

Moldova Mobile e-ID Solution

How mobile identification in the virtual world open a gateway to public services in Moldova

CASE STUDY

Introduction

In 2011, the Government of Moldova launched the Governance e-Transformation agenda to improve public service delivery, increase administrative efficiency and transparency, and reduce corruption by harnessing innovation and information and communications technologies (ICTs).

The World Bank approved the \$20 million IDA credit aiming to support the implementation of the *Governance e-Transformation* (GeT Project).

As a result, the government Strategic Program for Technological Modernization (e-Transformation), provides for service redesign and digitization, efficient and open government through data exchange and interoperability of government IT systems, cloud computing and reuse of shared platforms, mobile and open data platforms. The Government set up the e-Government Center/Government Chief Information Office within the State Chancellery, and appointed Governance e-Transformation Coordinators in ministries and agencies to ensure alignment on both cross-sectorial and sectorial levels, and drive digital transformation all across the government.

As part of the GeT project, the government deployed the mobile eID infrastructure (MeID), as a critical enabler of public service delivery. The MeID platform aimed to enable the speed, the privacy, the convenience and transparency of digital access to government services and information for citizens, including online applications and copies of official documents.

The *Mobile Signature* service was launched in September 2012, in partnership with Moldcell/TeliaSonera and Orange mobile operators. The government entered into the public-private partnerships with mobile operators deliberately, relying on their commitment to innovate, quality customer service and capacity to issue Mobile Signatures to citizens all over the country. At Mobile World Congress 2013 in Barcelona, the government of Moldova received the *m-Government Global Mobile Award* from the GSMA for the *Mobile Signature* project.



Design of the MeID Service

The enabling legal and regulatory environment facilitated the design and implementation of the MeID Service.

Moldova law from July 2004 on electronic documents provides for their equivalent to paper-based documents signed by hand. The Strategic Program for Governance e-Transformation, approved in September 2011, provides for the implementation of the Identity Management Framework. In September 2012, the Prime Minister issued a government ordinance that required government agencies and ministries to use the MeID service to improve public service delivery to citizens and business.

Government involved mobile operators in the project design from the beginning.

Prior to developing the solution, the government in close collaboration with mobile operators undertook an extensive analysis of the options available. The World Bank has facilitated access to cutting-edge expertise through consultations with the IDM Experts group.



The Government considered the following key criteria and critical questions when designing the MeID solution:

Table 1: Elements of analysis in the design phase of the MeID solution

#	Key criteria considered	Key questions asked
1.	Cost of implementation	How much it will cost the state to implement the system?
2.	Cost of maintenance	How much the state will have to pay yearly to keep the system operating?
3.	Implementation timeframe	How long it will take to implement the system? When it could be potentially launched?
4.	End user uptake: -> usability	How comfortable will the end users be with the new system? - How easy it will be to issue a DS kit? - How easy it will be to extend/replace the certificate after expiration of its validity period? - How easy it will be to use the DS with the model?
5.	End user uptake: -> costs	How much it will cost users using this model: - How much will they have to pay for registration/activation? - How much will they have to pay for regular service provision? - What are indirect costs they would have to support (i.e. buying a new cellphone because the old one is not suitable for the DS model)?
6.	Administrative usability	How easy it will be to administer the process of: - Issuing a DS; - Mapping to the natural person; - Revoking a certificate; - Extending/replacing a certificate
7.	Technical support	How the users will be supported in using DS? Who will offer that support?

The government had to chose from two alternatives - Client-Side or Server Side models of implementation, each with its specificities:

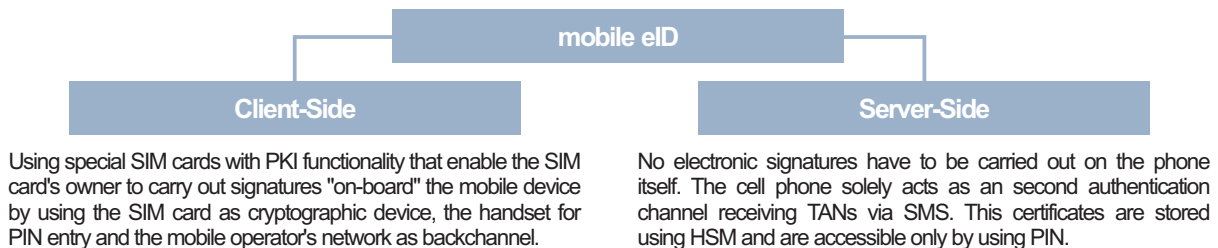


Figure 2: the MeID alternatives considered

Source: e-Government Center, Government of Moldova

In the client-side MeID option, the cryptographic material is stored on the client (i.e. on user's mobile phone) and the mobile subscriber is provided with a special SIM card, which contains the PKI functionality.	In the server-side MeID option, the cryptographic material is stored securely on a Hardware Security Module on the server and no SIM replacement is required.
--	--

Both options are compliant with EU legislation on digital signatures, namely the EU Directive 1999/93. The client-side MeID is implemented in several countries, including Estonia, Finland and Sweden, while the server-side MeID is implemented by the Austrian federal government.

Moldova Government chose to deploy the client-side MeID option and put in place robust M&E tools for evaluating MeID usage and uptake, on a monthly basis. Technical performance of the MeID service is monitored as part of the government PKI infrastructure evaluation process.

The government implemented *identity management and authentication standards and tools that:*

- uniquely identify users and offer highest level of security known as of today;
- is highly re-usable, has low total cost of ownership and could be implemented and launched in short timeframe;
- is accessible to every citizen and business of any size.

Mobile ID solution description

The Mobile Signature works as an ID in the virtual world, allowing users to identify and authenticate themselves in the cyberspace in order to prove their identity with the cellphone.



Moldova Mobile ID solution requires replacing the regular SIM card of the cellphone with a special SIM card that includes functionality to produce digital signatures using mobile phone. Citizens can easily obtain the mobile signature from mobile operators, by taking their current ID card to the mobile operator and completing an application form. The whole process takes less than 15 minutes.

The process of accessing public services platform servicii.gov.md using MeID is very simple.



Figure 1: Usage scenario for MeID

Source: e-Government Center, Government of Moldova

Implementation of the MeID Service

In Moldova, the MeID service deployment was realized thanks to the strong commitment and partnership between the government and the private sector.

A detailed description of the implementation arrangements and roles' distribution is presented in Table 2 below.

	Government	Mobile Operators	
Enrolment	CA Role Issue qualified signature certificates	RA Role Ensure large coverage through distribution network	ESP (Gvt/Private)
Operation	Role - Validation - Time stamping	Role Provides end-user operation and secure data exchange with CA: - Signature on handset - End user charging - Customer support	Role - Consumes Mobile Signature Services

Table 2. Implementation arrangements/ Roles' distribution

The major part of the investment required in infrastructure procurement was provided by the private partners (mobile operators and vendors). The government didn't have to conduct additional procurement for the MeID implementation. Instead, it built on the existing PKI government infrastructure and let the private sector chose and procure what was mostly appropriate for a reliable, cost-efficient and rapid MeID platform deployment.

The Gemalto UICC-based technology was chosen by the private partners/mobile operators since it was compatible with all types of mobile telephones used in Moldova. The technology allows citizens to confirm their identity and sign documents directly from their mobile phone, by entering a unique user-selectable PIN code. The embedded Valimo Mobile ID application transforms any type of mobile phones into devices capable of delivering strong user authentication and legally binding signatures, essential features to securing e-Government services.

Challenges in implementing the MeID Service

Secure trust and commitment from the private sector

The challenge of convincing the private sector to enter into such a partnership with the government was addressed through high-level political commitment and support from the World Bank. To affirm its long-term vision, the government made it mandatory for all public services provided online to be integrated with MeID platform through MPass (government service for authentication and access control) and MSign (government service for digital signature).

Ensure privacy/personal data protection

National Center for Personal Data Protection has been part of the design and validated the implementation of the MeID service to ensure compliance with the legal provisions on privacy and personal data protection.

Key success factors in effective deployment of MeID service:

- Strong championship of the Government and sustained capacity development efforts within government agencies
- Knowledge sharing activities facilitated by the World Bank (IDM Experts Group¹) and other development partners
- Reuse of existing government PKI infrastructures
- Use of proven technologies and standards
- Existing enable legal regulatory framework

Also, the Government put in place a supporting e-services delivery infrastructure to support adoption and use of MeID



MPass – a centralized governmental authentication service, which offers single-sign-on and single-sign-out (SSO) functionality for electronic service integrated with it. MeID is integrated with MPass, and can be used as primary authentication option for citizens and businesses to access desired informational resources according to their access rights.



MSign – a centralized governmental signature service is also using the MeID. Every time when an electronic service requires a digital signature from its user it redirects the user to MSign so the signing process is as efficient and consistent as possible. MSign is capable to sign digital content using all options for digital signature available in the country, mobile signature, classic digital signature on smartcards or USB tokens and recently launched electronic identity cards.

Results start to be visible, despite recent launch of the platform, in September 2012.

High exposure public services provided to business through online channels have been streamlined and taken up due to use of MeID. About 50% of businesses reporting to National House of Social Insurance use MeID on a regular basis. There is a growing trend for adoption of MeID by citizens as well. Roughly 40% out of digital signatures applied by citizens to most popular electronic services are mobile signatures. The trend is positive adding other 0.3% to 0.5% to the abovementioned volume every month.

¹Identity Management (IDM) Experts Group – a bold undertaking of the World Bank who, in association with a number of partners, is creating a network to broker knowledge and provide quick access to cutting-edge expertise in the area of identification. The overall purpose of the initiative is to help governments in developing countries to design and implement projects aimed at strengthening the delivery and quality of public services, using modern identity management tools.

Integration of e-services with the MeID and electronic payment MPay platform proved to be highly beneficial and contributed to the uptake of ICTs in Moldova. Overall, public sector applications are driving uptake, while private sector applications are driving scale.

Lessons Learned

Past experience in comparable contexts has demonstrated that low adoption of the traditional digital signature solutions is mainly due to the:

- lack/limited number of e-services provided to citizen
- high costs associated with the deployment and usage of infrastructure
- insufficient mobility – card readers needed to be carried and additional client side software needed to be installed on client computer
- insufficient portability – classic digital signature kits on smartcards were impractical on new platform such as tablets
- insufficient outreach – single registration authority in the capital city
- insufficient client support – lack of capacity to offer acceptable quality client support

Government of Moldova developed a sustainable model to address these challenges and to ensure:

- financial sustainability of the deployment and operations
- large scale deployment capability
- multi-dimensional adoption of services (both governmental and commercial)
- collaborative promotion and client support

The best guarantor of MeID service sustainability is the partnership with the mobile operators, in a context of clear repartition of roles and responsibilities and a healthy business model in place.

The participating mobile operators - competitors on the Moldovan market – do not compete on MeID functionalities, but rather on the quality of service provided (the mobile penetration in Moldova exceeds 125%, and there are more than 3 million subscribers to mobile services).

The Moldova MeID project is a PPP based on revenue sharing. The partnerships agreement provides for mobile operators to define the conditions of the MeID use, including the costs for the mid and long term cost recovery.

Successful implementation of MeID with mobile operators, opened up possibilities for government to expand its e-government infrastructure in partnerships with private sector. In September 2013, the government launched in partnerships with a Moldovan technology company the electronic payment service – MPay, which makes it possible to pay for any public service connected to it with any payment tool legally functioning in the country. As of today, all commercial banks (14), all cash-in networks (3) and all post offices (over 1000) are part of the electronic payment infrastructure. Currently the Government is working on mobile payments based on digitally signed electronic invoices using mobile signature.

