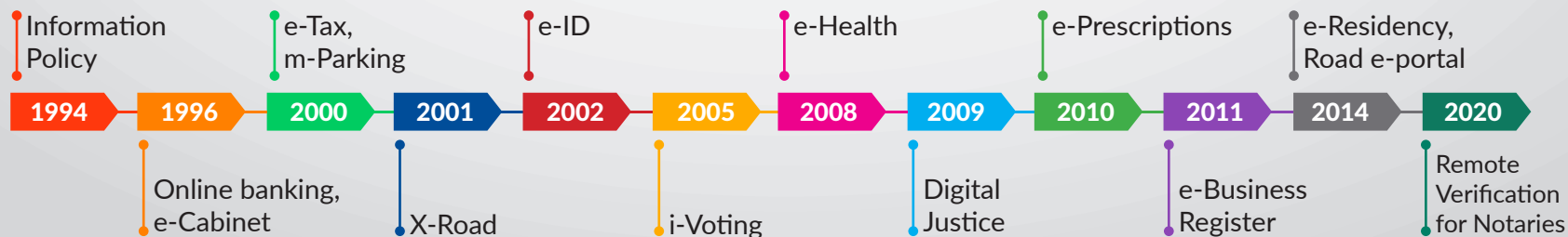




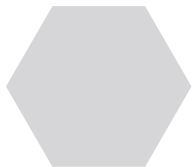
ILYASHEV  
& PARTNERS

# DIGITAL SERVICES. THE EXPERIENCE OF ESTONIA



1994

## THE FIRST DRAFT OF THE “PRINCIPLES OF ESTONIAN INFORMATION POLICY”



A strategic outline for IT development is drafted and ratified by the Estonian parliament four years later.



As result 1% of GDP earmarked as state funding for IT.



# 1996

## FIRST E-BANKING SERVICES ONLINE BANKING SOLUTIONS DEVELOPED BY PRIVATE BANKS



The development of high-quality e-banking services, which encourage people to get online, embrace e-governance and, later, e-ID. Now 99% banking transactions are online. You can access internet banking services anytime from anywhere in the world and you can do transactions online without visiting a bank.



1996

## E-CABINET MEETING DATABASE AND SCHEDULER FOR STREAMLINING GOVERNMENTAL DECISION-MAKING PROCESSES

Was created to reduce government bureaucracy by making e-solutions part of governance.



# 2000

## E-TAX BOARD

Estonians able to declare taxes online.

To declare taxes now takes about 3 minutes online; 98% of people declare their income electronically. This maximized state tax revenue.

e-Tax is an electronic tax filing system set up by the Estonian Tax and Customs Board.

The system enables you to:

- file an enterprise's declarations for income tax, social tax, unemployment insurance, and contributions to the mandatory pension fund;
- request value-added tax returns;
- request alcohol excise, tobacco excise, fuel excise, and packaging excise duty returns;
- file customs declarations;
- file personal income tax declarations.



2000

## m-PARKING



A system that enables drivers to pay for city parking via mobile phone.



95% of parking fees are paid via mobile phones, Estonia's m-parking solution has been adopted in countries around the world



# 2001

## X-ROAD



Distributed data exchange layer for registers and information systems.

The point was to create a national integration platform to reduce data exchange costs, and end data leaks from existing unsecured databases.

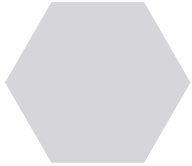
The X-Road software-based solution is the backbone of e-Estonia. Invisible yet crucial, it allows the nation's various public and private sector e-service information systems to link up and function in harmony.

Estonia's e-solution environment includes a full range of services for the general public, and since each service has its own information system they all rely on X-Road. To ensure secure transfers, all outgoing data is digitally signed and encrypted, and all incoming data is authenticated and logged.

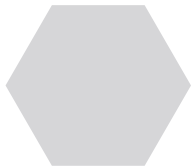
It connects different information systems that may include a variety of services. It has developed into a tool that can also write to multiple information systems, transmit large data sets and perform searches across several information systems simultaneously. X-Road was designed with growth in mind, so it can be scaled up as new e-services and new platforms come online.

2002

## E-ID AND DIGITAL SIGNATURE



Digital identification based on the mandatory ID card.



Securely identify residents using public and private e-services.





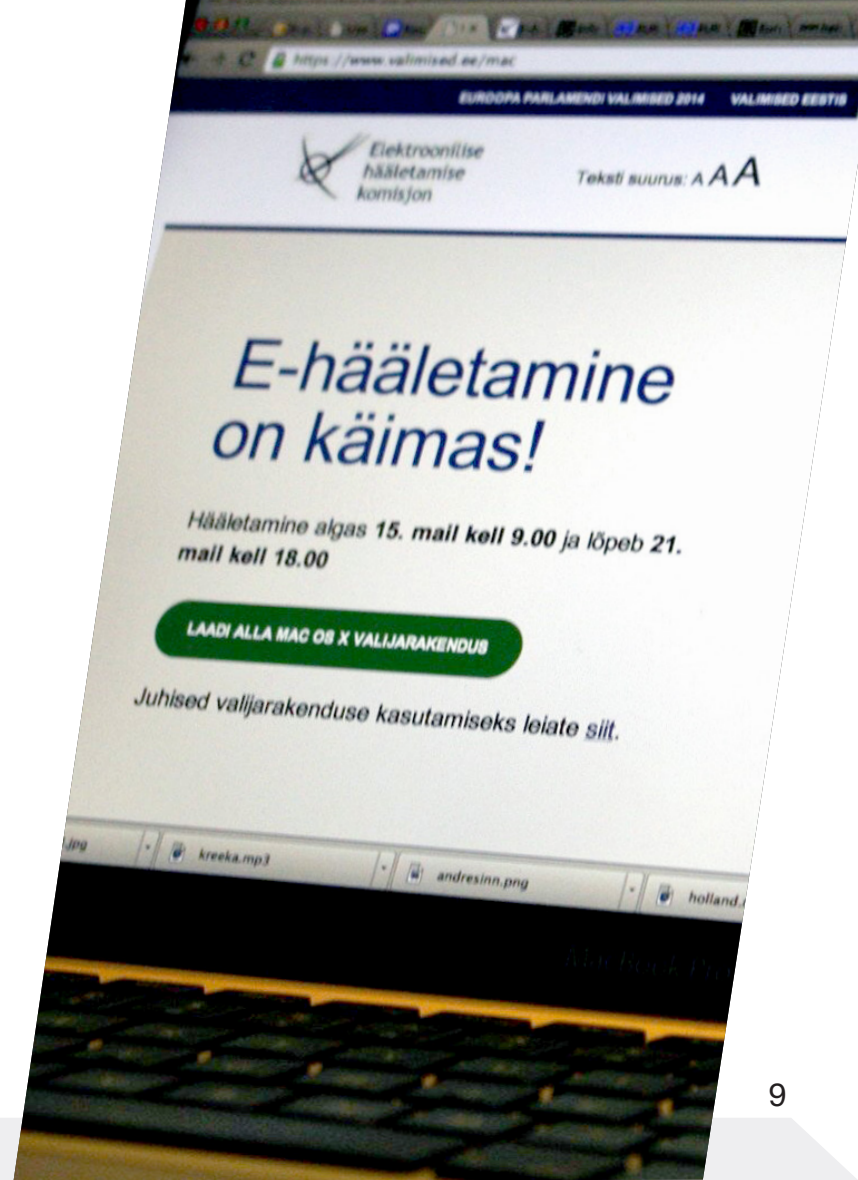
# 2005

## I-VOTING

Maximizing accessibility to local and general elections.

Internet voting (i-voting) is a unique solution that conveniently engages citizens in the governance process. This system allows voters to cast their ballots from any internet-connected computer anywhere in the world. During a designated pre-voting period, the voter logs into the system using their government-issued e-ID and casts a ballot. The voter's identity is removed from the ballot before it reaches the National Electoral Commission for counting, thereby ensuring anonymity.

Since 2017, 16- and 17-year-old citizens have been eligible to vote in local elections. And historically, no less than 36% – and sometimes nearly 64% – of eligible voters participate in the i-Voting system.



# 2007

## CYBER SECURITY

Concerted effort to safeguard online data.

In April 2007, Estonia was hit by the largest organized cyber-attack against a single country to date.

International cooperation was needed to contain the emerging threat. Estonians decided to solve the issue at the state level. As result Estonia has become one of the leading nations in cyber security. Both the NATO Cooperative Cyber Defence Centre of Excellence and the EU IT Agency are situated here in Tallinn.



# 2008 E-HEALTH



Electronic health records provide comprehensive profile of each patient. Reducing bureaucracy and giving access to time-critical information in emergency.

The Electronic Health Record (e-Health Record) is a nationwide system that integrates data from Estonia's different healthcare providers to create a common record that every patient can access online.

Functioning very much like a centralized, national database, the e-Health Record actually retrieves

data as necessary from various providers, who may be using different systems, and presents it in a standard format via the e-Patient portal. A result is a powerful tool for doctors that allows them to access a patient's records easily from a single electronic file. Doctors can read test results as they are entered, including image files such as X-rays even from remote hospitals.

KSI Blockchain technology is used to ensure the integrity of retrieved electronic medical records as well as system access logs.

# 2009

## E-TOIMIK (DIGITAL JUSTICE SYSTEMS)

Justice procedures are the cornerstones of any economy. Estonia has helped numerous countries build their digital justice systems based on three main components: the e-File central information system, the court information system, and a public portal for citizens and other parties.

The e-File is the heart of the Estonian judicial system. It provides data to our court information system as well as to the information systems of the police, jails, prosecutors and criminal case management. Since data is digitally entered only once, the e-File saves time and money.

All communication between parties is electronic – including workflow, creating and sending summons, minutes of hearings, and decisions – and all parties can electronically follow proceedings. Signing the decisions is possible both electronically and physically.



# 2010

## E-PRESCRIPTIONS

e-Prescription is a centralized paperless system for issuing and handling medical prescriptions.

When a doctor prescribes medicine using the system, he or she does so electronically, with the aid of an online form. At the pharmacy, all a patient needs to do is present an ID-card. The pharmacist then retrieves the patient's information from the system and issues the medicine.

99% of medical prescriptions are handled online; routine refills can be issued without appointments.



# 2011

## E-BUSINESS REGISTER



Estonia's e-Business Register is an advanced and secure tool that allows entrepreneurs to register a new business online in just minutes without having to go to a notary or some other official.

Since 2011, most companies have been established online using the e-Business Register. The time associated with the registration process has fallen from 5 days to a couple of hours.

The e-Business register allows you to register a new company online, change data in the business register, file annual reports, manage the members

list for political parties, or make detailed inquiries about other companies. All it takes to register an Estonian company is an ID card, Mobile-ID, or e-Residency card, and an internet connection.

The e-Residency program allows non-Estonian citizens to also access the register and use the digital solutions when establishing a company in Estonia.

The e-Business register makes the process of registering a company and submitting documents like annual reports easy and efficient for users online no matter where they are.

# 2014

## E-RESIDENCY



A borderless digital society for any global citizen to join. To discover innovative ways to attract international business and talent to Estonia.

In 2014, Estonia launched its e-Residency program to fulfill its ambition of creating a borderless digital society for global citizens.

The program provides holders of e-Residency with a transnational digital identity. This identity allows them access to a platform built on inclusion, legitimacy, and transparency. E-residents also have access to the EU business environment and can use Estonian public e-services.

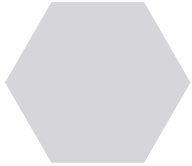
People from across the globe choose to become e-residents so that they can run a trustworthy,

location-independent EU company online with all the tools needed to conduct business worldwide. For example, e-residents can:

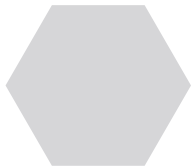
- Set up and manage a location-independent company online from anywhere in the world
- Establish a trusted EU company online in one day
- Manage the resulting company fully online
- Apply for a business bank account and conduct secure e-banking
- Access international payment service providers (Paypal, Braintree, etc.)
- Digitally sign and transmit documents
- Declare Estonian taxes online

# 2014

## ROAD ADMINISTRATION'S E-PORTAL



One-stop online service for drivers and owners of vehicles.



The e-portal provides services six times faster, 20% cheaper, and increases transparency.





# 2017

## NIIS X-ROAD CONSORTIUM

Nordic Institute for Interoperability Solutions (NIIS) ensures the development and strategic management of X-Road and other e-governance solutions.

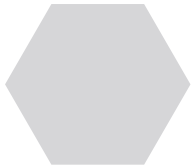
Founded by Estonia and Finland in 2017, NIIS is a pioneer of cross-border e-governance solutions, intent on providing better content and services for the public.

NIIS is both a network and cooperation platform and executioner of IT developments in members' common interests. The institute focuses on practical collaboration, sharing of experience, and promoting innovation. The operating model of the institute is something unique in the world.



2020

## REMOTE VERIFICATION FOR NOTARIES



Remote authentication enables the conduct of notarial acts using Veriff's online identity verification platform.





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 **Thank You**  
**For Attention**