Estonia's E-identity Program

"After gaining independence from the Soviet Union in 1991, Estonia, one of the smallest nations in Europe, was left with little public infrastructure and virtually no commercial activity. It needed to build high-functioning government services for its residents and fledgling private sector." (Braverman and Kuntz, 2012).

The Government of Estonia began building a robust digital ID ecosystem using citizen information from the Population Register Act. "The Population Register Act issues a unique number to every Estonian resident, termed the Personal Identification Code ('PIC'). The PIC is issued to every individual at birth or any time after application to the processor of the Population Register ('PR'), but it does not function independently as a digital ID." (Digital ID, 2020). The government used this PIC as the input into a robust digital ID program.

Quick facts

Barriers addressed

Policy & Regulation
Lack of proportional & tiered KYC requiremens

Digital & Physical Infrastructure
Poor digital & foundational ID infrastructure

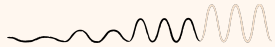
Product & Market Design
Poor understanding of women's needs

Consumer Protection
Difficulty resolving complaints
Fear of privacy violations

Segment focus

1 2 3 4

Customer Journey Relevance



Geography

Estonia

Key stakeholders involved

Government of Estonia
Banks
Telcos

Sources

Braverman and Kuntz, 2012; Digital ID, 2020; Enterprise Estonia; Kotkas, 2022; Privacy international, 2022.

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Key activities

"In 2003, the government launched the first version of its e-government portal (www.eesti.ee), which offered secure online access to a handful of government services." (Braverman and Kuntz, 2012). "When a resident applies for the issue of a digital ID, the information they submit is checked against the Population Register, and they are issued a digital ID (or e-ID) that is made unique by the inclusion of the PIC." (Digital ID, 2020).

"The e-ID and the ecosystem around it are part of any citizen's daily transactions in the public and private sectors. People use their e-IDs to pay bills, vote online, sign contracts, shop, access their health information, and much more. Holders of a digital identity need not be Estonian residents anymore however. Since 2014, Estonia has also offered a program called e-Residency for anyone who wishes to become an e-resident of Estonia and access its diverse digital services regardless of citizenship or location." (Enterprise Estonia). "Private-sector entities, such as banks and telecommunications companies, also offer services through the state portal – and thus have an incentive to invest in maintaining the infrastructure backbone." (Braverman and Kuntz, 2012). The country also expanded the system to have a mobile ID service accessible via smartphones equipped with SIM cards.

Key uses of the e-ID:

Cited from Enterprise Estonia:

- A legal travel ID for Estonian citizens travelling within the EU
- A national health insurance card
- A proof of identification when logging into bank accounts
- Digital signatures
- Internet voting
- To check medical records, submit tax claims, etc.
- To use the e-Prescription service

Outcomes/results

"Today, Estonia's 1.3 million residents can use electronic ID cards to vote, pay taxes, and access more than 160 services online, from unemployment benefits to property registration... More than 99% of the country's people now have electronic ID cards, and every day approximately 10,000 users visit the portal." (Braverman and Kuntz, 2012). 70% of the population use an ID card regularly for public services. 94% of taxes are filed online through the portal.

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"Estonia is, to date, the only nation where citizens can cast online ballots in every type of election from local to parliamentary. When Estonia held the world's first binding election using internet voting in 2005, a mere 2% of voters cast ballots online; in the 2011 parliamentary election, that number rose to nearly 25%." (Braverman and Kuntz, 2012).

Key enabling environment factors for the intervention

The government invested heavily in creating this electronic ID program (upfront investment of €50 million to €100 million). "To attract users, the government offered a 30% discount on public transportation to people who registered with the e-ID system. The number of e-ID card holders increased 213% in 12 months." (Braverman and Kuntz, 2012). There are also legal frameworks in place governing the digital ID. First, the Population Register Act creates the input for the ID (a personal identification code), and the Identity Documents Act governs the issue of the digital ID, or the e-ID, incorporating this PIC.

Key design elements and principles that led to successful outcomes

- Open platform: Any institution can use the infrastructure and it works as open source.
- Transparency: Citizens have the right to see their personal information and how it is used by the government by checking log files. "Every Estonian can review the full history of inquiries about him or her, including police-, banking-, and health-related inquiries. If a user does not recognize or approve of an inquiry, they can file a complaint with Estonia's Information Services Agency." (Braverman and Kuntz, 2012).
- Efficient: Data is collected only once by an institution, which reduces bureaucracy and redundancy.
- Multiple use cases: Citizens can use the ID to vote, pay taxes, access unemployment benefits, register property etc.

Estonia's E-identity program

Potential for scale/replicability

This program operates on a national scale and has greatly increased the number of services available on the e-portal. "A number of national governments—including those of Belgium, Germany, Italy, and the Netherlands, as well as a handful of Middle Eastern countries—have launched or are planning to launch e-ID card programs. None of them are as far along the path as Estonia. Other countries expanding their programs can take inspiration from how it overcame some foundational challenges." (Braverman and Kuntz, 2012).

Challenges encountered during the program

Estonia experienced foundational challenges when launching this ambitious program but was able to overcome them. For example, when the platform first launched, the services provided were extremely limited, so demand was not initially high. To build a user base quickly, the government provided incentives through subsidized transportation, which helped attract the initial user base. The government then scaled up the amount of services available once it had built an established user base.

Recommendations from the research

Estonia's program offers several lessons learned and recommendations for those wishing to build a digital ID ecosystem:

1. Build a user base quickly: Estonia succeeded in this by offering subsidized public transportation in exchange for registering in the system.
2. "Address privacy concerns: Estonia's residents can opt out of making their data accessible." (Braverman and Kuntz, 2012).
3. Scale up the amount of use cases of the e-ID.