



MINUTES
Treasury Community of Practice Workshop
Astana, Kazakhstan; September 27 - 29, 2011

The PEM-PAL (Public Expenditure Management-Peer Assisted Learning) consists of three networks of practitioners, also called Communities of Practice (COP): for budget, internal audit and treasury. These networks support experience and information exchange among the practitioners in the World Bank's Europe and Central Asia (ECA) region.

The Treasury Community of Practice (TCOP) workshop in Astana, Kazakhstan, held on September 27 - 29, 2011, brought together around 90 participants from 16 countries¹ to talk about the use of information technology (IT) in treasury operations. Experiences of Kazakhstan, South Korea, Denmark, France, Russian Federation and the World Bank were presented and shared.

These minutes summarize the messages from the Astana presentations and discussions².

1. Financial management information systems (FMIS) are essential tools for controlling spending and deficits, and achieving greater efficiencies in the budgeting process.

According to the World Bank (WB)³, an FMIS can be defined as “*a set of automation solutions that enable governments to plan, execute and monitor the budget, by assisting in the prioritization, execution, and reporting of expenditures, as well as the custodianship and reporting of revenues*”. This leads to improved allocation of public resources, predictability, transparency and accountability, and both policy makers and general public benefit enormously from improved access to information. Nevertheless, a move to an integrated FMIS solution can rather be costly, require substantial capacity building efforts, legislative changes and a strong political support, and involve technical and operational challenges.

A core FMIS solution usually unites the budget planning (budget preparation, multi-year frameworks, public investments, etc.) and execution (treasury system) modules (payment/receipt management, cash and debt management, accounting, financial reporting, etc.). The non-core systems (personnel management, payroll, public procurement, property management, etc.) can also

¹ Albania, Armenia, Azerbaijan, Belarus, Bosnia, Croatia, Georgia, Kazakhstan, Kyrgyz Republic, Macedonia, Moldova, Russia, Serbia, Tajikistan, Turkey and Ukraine.

² Presentations from the Astana discussions are available at:
www.pempal.org/event/eventitem/read/46/109

³ “Financial Management Information Systems: 25 years of World Bank experience on what works and what doesn't”, Cem Dener, Joanna Alexandra Watkins, William Leslie Dorotinsky. World Bank Study. April 2011.

From 1984 to 2010, the World Bank provided financing for 87 projects in 51 countries totaling USD 2.2 billion (USD 3.5 billion together with the borrower co-financing and other donor funds). Of 87 projects, 29 were in Latin America, 26 in Africa and 14 in ECA region.

be linked with the FMIS. When the FMIS and other non-core systems share the same central database, offering reliable consolidated results for decision support, performance monitoring and web publishing, this is then referred to as an “integrated” FMIS. Fully integrated FMIS solutions are rare in practice.

Recent WB survey⁴ shows that the **PEM-PAL countries** tend to develop a core Treasury (budget execution) systems first, and build/integrate other FMIS components around it. Core Treasury system modules⁵ are usually implemented by customizing a commercial off the shelf software package, and separate locally developed software modules are developed for other components⁶. It also shows that core budget/treasury functions are supported through centralized systems hosted by the ministries of finance, and that others FMIS components are implemented by line ministries in parallel, resulting in fragmented solutions. This implies that communication between the ministries of finance and line ministries could be improved to ensure timely information exchange and avoid duplicate information system development efforts.

2. Experience suggests that it takes time and significant resources to design, procure and implement an FMIS.

The above mentioned WB study-- which shows the WB’s experience with 55 completed and 32 active treasury/FMIS projects in 51 countries -- suggests that it takes on average almost eight years, or more, to complete a comprehensive FMIS project, with an average preparation time of 16 months, and implementation time of six to seven years. Extensions are also common, mostly due to restructuring and delays in procurement of information and communication technology (ICT) solutions.

FMIS projects also involve significant costs, which depend on the size of a country, the number and scope of components, and the complexity of the project design. **South Korea** invested USD 55 million over three years in its FMIS solution (DBAS) developed in-house (including all application software development work, as well as the installation of central servers/data storage units); the annual maintenance cost of this FMIS amounts to USD 11 million. It provides access to 40.000 users to perform 300.000 transactions daily. **Russia** spent around USD 1 billion for its recently completed Treasury (FTAS) system (co-financed by the World Bank), using highly customized commercial off-the-shelf software (Oracle), combined with specific locally developed modules. It operates across 83 oblasts and 9 time zones (3 satellite zones), and is administered centrally from Moscow. **France** paid EUR 1 billion for the FMIS solution (Chorus), which is the standard version of a commercial off-the-shelf software package (SAP), over ten years. A large part of the FMIS related costs however are balanced by savings from staff reductions and other efficiencies.

3. Some important questions need to be answered before starting with implementation.

Introduction of an FMIS requires the development of a comprehensive implementation plan, looking at every detail, and with realistic deadlines and implementation milestones (including

⁴ September 2011, pre-event survey undertaken by the World Bank resource team for the TCOP event in Astana, Kazakhstan, September 27 – 29, 2011.

⁵ Management of expenditures/revenues, commitments/purchasing, cash/fund management, general ledger, data warehouse, accounting, and reporting.

⁶ Support for spending units, internal and external debt management, personnel database, payroll calculations, macro-economic forecasting, and interfaces with other systems.

detailed cost estimates for major ICT components). This plan needs to take into account the legal framework, existing institutional set up, business processes and other PFM reforms. It should tell exactly what is needed and why for the FMIS to operate efficiently and effectively, offer ICT solutions (how, where, when), and devise capacity development and implementation steps. Unless all the details are clear from the start, problems tend to emerge in implementation (e.g., often in procurement). It is also important that the users understand the benefits of the new system, and constantly provide their feedback.

3.1. Setting the stage for the transition to FMIS.

Russia's experience is very valuable. The transition to the new Federal Treasury Automation System (FTAS) was completed in September 2011. The FTAS now services 23,895 budgets, through 62,000 spending units accounts held with the Central Bank, for 201,000+ clients, processing, in real time, on average 40,000,000+ transactions every month. These results required many years of careful design and implementation, and a dedicated team paying attention to every detail.

The concept of the FTAS was designed in 2003 and developed further by 2005. Several lessons learned in this period stand out. One is that the approach to the system design needs to be comprehensive (the World Bank played a very important role here) and realistic (including expectations control at the top level, deadlines control for all interrelated tasks, and realistic cost estimates). It was also important, already at this stage, to decide whether to adjust the IT system to the existing legal base, or to adjust the legal base to the available (or to be developed) IT system. Documenting all business processes also proved important in order to have common understanding among all parties involved (e.g. clear bidding requirements to avoid any misunderstandings with the suppliers). And a conflict resolution mechanism was also put in place to provide for quick settlement of conflicting issues (e.g. with the suppliers) at an early stage.

Implementation phase involved preparation of infrastructure (from 2006 to 2008, involving communication, engineering support system, server equipment), comprehensive software testing and system modification (2008), pilot implementation in three regions (2009; operated two systems - existing and new - at the same time) and purchase of hardware in 5 waves (from 2010 to 2011) to avoid that the hardware gets obsolete. Engineering support systems (securing power supply through diesel generators, rehabilitation of treasury offices, and using satellite connections in remote locations) was one of the most challenging components. It had to secure that the system runs without interruptions even in most remote areas of the country. The other challenge was adjusting the design of the evolving system to the constantly changing legislation, as well as the introduction of digital signature at all levels for all critical operations. At some point it was simply necessary to freeze the system, and this created some difficulties. Also the shift from a decentralized (with more than 2,500 databases) to a centralized system (83 regional databases of the same structure) was quite a challenge. Russia obliged the suppliers to arrange the transition, and the FTAS users to prepare the data.

3.2. Centralized (web-based) vs decentralized (client server) systems and information security.

Advances in ICT have led to a gradual shift (after 2000) from decentralized client server platforms to centralized database applications using web-based solutions, where application software, database and servers are located centrally, and online access is provided to all users through a countrywide network, with a backup center replicating all operations. Closely related with the centralized database applications is the issue of information security.

In **Denmark**, an automated IT system, called Navison Stat, has been in place since 1998, and operated by the Ministry of Finance's Agency for Governmental Management. Today it is used by almost all governmental agencies, it supports digital exchange of all business critical documents and is based on a detailed and refined user administration concept. Until 2010, although the development of the Navison Stat was centralized, the local agencies had their version of Navison Stat, using their own solutions for handling invoices and travel reimbursement; this absorbed a lot of their resources in IT management. This changed in 2010. Now all government organizations, including local agencies, are using the same version of Navison Stat customized in-house by the Agency, which means that the same IT platform is also used for processing the travel expenses and public procurement.

The key lessons learned in **Denmark** are similar to those of other countries introducing an FMIS. Adequate preparations were essential for a success of a project, so was a focus on every single element of the Navison State, which turned out to be more an organizational rather than an IT project. Commitment of local agencies and their readiness to change processes were also important. Just imposing on them solutions would not lead to constructive project implementation.

The September 2011 WB survey shows that in **PEM-PAL countries** there is a trend towards centralized web-based solutions⁷, and that there is a big interest to provide a more secure access (through security key/tokens rather than only password⁸). For the time being, one half of the countries responding to the survey have set up units responsible for information security, and almost all use "audit trail" during daily operations or have set up a unit for managing system user registration. The information security challenges, which some of these countries are facing include: integration of fragmented information systems; hardware installation, upgrade and maintenance; capacity development (IT skills, funding); user access, role and password management; digital signature; implementation of a separate auditing system; using public infrastructure; etc. Most of the countries have already implemented or are interesting in implementing IT assessment/audit.

Building an overall internal control environment within each institution to address information technology risks is important. At the **World Bank**, this environment involves people, processes and technology. As such, it has become part of the overall culture of the organization to the effect that all employees are aware of and adhere to specific operational and information security controls. In all processes, controls with respect to application development & maintenance and access to programs/data/information are in place to prevent unauthorized access, fraud, etc.. Also, duties (e.g., between the development and production environments) are segregated, and the roles and responsibilities are clear with respect to, for example, who can initiate a change, test the change, approve it and move to production. A "Do what you document, and document what you do" principle applies. An IT Disaster Recovery Policy and an IT Contingency Plan have been developed to minimize the system failure, data loss and ineffective controls risks.

The **World Bank** operates various applications (SAP, PeopleSoft, Treasury applications, remote access), including an in-house developed secure "Client Connection" website that offers government officials and project implementation agencies quicker access to information about their portfolio and the Bank's analytical work. Through Client Connection, the Bank clients submit an online disbursement request and sign it electronically, whereby all authorized signatories and

⁷ Of 14 countries responding to the survey, 10 use or will use shortly web-based solutions in budget execution operations and 7 in budget preparation.

⁸ Of 14 countries responding to the survey, 7 use security key and 2 use password for authentication, and 5 use no authentication at all.

beneficiaries must be approved and pre-registered. Also, separate profiles, such as a form creator and a form signatory, must be in place. Different profiles have different levels of access or different types of transactions they can perform. Access is granted with a valid user ID and password, which includes a pin and a dynamic token.

3.3. *Type of application software: developed locally vs commercial packages*

Until 2000, FMIS ICT solutions were mostly developed in-house. However, with the introduction of the web based applications, customized commercial packages combined with specific locally developed modules are more and more visible, mainly due to improved usability of commercial software to meet public sector needs.

Kazakhstan launched a comprehensive project to implement a core Treasury system during 2001 – 2004, based on a highly customized commercial package (Oracle), and updated it in 2008 to simplify all budget processes (debt, state assets). Special indicators were introduced to identify strengths and minimize irregularities in the Integrated Information System of the Treasury (IIST). Training of some 10,000 public sector officials, carried out with a help of a training center⁹ established in 2007, was instrumental for a smooth functioning of the system. The Treasury Committee, an authority under the Ministry of finance, includes 18 regional and 188 local treasury departments, and is in charge of both executive and audit functions (e.g., has approved the methodology for rating the performance). Almost 15,000 public offices and 45,000 people are using the services of the treasury and its local departments. Some 8,000 standard reports are produced per day using one database, allowing specific reports to be produced at any time and in any form.

Security of IIST is ensured at the technical, software and organizational level, through a comprehensive package of measures, especially after the 2008 hardware update, to prevent theft, loss and unauthorized copying or blocking of information. The data transferred by IIST channels are cryptographically protected. Local networks of treasury departments are secured from outer networks with the help of firewalls. Regardless of the location and connection method, authorization of any user of the local treasury system is based on the processes of authentication and identification. The back-up of all records is provided on a daily basis.

The Chorus, the central financial information system in **France**, which became operational in 2010 and is expected to be completed in 2012, has been developed based on commercial packages, in cooperation with the Government's Financial Information System Agency (AIFE), which is in charge of the FMIS policy and is reporting to the French Budget Ministry. With Chorus, the central software is used, compared to a number of in-house solutions used earlier. Introduction of Chorus was paralleled with a new budget classification and an accounting reform, with an emphasis on teaching and training (28 percent of the Chorus budget) to improve understanding of all users. It has led to important simplifications of procedures and improvements in transparency and accountability of the financial data relating to France's EUR 380 billion annual budget, and has offered a helpful tool to its 50,000 users in central and local government services.

South Korea, for example, preferred to rely on in-house expertise when in 2006 it developed its FMIS, which took 14 months to complete. The FMIS now processes some 300,000 transactions by

⁹ Center for Training, Retraining and Professional Development of Financial System Specialists Skills of the Ministry of Finance of the Republic of Kazakhstan

14,000 users daily. It deals with all fiscal activities of central government from budget formation, execution, and from treasury management to accounting and settlement. It supports program budgeting and accrual-based accounting, and connects, in real time, fiscal information among central and local governments and related public agencies.

South Korea opted for an in-house developed solution to be able to reflect specific requirements of the Korean fiscal environment, such as finance systems and business processes, and have technical knowledge in place to respond swiftly to frequent changes. This resulted in lower cost for additional development and maintenance. Developing user support in 2010 proved very useful, both for the users and the Agency as the administrator of the system. The former are increasingly satisfied with the FMIS system, while the latter is getting a valuable feedback, leading to the FMIS' further improvements and refinements. The user support center responds to some 100 queries per day. Developing performance management system, improving analysis and forecasting and improving the cost management system are the next steps on the FMIS agenda of the South Korean Ministry of Strategy and Finance.

4. The World Bank support to FMIS practitioners

4.1. FMIS COP.

To support implementation of the FMIS projects, the World Bank in September 2010 established a FMIS Community of Practice (COP) to promote exchange of information and experiences gained in the design and implementation of FMIS solutions. The FMIS COP membership is open to all specialists and officials from interested countries and development partners, who wish to communicate and collaborate for the improvement of PFM practices through FMIS solutions¹⁰.

4.2. FMIS Database.

FMIS Database contains a rich set of operational data and performance ratings for the benefit of task teams, as well as the client countries involved in treasury/FMIS projects (95 projects from 54 countries as of August 2011).

4.3. FMIS Study (1984 – 2010).

The World Bank FMIS Study, "Financial Management Information Systems", 25 years of World Bank experience on what works and what doesn't, provides guidance for improving the performance of future projects (the study is available from the FMIS CoP web site in English, Russian, French, Spanish, Portuguese, Arabic, Chinese and Turkish).

4.4. FMIS Data Mapper.

The FMIS data Mapper is available on Google Maps to present the key FMIS project information through an interactive customized map of the world.

5. Summary

The participants of the Astana workshop agreed that a success of any FMIS project depends on three key pillars. One is a political will and strong leadership, assisted by a dedicated team. The other is a comprehensive and detailed plan and proper risk analysis. And finally, special attention needs to be given to capacity building and training, as well as communication strategy, so that the benefits of the project are well understood.

¹⁰ To be included in the FMIS COP mailing list for updates on events and developments, and to register for access to FMIS CoP web site, please send a request to Mr. Cem Dener (cdener@worldbank.org).

The participants found the topic of the Astana workshop very relevant, and very much appreciated the exchange of information and a good mix of countries represented at the workshop. They believed it helped them deepen their understanding of some very demanding challenges, especially those relating to IT security issues, and identify weaknesses and strengths of various solutions. In particular they valued unique opportunity to discuss problems with their peers, and create networks. All this will assist them in discussing solutions and options in their home institutions.