander Albychev**, the Deputy Head of the Federal Treasury. Mr. Albychev explained the links between public procurement and budget planning and executions systems which are illustrated on the slide below.



Mr. Albychev clarified that the Federal Treasury is an operator of the Integrated Information System for Procurement (IISP), the Ministry of Finance performs regulatory functions, while all the interactions with suppliers is done by the operators of the e-trading platforms[3]. From July 1, 2019 the Federal Treasury is also introducing digital contracts for certain types of suppliers, subsequently e-certificates of acceptance will also be introduced as part of the public procurement practice. Mr. Albychev noted that the ongoing reform of centralizing the public accounting function in certain sectors also identified the need to link the procurement system with accounting and work is ongoing to record information on new assets at the moment the contract is signed. During the question and answer session participants congratulated the Federal Treasury on the impressive progress made and expressed their interest to continue learning from this experience.

Discussions in small groups followed during which the participants of the meeting reflected on how the linkages between the e-procurement system and FMIS facilitate improvements in public financial management. Two common issues raised by participants was a lack of automated link between the e-procurement and e-treasury systems and/or no link between the procurement planning and budget allocations in their respective countries. The existence of such links would eliminate double-entry of documents by different staff, thus decreasing errors as well as processing time. The link between the procurement system and the budget/treasury system would also help to prevent procurement processes starting without budget allocations, which leads to procurement cancellation at the contract registration stage.

The second part of the group discussion focused on country experience that was found relevant and useful for participants. Many participants expressed strong interest in preferred suppliers arrangements, the Rwanda experience on the procured assets being registered immediately, as well as Georgian and Russian experience presented earlier in the day. Representatives from Azerbaijan confirmed the relevance of the day's discussions for their country which is launching its e-procurement system staring July 1 this year; Belarus noted that amendments to the legislation on public procurement are taking force on July 1 and some of the links between the systems will be implemented; and participants from North Macedonia noted great benefit from the presentations as management has requested linking of these systems.

[3] These are private operators authorized by the Federal Treasury subject to satisfying a list of the predefined criteria.

Mr. Dener wrapped up the day's discussions by sharing his impressions and key messages. He noted that e-procurement systems are operational in most of the participating countries, their coverage and use is expanding, and there is a strong rationale to develop information linkages with the FMIS. There are countries in the TCOP (and the region) that are very advanced in this area, however in general FMIS and e-procurement systems are not properly linked to exchange data. Therefore, it is important to clarify possible options to connect FMIS and e-procurement systems during system modernization and integration projects to improve controls and service delivery. Mr. Dener confirmed that the topic is well chosen and has a potential to be explored further at the future meetings.

All meeting materials are available at the PEMPAL website:
https://www.pempal.org/events/2019-tcop-thematic-group-meeting-use-information-technologies-treasury-operations