

Digital ID A Starting-Point Towards More Prosperous Country

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Introduction



While countries are competing and are being ranked on everything, from internet connection, health, happiness, investment environment and etc. one fundamental thing remains common for all those rankings – technology.

United Nations along with the World bank continuously report that unique digital identity for citizens enables dramatic leaps in public e-service quality and massive efficiency gains for governments. Countries embracing latter concepts of unique digital identity and e-services highly contributes to achieving United Nations Sustainable development Goals such as: strengthening digital literacy (Goal 4), digital inclusion (Goals 5, 8 and 10), digital connectivity (Goal 9), and digital identity (Goal 16). Furthermore, Unique digital identities for businesses are powerful tool for improving country's ease of doing business rankings.

United Nations along with the World bank continuously report that a unique digital identity for citizens enables dramatic leaps in public e-service quality and massive efficiency gains for governments. Ease of Doing Business report providing ease of doing business rankings and scores is an important measure having economic and political consequences.

- From the economical point of view, Doing Business report has become one of the most important indicators for companies making foreign investment decisions.
- From a political point of view, this index has become a tool to measure the success of governments worldwide, which drives countries to compete in the international arena.
- From the internal political point of view, governments often make ease of Doing Business rankings as a campaign issue in the elections, thus the whole country is carefully tracking them.

All these achievements are the result of internal digital transformations that countries have to carry on with. In this document we are going to reveal the guidelines of how to implement these digital transformations in the best possible way.

What is digital ID and why it matters?



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The concept of Digital Identity

In physical world identity is described as the unique set of features and characteristics that individualize a person, including the name and other biographical data of the individual. Traditionally in most of the countries passports or identification cards indicating the name, identification number and/or other representations of their bearers, which can be verified against documents or data stored in the central registry, serve as official means for identification. However, it is important to note that the unique set of features and not the document itself (e.g. passport, ID card, etc.) is considered to be the unique identity.



¹ Estimates provided by International Telecommunication Union (ITU) at the end of 2019, https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx

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Whereas in digital world identity is a more complex notion, which could be described as a set of electronically captured and stored attributes and credentials that can uniquely identify a person. These attributes and credentials can be divided into various categories such as birth-related information (name, place and date of birth, etc.), personal identifiers (national identification number, social security number, etc.), biometric data (fingerprint, DNA, etc.) and may vary from one environment or country to another depending on the type of identity schemes and models employed.

As it is evident from above-given definitions fundamental feature of any identification system is the uniqueness, meaning that the system must not only allow to establish the existence of an individual in a certain jurisdiction, but also uniquely identify the individual within a given population. Namely to ensure that no individuals in the system would have the same identifier.

Uniqueness is fundamentally important in several contexts – it helps to achieve data quality and accuracy, allowing to avoid data duplication, existence of so called "ghost" users, therefore reducing cases of fraud etc. But what is more - it induces considerable improvements of the overall governance processes by helping to achieve efficiency in data re-use and sharing between the systems, as in most countries identity schemes consist of interconnected systems, databases and registries. Consequently, uniqueness of the identities is one of the crucial elements in identification, which should be pursued and ensured.



3 main categories of Digital identity

In general, we can distinguish three main categories of digital identity:





Foundational – is where the legal identity of individual is being created with the purpose of identification, usually created as part of a national identity scheme, meant to be used by other agencies, e.g. civil registration and vital statistics (CRVS) system, national ID system, population register.



Functional – an identity established within a system for a specific purpose, such as to access services from a particular government department, healthcare institution or etc., for example driver license, voter ID.



Transactional – intended to simplify the performance of financial or other transactions across multiple sectors, e.g. bank ID.

Traditionally, countries have a mix of two types of ID systems – foundational ID systems and functional ID systems. Although foundational and functional digital ID systems may look more or less similar at first sight however the main difference is that foundational systems are created having general purpose (they are multi-purpose by design) whereas functional ones are meant for specific purpose, nonetheless they can be offered both by governmental and non-governmental entities such as NGO's and private organizations. Traditionally, countries have a mix of two types of ID systems – foundational ID systems and functional ID systems.



Identification systems are the authoritative sources of legal identity for the general population and serve as a proof of identity for a number of public and private services.

The importance of the foundational identification systems

National governments are the ones who play the primary role in setting up the foundational ID systems in the state. Establishment of such systems does not only contribute to the welfare of the citizens but also allows governments to achieve more efficient tax collection, amelioration of planning based on accurate vital statistics, provision of better response to pandemics, disasters and other emergencies, effective implementation of targeted social programs, transparency in governmental service provision etc. Private sector entities are also the ones who benefit from effective and robust national identification systems and financial institutions may serve as a good example for this purpose. Financial institutions must verify the identity of the client before making any financial transaction, therefore ability to verify the data submitted by the client against the data stored in the national registry is a valuable tool.

The ability of national government to deliver essential services to individuals is directly dependent on ability to identify the individuals. Official national identity is the key element for individuals to access their basic rights to social services, healthcare, voting etc. Whereas inability of the individual to prove identity leads to economic, political and social exclusion.

Providing legal identity for all

One billion of people worldwide currently lack an official proof of identity, which means that they might be deprived of and/or not able to use their basic human rights stipulated by international laws and conventions, not to mention the ability to access general services – opening a bank account, receiving social allowances etc. No individual should be left behind to suffer the indignity of exclusion, be denied opportunity to exercise their rights and realize their full potential.

Due to its scale this "identification gap" has become a globally recognized concern and challenge acknowledged by international community. The Sustainable Development Goals (SDG's) set in 2015 by United Nations Resolution voted on by all member states of the General Assembly, calls for all UN member States to "provide legal identity for all, including birth registration" by 2030 (target 16.9). Digital identity systems are generally identified as the best ssolution to achieving this target. Situation in emerging countries differs considerably – many of them do not have neither effective and well-built civil registration systems, which are the basis for establishing the uniqueness, nor the identification systems in place. 10101 10

Different Digital-ID maturity levels

Despite of its acknowledged importance the role of digital identification systems varies from country to country. High-income countries usually have an effective and well-established physical identification system; therefore, introduction of digital identification is considered as an upgrade to the existing system. Many of these countries use the existing physical identity infrastructure to create digital identification systems as well as to move towards the provision of efficient public e-services. Most of the middle-income countries are in a path towards digital identification that gradually replaces physical identity services at the same time stipulating the creation of e-services. Whereas situation in emerging countries differs considerably – many of them do not have neither effective and well-built civil registration systems, which are the basis for establishing the uniqueness, nor the identification systems in place. Therefore they are leapfrogging the traditional physical identification schemes and moving directly towards building digital identification systems. In latter case, digital identification itself is the ultimate goal and not the creation of electronic services. Such rapid shift towards digital identification might encompass some risks, such as fragmented digital identification strategy or absence of it, lack of interoperability, consistency and integrity.

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Benefits and practical use

Concept of digital identity is not a new one, it derives from the practices that individuals develop online and the public need. Digital identity is undeniably an effective tool for governments, individuals and private entities to unlock the benefits of digital society and economy as well as to facilitate the interactions between them. Digital identity together with a well-designed strategy may significantly improve planning, policy making, finance allocation, access to services, social inclusion, and bring number of other benefits, some of them are listed and discussed in this section.

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Promoting inclusion and empowering people

Digital identity can be a powerful tool to enable people, having no physical identity documents, to participate in digital economy without any barriers. Meaning that it gives access to services, social benefits and economic opportunities, making sure no one is left behind. Not mentioning the convenience of having digital identity, where the access to services is available 24/7 and requires no physical interaction.

Improving service delivery

In terms of service delivery, it is important to highlight the empowerment digital identity brings to governments, especially as regards to establishing target groups for social protection programs. Digital identity requires the digitalization and modernization of all the registers and systems that are part of national identity scheme, usually one of the goals of such digitization is data accuracy and effective data exchange between institutions, allowing to aggregate all the information on individual. Such information is crucial for government in order to make well informed decisions and move forward with accurately targeted social programs, resulting in amelioration and facilitation of service delivery. Ongoing pandemic has highlighted the undeniable value of government's ability to react in timely and efficient manner introducing social protection programs or making cash transfers to the most vulnerable segments of population. On the other hand, individuals can also enjoy the benefits of effective government programs by receiving the social benefits without having to go through number of bureaucratic procedures.

Reducing costs: service and delivery

Digital identity usually grants access to an array of e-services increasing the convenience and flexibility – many services that required physical attendance or verification of their identity in person shall be accessible online at any time. Digital identity grants access to physical services by providing possibility to verify individual identity. For verification of identity, the IT solutions by different service providers need to be integrated, which means - the entire infrastructure has to be built that supports verification of individual identity. Meaning that the time and cost required to access the services will reduce. As regards to service delivery, digital identity will allow to achieve reduction of costs both for private and public sector. Reduction of in-person services for public administration employees allows to increase productivity without lowering the quality of the services, by shortening the time required to deliver the service. Whereas for private entities able to use the national identity structure offered by the government it also allows to reduce the expenditure resulting from process optimization, reduction of personnel and physical delivery points, time required for user's request and etc.



Financial inclusion and improved access to financial services

Financial services are one of the most strictly regulated sectors were inability to verify person's identity leads to exclusion from economic opportunities – opening a bank account, receiving a loan or many other services enabling people to ensure their well-being. What is more individuals that lack means of identification usually are the most socially and financially vulnerable groups of society that require access to such services the most.

Widening the tax base

Digital identity is not only about rights, but also about the obligations. Many developing countries all over the worlds struggle with tax collection, therefore governments ability to identify individual widens the tax base, by increasing the number of registered taxpayers.

Driving Growth

Digital identity and e-services create an ecosystem with reduced transaction costs and lower risk of fraudulent activities, therefore stipulating growth and unlocking new opportunities.

Promoting transparency

Introduction of digital identity has proved to be a powerful tool for reducing cases of fraud and fostering transparency. Reduction of fund leakages and fraud in benefits for social protection, health insurance and pension schemes – all these issues are tackled by increasing the overall accuracy of information or eliminating data duplication, non-existent identities so called "ghosts" or other information gaps that can potentially be used for corrupt practices.



What comes first – digital ID or digital services



"Chicken or the egg" problem is quite common when it comes to digital products. Number of countries that have digital identities and identification systems has significantly increased during the last decade and every country probably has its own story what was the main stimulus that led to creation digital identity and digital services.

Case study: Lithuania

One of great examples could be the case study from Lithuania, a small Baltic state in the Northern Europe. Why Lithuania? Because currently it is among fastest growing and the most advanced countries in the region.

In 2003 Directive 2003/58/EC by the European Parliament and the Council regarding the disclosure requirements in respect of certain types of companies has set a requirement for European Union (EU) states to enable companies to submit data and documents to the national register by electronic means starting from 2007. The directive was transposed to Lithuanian national law and caused serious internal discussions - why should a country invest in developing infrastructure for electronic signature if it does not have e-services in place, and vice versa - why does a country need to create electronic services if almost no one uses digital identification and e-signature.

Finally, in 2007 there were few European countries which have showed a great example and introduced e-services for the submission of documents to the registry, which was a breaking point showing that such developments of e-services are viable and effective. Therefore, seeing positive changes in regional environment has led the Government of Lithuania to prioritizing e-service for document submission. However, from the very beginning of implementation of latter e-services it was clear that digital identity shall be necessary and used as a prerequisite for authentication and electronic document signing. No matter the strategy, the creation of national digital identity system should be coupled with e-services or at least be rolled out having a vision that e-services will be created in the nearest future.

Establishment of e-services was a serious challenge for the Government as the state did not have a functioning digital identification infrastructure in place, nevertheless both e-service and digital identification were created by 2008. The same year the Certification centre, responsible for issuing qualified electronic certificates, was established, which gave a significant impetus to development of other e-Services.

Therefore, Lithuania is a great example that the emergence digital identity and identification can be stipulated by creation of e-services. Whereas in some other countries, especially the developing ones, establishment of identity itself is the main objective. Nevertheless, no matter the strategy, the creation of national digital identity system should be coupled with e-services or at least be rolled out having a vision that e-services will be created in the nearest future.



What it takes to build a sustainable digital identity

In order to understand the notion of digital identity, we must first remember that at the core of every identity there is a human being. Therefore, the very first goal of any identity system no matter whether it is digital, or physical one, is to promote human rights, inclusive societies and ensure that the identity is a public good accessible to everyone.

The goal of national identification system should be to provide reliable, secure, universal, sustainable and digital identification system that supports unique legal identity, which starts at birth and is terminated at death.

One of the most important milestone documents of human rights and a common standard is the Universal Declaration of Human Rights (UDHR), proclaimed by the United Nations General Assembly on 10 December 1948, Article 6 of which foresees that "Everyone has the right to recognition everywhere as a person before the law". Considering the critical importance of identity in development, UN Social Development Goals also highlight the importance of individual identity and set the goal to provide legal identity for all, including birth registration by 2030. The goal of national identification system should be to provide reliable, secure, universal, sustainable and digital identification system that supports unique legal identity, which starts at birth and is terminated at death.



Uniqueness

Digital identity does not appear out of nowhere, existing national identity system is a good basis for the transition to digital identity.

So, what does identity system encompass? First of all, every individual must be prescribed a unique identity – a set of attributes and characteristics, that individualize a person. Uniqueness is the core of the identity management, it does not only ensure the use of rights for individual, but also secures their proper use (e.g. one vote, one entitlement). There are several options how the uniqueness can be established, however for this purpose civil registration and vital statistics (CRVS) system usually serves as a valuable tool. For the purposes of convenience and accuracy governments choose to link this set of attributes and characteristics, that individualize a person, to a unique identifier (UIN) in order to identify a person. UIN is unique sequence of at least ten digits to identify a person, designed as a logical construct referencing to date of birth, gender, code of geographical location at birth, or a random number. Current practices suggest using random numbers for privacy protection and avoiding discrimination related to information encoded in the number. UIN is used for multiple purposes facilitating search and information retrieval from registration databases of registers and information systems, facilitating interactions between individuals and governmental institutions, serving as a basis for interoperability of registers and state information systems, verifying individual identity etc. Most of the times UIN also serves as a link between civil registration system and the national identity, as well as ensures the interoperability of other registers and state information systems.

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Civil Registration and Vital Statistics System (CRVS)

CRVS system is the most fundamental asset and building block of the national identification system. World Bank's Identification for Development (ID4D) initiative designed to help countries realize the transformational potential of digital identification systems, also highlights the importance of CRVS, by indicating as their main objective the need to supporting countries to build inclusive and trusted CRVS system **and ensure its integration with digital identification.**

Civil registration as defined by UN is the universal, continuous, permanent, and compulsory recording of vital events (for example, birth, death, marriage, divorce, and adoption) in accordance with the legal requirements of each country².

The main functions of the CRVS system are:

Establishing civil status and capturing uniqueness - registering vital events and keeping records that constitute the source of civil status;



Statistics - captures all life events of the individual from the birth to death, therefore serving as the main source of vital statistics used by national governments for planning and monitoring the implementation of plans for development;



Identity management - provides continuous and accurate information for the purposes of identity management.

CRVS (Civil Registration and Vital Statistics) system is the most fundamental asset and building block of the national identification system. It provides full coverage of live events of the individual starting from birth it is continuously updated throughout the lifetime and provides credentials that allow to establish legal identity as well as to prove it.

² United Nations Statistics Division, Department of Economic and Social Affairs. Principles and Recommendations for a Vital Statistics System, rev. 3. New York: United Nations Department of Economic and Social Affairs; 2014. p. 65.

National identity itself without CRVS system resembles a dysfunctional house – a house floating in the sky without foundation, pipes, electricity, and other infrastructure. To some extent you can live in such house, but sooner or later you face a lot of problems. So, no matter how good the national identity system is, it cannot function without its foundation – the CRVS system.



Therefore, CRVS system provides full coverage of life events of the individual starting from birth it is continuously updated throughout the lifetime and provides credentials that allow to establish legal identity as well as to prove it. Whereas individual's national identity as such is registered and begins much later than birth – it is when individual becomes subject to the full weight of the national laws. The issuance of national identity document is usually mandatory for individuals of 16-18 years old, leaving a considerable part of the population (individuals of 0–18 age) excluded from society.

National identity itself without CRVS system resembles a dysfunctional house – a house floating in the sky without foundation, pipes, electricity, and other infrastructure. To some extent you can live in such house, but sooner or later you face a lot of problems. So, **no matter how good the national identity system is, it cannot function without its foundation – the CRVS system.** However, merely linking national identification system with CRVS is not enough, such linkage itself does not guarantee the success when building the digital identity. **Only complete, accurate and efficient digital CRVS system is a proper basis for further developments, consequently strengthening of the national CRVS system should be a prerequisite for national identification.**



Ensuring the effectiveness of the digital CRVS system

Naturally, the question how to ensure the effectiveness of the digital CRVS system follows. To answer this question four domains – legal framework, institutional and organizational setting, technology and services – should be addressed.



Legal Framework. A strong legal and regulatory framework aligned with international law and best practices is fundamental to the success of a CRVS system. As sound legal framework provides the basis for a universal and responsive CRVS system. Legal framework should protect the confidentiality of personal data and ensure that data can be securely shared between approved departments, as necessary, for quality assurance and to produce the required vital statistics.







Technology. ICT has the potential to transform CRVS systems based on its ability to extend registration coverage, standardize and streamline processes, and integrate data, all at a low cost. The advantages of ICT technologies are clear, that is why developing countries are making huge investments in their path to digitize their CRVS systems.



Institutional and organizational setting. CRVS system should be a permanent function of the governance mechanism of every country. It therefore requires governmental support and commitment of all stakeholders, to provide the necessary resources, including institutional and legal frameworks, human and financial resources, as well as a deliberate policy of interagency collaboration.



Services. General improvements of the CRVS systems have to be backed by demand for registration certifying documents that are generated by other sectors (both – public and private), by fiscal or in kind incentives to register, by elimination of disincentives that impede registration process and by improvements in services supply side. Services should be nearer to where people live, delivered instantaneously, be free, and use procedures that are transparent, clear, simple and culturally sensitive. People should be aware on the benefit of CRVS and the link of the identification certificates to other relevant sectors, as a major prerequisite to receiving other services.

The way to succeed with Digital identity initiatives



Introduction of digital identity requires political will, commitment, and serious amount of financial resources, therefore before leaping into the digital dimension it is crucially important to identify the potential risks in order to avoid the most common pitfalls. It is especially important to do so for countries that do not have a well-functioning system of unique national identity, effective CRVS system, population register and etc. There are number of reasons why implementation of digital identity systems might not turn out as effective as planned. These reasons must be established on case by case basis, however some of them are most common. Although single formula for creating a viable digital identity system may not exist, but there are several elements that should be taken into account.



Have a national digital identity strategy

Digital identity strategy should take high stand in the overall national strategy for digital transformation as it is the key to unlocking the digital services and achieving social inclusion. It is very important that before taking any steps towards creation of digital identity, the government would have a clear vision for implementation of digital identity based on deep understanding of existing undelaying institutional setting, national identity schemes and data resources. Despite of national context all the governments must have a solid digital identity strategy that would be based on extensive research and consultations with stakeholders. The strategy should be well tailored, considering potential risks and pitfalls. However, no matter what strategy government chooses to lean for, either its universal scheme based on foundational systems or harmonization of existing functional systems, at the core of every strategy there should be a mechanism that guarantees the accessibility of digital identity for all the citizens.

Create comprehensive and reliable legal, regulatory frameworks and identification processes

It is a complex task for the governments to create a legal framework which would not only set the

basis for digital identity, but also foresee a broad range of use cases both for private and public sectors. For this purpose, not only changes in laws are required, but also set of different new rules and regulations to ensure the practical use of digital technology. Failure to set proper legal basis as well as to amend legislation preventing or limiting the use digital identification may lead to failure adopting it.

Address all key elements of identity systems (CRVS)

Digital identity schemes rely on a core of interconnected systems, databases and registries. National identity system is the combination of national registries and systems, whereas CRVS system is at the very foundation. Before creating a national identity system, it is important to ensure that an effective and accurate CRVS system is in place. Usually countries that have a well-functioning national identification system are able to upgrade them to digital ones more easily, as they have foundational systems and processes in place. **Major problems emerge in cases where countries leapfrog the traditional physical identification schemes and move directly towards building digital identification systems.**



Establish an unique identifier (UIN)

UIN is a valuable tool linking to the set of attributes and characteristics, that individualize a person and establish uniqueness. UIN is assigned at birth and should be used in all the subsequent documents such as marriage certificate, national identification document and other legal documents that an individual receives throughout his lifetime. This way UIN serves as a linkage between different registries and databases creating a basis for interoperability.

Assure interoperability

Introduction of digital identity requires the digitalization and modernization of all the registers and systems that are part of national identity scheme. What is more these registers and systems must also be interlinked allowing the identity data to be traced across them. Interoperability does not only allow to avoid data duplication and achieve more coverage, but may also potentially reduce the operating costs for institutions participating in national identity scheme. Quite often developing countries have fragmented identity ecosystem with multiple competing systems, that are not interconnected. Such ecosystems entail high risk for exclusion as each of the functional systems are separate with their own separate requirements for eligibility. Inability of such systems to "talk" to each other leads to incompleteness and duplication, where individuals may have several "identities."

Keep in line with basic principles

The process of creating digital identity inevitably involves a lot of grey zones to be addresses to whereas basic principles provide guidance and reveal the essential paradigm behind digital identity. The World Bank and the Center for Global Development has prepared an authoritative list of principles that must be considered when creating a digital identity and identification strategy in the country³.

These principles are divided into three groups addressing specific areas of identification:

- Universal coverage and accessibility identity system should aspire for continuous universal coverage from birth to death with no barriers for access, making the identity a public good;
- Design robust, secure, responsive, interoperable and sustainable identification systems, responsive to user demand needs;
- 3. Governance protecting privacy and user rights.

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³ The World Bank and Center for Global Development. Principles on identification for sustainable development: Toward the digital age, http://pubdocs.worldbank.org/en/200361509656712342/web-English-ID4D-IdentificationPrinciples.pdf

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The final takeaway

No matter what the ultimate goal is – bring socio-economic benefits, build more inclusive societies and improving public service delivery which transform to tasks like lowering poverty, improving greater access to public services, improving ease of doing business environment and attracting more investment, implementing National Digital ID is a complex and complicated task. Besides following the above listed guidelines it is also important to follow the best-practices and have a reliable partner leading you through the process. On the other hand, ask questions, be curious and critical when choosing consultancy and implementation partners. In the end the work must be done by particular people, that have deeper knowledge and experience of the subject matter. The more experienced they are, the greater is the rate for success.

NRD Companies is an international group of information technology and consulting companies that specialise in the development of public sector and digital infrastructure solutions. The group's companies focus on financial and governmental technology solutions and practice-based consultancy to help countries around the world achieve the United Nations Sustainable Development Goals. NRD Companies, as part of the INVL Technology group, is a recognised market leader that operates on all five continents. The group of companies has successfully implemented electronic service and tax administration platform projects, as well as the digitisation of national post offices and a number of other digital solutions.

The NRD Companies group has the following subsidiaries: Norway Registers Development AS, NRD Systems, NRD Rwanda, NRD Bangladesh, ETRONIKA and Infobank Uganda.





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