PKI based cross-border e-Services in the Digital Trade Hub of Azerbaijan

Connecting the world, going from the ancient Silk Road to modern cross-border e-trade.


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FOUNDER OF B.EST SOLUTIONS
HEAD OF THE MOBILE-ID CENTER
START WITH MOBILE IDENTITY

Identity is fundamental

Identity is the cornerstone of all legal interaction between people, businesses and the state. A person’s ability to prove who they are is a prerequisite to conducting banking, accessing government services and performing countless other transactions.

KEY ENABLER FOR ACCOUNTABILITY AND GOVERNANCE
We can’t hold someone’s wealth in an account without knowing who they are; we can’t have transactions without being sure of the counterparties (KYC and KYB).

A FUNDAMENTAL HUMAN RIGHT
The United Nations recognizes identity as a fundamental human right and has included “providing a legal identity for all, including birth registration, by 2030” as one of it’s Sustainable Development Goals (UN target. 16.9).

PRE-REQUISITE OF A FUNCTIONING ECONOMY
Establishing identity is foundational for economical, social and political opportunity.
GLOBAL TRENDS TO KEEP AN EYE ON

People are going mobile

- Smartphones and tablets – fast growth ahead!
- User interface for everything
- Social distribution happens in hours

Big Data → service innovation

- Real-time data – uploadable, findable, sharable
- Processing costs fall rapidly → accessibility improves
- Data mining and analytics: finding patterns

But: cyber threats are intensifying
DEFINITIVE DATA AND ANALYSIS FOR THE MOBILE INDUSTRY

Global data

Mobile connections, including licensed cellular IoT April 2018
8,513,747,936
+ 6.20%

Revenue/year
FY 2017
$1,05T
+ 1.64%

Unique mobile subscribers April 2018
5,061,223,170
+ 3.72%

ARPU/month
FY 2017
$9,49
- 3.05%

Unique mobile subscribers and mobile internet users
Assessing the growth story: beyond subscribers

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2025</th>
</tr>
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<tbody>
<tr>
<td>UNIQUE SUBSCRIBERS</td>
<td>5.0 billion</td>
<td>5.9 billion</td>
</tr>
<tr>
<td>MOBILE INTERNET USERS</td>
<td>3.3 billion</td>
<td>5.0 billion</td>
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Source: GSMA Intelligence 2018, current year-end data except interpolated subscribers and connections
ON THE INTERNET NOBODY KNOWS WHO YOU REALLY ARE...

SPYWARE
VIRUSES
SPAM
ROOTKITS
TROJANS
PHISHING
MALWARE
HACKING
MOBILE-ID IS EASY

Mobile-ID requires no device upgrades on the customer side.

All you need is a mobile phone with secure SIM.

People are going mobile:

- 2012: 1,000
- 2013: 2,000
- 2014: 2,000
- 2015: 2,000
- 2016: 2,000
- 2017: 2,000
- 2018
- 2019E
- 2020E
Mobile-ID ADVANTAGES OVER eID

- NO CARD READER
- NO ID CARD
- NO E-TOKEN
- NO DRIVERS & PC SOFT
ASAN İMZA – HOW TO USE IT

1. **Public e-service**
   - **Enter your Mobile number**
   - User enters his phone number or username in the system that he wants to access

2. **Mobile-ID identification process started**
   - **Service name**
   - **Verification code 4325**
   - User verifies the code

3. **Generated signature is sent to the mobile operator**
   - **Enter PIN**
   - **Enter**
   - **Accept**

Mobile operator forwards the signature to DigiDocService
DigiDocService confirms the identity of the person
Service

**OK!**
WHAT IS MOBILE-ID?

Asan Imza: SIM based personal identification for digital services

Three-factor authentication

Digital certificates issued by Asan Imza cannot be used without an additional PIN code, meeting the three-factor authentication requirements of:

- “something you have” (physical SIM card),
- “something a user is” (biometrics and face-to-face meeting),
- “something you know” (PIN code).
The domain of issuing identity is usually seen as a fundamental government task.

Identity management based on government knowledge and information (population registry, checking validity of identity documents, fingerprints, photo, citizenship, etc). Identity is confirmed by state.

Asan Imza - qualified electronic signature is compliant to EU Regulation No 910/2014 (eIDAS Regulation).

Identification and method for processing mID applications must ensure high level of trust.

Asan Imza - the highest degree of confidence and the minimal risk.

**LEVEL 1**
- Username & Password
- Weak Authentication
- No Identity Proofing
- Risk extremely high

**LEVEL 2**
- Token
- Secure Authentication
- Presentation of Identity Information
- Risk mitigated

**LEVEL 3**
- Token + password
- Strong Authentication
- Verification of Identity Information
- Low risk

**LEVEL 3**
- Secure Token w PIN pad
- Strong Authentication w/secure devices
- Low risk

**LEVEL 4**
- PKI eID + PIN
- Strong Authentication w/secure devices
- Minimal risk

NIST declares the age of SMS-based 2-factor authentication over

**RISK LEVEL**

**LEVEL 1**
- Weak Authentication
- No Identity Proofing
- Risk extremely high

**LEVEL 2**
- Secure Authentication
- Presentation of Identity Information
- Risk mitigated

**LEVEL 3**
- Strong Authentication
- Verification of Identity Information
- Low risk

**LEVEL 3**
- Strong Authentication w/secure devices
- Low risk

**LEVEL 4**
- PKI Mobile ID PIN + SE (SIM or eSE)
- Strong Authentication w/secure devices
- Minimal risk
ASAN IMZA – MID GUARANTEED & ISSUED BY STATE

GOVERNMENT SERVICES

FINANCIAL SERVICES

BUSINESS SERVICES

>95% of services do not need physical presence

It’s me – Jon

AUTHENTICATION

I confirm this with my Signature

Qualified electronic signature with qualified digital certificate

TRUSTWORTHYNESS is in dependence of the ISSUER of the mID

STATE LEVEL issued mID creates state & international level of TRUST
MID (ASAN IMZA) SYSTEM IS PPP (PUBLIC-PRIVATE PARTNERSHIP) BASED SYSTEM

Stakeholders are:

- Certification Authority (ASXM)
- Mobile-ID Service Provider (B.EST Solutions)
- Mobile Operators (Azercell, Azerfon, Bakcell)
- End-users
- End-user Service providers:
  - e-Government
  - Banks
  - …
INTERCONNECTION SCHEME

MOBILE-ID CENTER

MT-ASXM

REGISTRATION CENTERS

The Taxpayers' Service Center

Mobile services provider 1
Mobile services provider 2
Mobile services provider 3
MT
MIA
MJ
SCPI
SSPF
Banks
Other organisations
WHO IS THE mID USER?
MID FOR BUSINESS AND TO KYC / KYB / PSD2 / GDPR

Asan Imza will answer who is Sabina and who is Narmina

Asan Imza – one unique "National Identity" issued by State. This identity is that which makes a person unique, i.e. itself and not another, and by extension recognizable and distinguishable from others: confers rights and duties.
AMOUNT OF TRANSACTIONS 2017–2019
ASAN IMZA IN NUMBERS

- Issued more than 1,700,000 Mobile-ID certificates
- More than 70 million transactions and Mobile ID signatures
- More than 1,000 public- and private-sector e-services are available
- All major banks and local mobile network operators issue m-ID
- Over 90% of tax declarations submitted electronically
- 100% of labour contracts are completed online
- 100% of B2B, B2G invoices are issued online
  with every digital signature Azerbaijan will save at least 1 EUR and 5 days in a year for every working person.
- 100% of customs declarations are completed online
- It takes 5 minutes to establish a company & bank account online
- All major banks are connected and issue m-ID
- 100% of invoices B2B and B2G done online.
- Zero incidents or security breaches
- The road to saving up to 2% of GDP per year
- Has saved hundreds of millions of working hours
- First in the world m-Residency project
THE MOST POPULAR E-SERVICES USED WITH ASAN İMZA

- **Tax services**

Ministry of Taxes of Azerbaijan holds the premier position among other public service providers. 63 of 457 public e-services are provided by the Ministry. It is one of the few government authorities rendering its services to the users also via a dedicated tax portal (www.e-taxes.gov.az). In general, till March 2017 taxpayers conducted around 10 MLN. tax operations using their Asan İmza via the e-Tax Portal.

- **Labour and social protection e-services**

The second largest figure of using e-services with Asan İmza is related with the e-services of labor contract registration for employers and employees rendered by Ministry of Labor and Social Protection of Population and e-services of State Social Protection Fund. The cumulative number of usage of these e-services with Asan İmza made approximately 1.5 MLN. in 2015.

- **e-Custom declaration**

The newly introduced e-customs declaration service allows citizens and businessmen to electronically declare their imported goods and transport means using mobile ID (Asan İmza) without the need to physically apply to any customs broker/customs department as it earlier used to take place. The whole process is as easy as logging in to the e-Government portal using Asan İmza, filling in the e-declaration and signing the ready declaration with again Asan İmza. Since only April 2016 more than 700 000 signed e-declarations have been sent.
**ASAN İMZA – REAL SOLUTION FOR RURAL AREAS, FOR PEOPLE WITH LOW COMPUTER & FINANCIAL LITERACY AND LIMITED ACCESS TO THE INTERNET IDENTITY**

- **Declaring taxes by phone: 195 Call Centre**
  Taxpayers can fill in and submit their simplified tax declarations by calling 195 Call Centre. There is even no need to use PC or Internet for this purpose; the operator of Call Centre will guide the taxpayer throughout the overall process only asking to confirm the ready declaration with his/her PIN2 to submit it.

- **Expanding the list of services at 195 Call Centre** and integrate other popular services via other call centers with Asan İmza including financial services

- **Client identification during call to bank or public service call center**

- **Mobile-ID allows service provider to positively identify caller**
DECLARING TAXES VIA 195 CALL CENTRE USING ASAN IMZA

1. Calls Call Centre
2. Authenticates user
3. Fills in declaration
4. Declaration sent for preview via SMS
5. Submits declaration signed with Asan Imza
ASAN İMZA HAS BEEN INTEGRATED INTO E-GOVERNMENT PORTAL

Asan Imza allows to use all e-services
ISESCO BESTDOC PORTAL – A CROSS-BORDER CORPORATE PLATFORM FOR DIGITAL SIGNATURE

- **ISESCO BESTDOC PORTAL**, claiming to be the first ever m-signing and authentication service in the ISESCO countries and globally as the best practice of innovative document management system for international organisations, aims to export the paperless society experience and enables sharing and m-signing of documents in any format underpinned by strong user authentication.

- Islamic Educational, Scientific and Cultural Organization (ISESCO) BESTDOC PORTAL uses e- & m-signature and authentication technology that aims to be at the forefront in the mobile signature world.

- Introduction to the project was in November 2015 at ISESCO annual meeting in Baku. Agreement signed in November 2016.
Digital Trade Hub of Azerbaijan – PPP based consortium

A Public-Private Partnership initiative established to develop the digital infrastructure of e-Trade in Azerbaijan and strengthen the position of the country as the Digital Trade Hub in the Regional and Globally. At the 3rd Digital Trade Forum named “Digitalization of the Silk Road” held on October 9, 2019 in Baku, the Agreement on formation a Public-Private Partnership Consortium between the Center for Analysis of Economic Reforms and Communications, PASHA Bank, B.EST Solutions and AzerTelecom, was electronically signed.
AZERBAIJAN – RIGHT PLACE, RIGHT TIME AND CAPABILITY

- Within reach to 50 countries with almost 50% of world consumers within 4-hour flight range
- Azerbaijan has free trade access to the 270 million consumers of the CIS, with GDP worth 1.6 trillion.
- 70% of the time is saved between China and Europe. It is considered to be the shortest linkage both in distance and time.
- Logistics hub for the Caspian region with the biggest airport, seaport, railway network and free-trade zones
SCALING A DIGITAL TRADE & CROSS-BORDER DATA FLOWS GLOBALLY, REQUIRES INTERNATIONAL LEADERS AND INNOVATORS JOINING IN

Azerbaijan is just big enough
We can be flexible, we can easily manage, we can change the wrong direction quickly, we can test anything and try something modern and innovative, we can become more mobile and more international

The invitation is open to the world
Azerbaijan is able and willing to make big strategic decisions inspired by the advances in technology for e-trade and share them with the world. The international community engagement is well welcomed and needed to facilitate right conditions and create a seamless environment. The list includes governments, policy-makers, experts and academics, international organizations, youth, civil society and innovators, in addition to the prominent involvement of business.

Azerbaijan’s Digital and physical infrastructure is available
Azerbaijan offers leading organizations such as the WEF, World Bank, United Nations, EBRD, Asian Development Bank and other. Governments and private companies to use its digital infrastructure including its DTH, its well-built physical transportation and logistics infrastructure as a “sandbox” to test ideas, capabilities and move closer to connecting the world.

Recognized know-how for implementing DTH pre-requisites
Partner countries understanding the importance of digital SME trade, but not having the capabilities to create the needed technological pre-requisites can count on Azerbaijan to help. Azerbaijan is one of the most digitally advanced countries in the world surpassing the US and most EU countries regarding the level of digital identity and e-signature ecosystems. Mobile Identity - Asan Imza gives access to more than 1000 public and private e-services, providing accountability and governance with the highest level of assurance.
We are a digital hub where both the public and private sectors meet to create a favorable business environment for digital nomads, freelancers and entrepreneurs. Our project was established by the President of Azerbaijan.
OUR SERVICES

E&M RESIDENCY
Become an electronic or a mobile resident of Azerbaijan

E-COMPANY
Establish your company online

E-BANK
Open an online bank account

E-WALLET
Make payments with your electronic wallet

E-DOCUMENT
Electronically sign and verify your documents
MOBILE-ID ENABLED TO OFFER FIRST IN THE WORLD M-RESIDENCY

M-RESIDENCY WITH ASAN IMZA

- Azerbaijan is the world's first country to offer m-Residency.
  
  It empowers entrepreneurs around the globe to set up and run a location-independent business in the country and use all the cross-border e-services of the Digital Trade & Cross-Border Data Flows of Azerbaijan.

  The aim of the project is to issue an Asan Imza Mobile ID to everybody who is interested, allowing them to start a business in Azerbaijan, invest in the country and use all online services from abroad.

ADVANTAGES:

- Establish a company online within a day
- Administer the company online from anywhere, any time
- Conduct e-banking and money transfers
- Have access to international online payment service providers
- Sign documents and contracts digitally
- Manage accounting records and declare taxes online
- Fill and confirm customs declarations online

WELCOME TO THE DIGITAL WORLD OF AZERBAIJAN!
HOW TO ESTABLISH A COMPANY

1. Become an e- or m-resident (Apply: button)
2. Submit your application to register your company using the secure online form
3. Sign the documents electronically
4. Pay the state fee and receive confirmation

- Filing Tax Declarations Online
- Starting a company in Azerbaijan within a day
- Digitally signing documents and contracts
- e&m-Residency ensures the followings
- Verifying validity and legacy of digitally signed documents
- Conducting e-banking and funds transfer transactions
- Online recruitment
- Managing accounting records
- Administrating the company from anywhere in the World
**50 SHADES OF BANKING SECURITY**

- **Why strong Mobile Identity?** Almost all interactions with financial institutions have one common point: **authentication**. You have prove your identity and as long as these credentials remain safe and intact, your money on your account is secure.

- **Customer identification** is a worldwide practice in online banking that simply asks the question: are you who you say you are? It is commonly known as **Know Your Customer (KYC)** and today additionally **KYB (Know Your Business)**.

- **Money laundering**, the illegal transfer of funds from or to illegal enterprises. The spread of worldwide terrorism and subsequent fear of lone wolf attacks in Europe and North America. Cutting their financial access to one of the world’s most respected financial capitals is vital.

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REMOTE AUTHORISATION FOR BANK TRANSFERS
REASONS FOR BANKS TO USE STRONG MOBILE IDENTITY

- New concept of customer service
  Nowadays banks are globally moving from the traditional “face-to-face” model of customer service to an innovative concept of “e-branches”. Using Strong Mobile Identity solutions definitely contributes to this process allowing banks to cut traditional costs on maintenance of physical branches and be online 24/7 for customers. No legally proved e-identity no 24/7 digital banking
  Planned integration of Mobile Identity into innovative video-banking channels and ATMs – the best way to fight with skimmers and malware...

- Enhanced customer satisfaction
  Bank customers can get all required services online with their innovative identities just in two clicks not spending their time and resources to visit physical branches of a bank. Additionally, they can use their Mobile-ID a single authentication tool across multiple online banking platforms of various banks.

- Maximum security of operations
  Thanks to Mobile ID technology, there is no need to use such vulnerable and old-fashioned authentication methods as usernames and passwords or OTP. Mobile Identity can no way be hacked or compromised by any third party, thus providing top level of security for all online operations and personal data of customers.

Asan Imza
- cannot be forged
- reduces paper usage considerably
- makes possible to rearrange human resources
- raises cost-efficiency
The Financial Markets Supervisory Authority of the Republic of Azerbaijan (FIMSA) passed the Rules on Opening, Maintaining, and Closing Bank Accounts. The Rules are registered with the state registry of legal acts 24 June 2019 and are effective as of 25 June 2019. The Rules set out the procedures for opening bank accounts remotely by legal entities as well as individuals including non-residents.
Transactions in banks for 2018

ASAN İMZA – SECURE KEY TO FINANCIAL SERVICES (KYC)
SINGLE EXPORT APPLICATION

Single Export Application provides access to several permits and licenses through a single application for individuals seeking to export their products. Entering information once, an exporter may obtain origin, phytosanitary and free-of-sale certificates and can delegate filling out customs declaration and export promotion application to “dth.az”.

- It shortens the time to obtain export documents. On average filling out each application takes 5 minutes.
- The service is free of charge. The cost of creating the export package is minimized.
DIGITAL SIGNATURES’ VALIDATION PROCESS BETWEEN AZERBAIJAN AND EU, GUAM, SILK ROAD – BASE FOR CROSS-BORDER E-SERVICES
DIGITAL TRADE HUB – BASE FOR CROSS-BORDER E-SERVICES BETWEEN AZERBAIJAN AND EU, GUAM, SILK ROAD, RUSSIA AND MORE THAN 2000 TRUSTED SERVICE PROVIDERS AROUND THE WORLD
CROSS-BORDER DATA FLOW USING HIGH-SECURITY X-ROAD DATA EXCHANGE PLATFORM
DIGITAL TRADE & CROSS-BORDER DATA FLOWS – POSSIBILITY OF MOBILE-ID

- Connecting the world, going from the ancient Silk Road to modern cross-border e-trade
- A smart TRUSTED platform for GLOBAL B2B e-Commerce & B2G e-Services

Features and a:

- **Easy movement of goods and regulations**
  Connects different stakeholders and policy areas within a holistic, cross-sectoral, cross-border and cross-institutional approach, to facilitate regulatory related requirements for the movement of goods across countries.

- **Paperless and seamless**
  Provides electronically the creation, submitting, issuing, sharing and managing all import, export, custom and transit-related e-documents that are validated and guaranteed by national governments.

- **Easy and convenient e-services**
  Facilitates cross-border e-services such as e-customs, e-apostils, e-invoicing, certificates of origin, phytosanitary documents, shipping documents, opening a company online, e-banking, accounting, e-document management, tax returns and many more.

- **Open source technology**
  Technology is vendor-neutral, provides unlimited speed and traffic volume. Not a cloud solution. Each country as a system owner may download it and install into own environment. Governments have full control of own data and data usage. After that, they can easily make a secure data exchange with any other DTH country.

- **Trusted, legally binding, backed by governments**
  Establishes Trust, Security and Interoperability between all players by providing validation services and confidence in authenticity to all transactions as all documents are legally binding.
WELCOME TO THE DIGITAL WORLD OF AZERBAIJAN
MY GOVERNMENT IS ALWAYS WITH ME

www.asanimza.az
ASAN İMZA – HAPPY TO SHARE