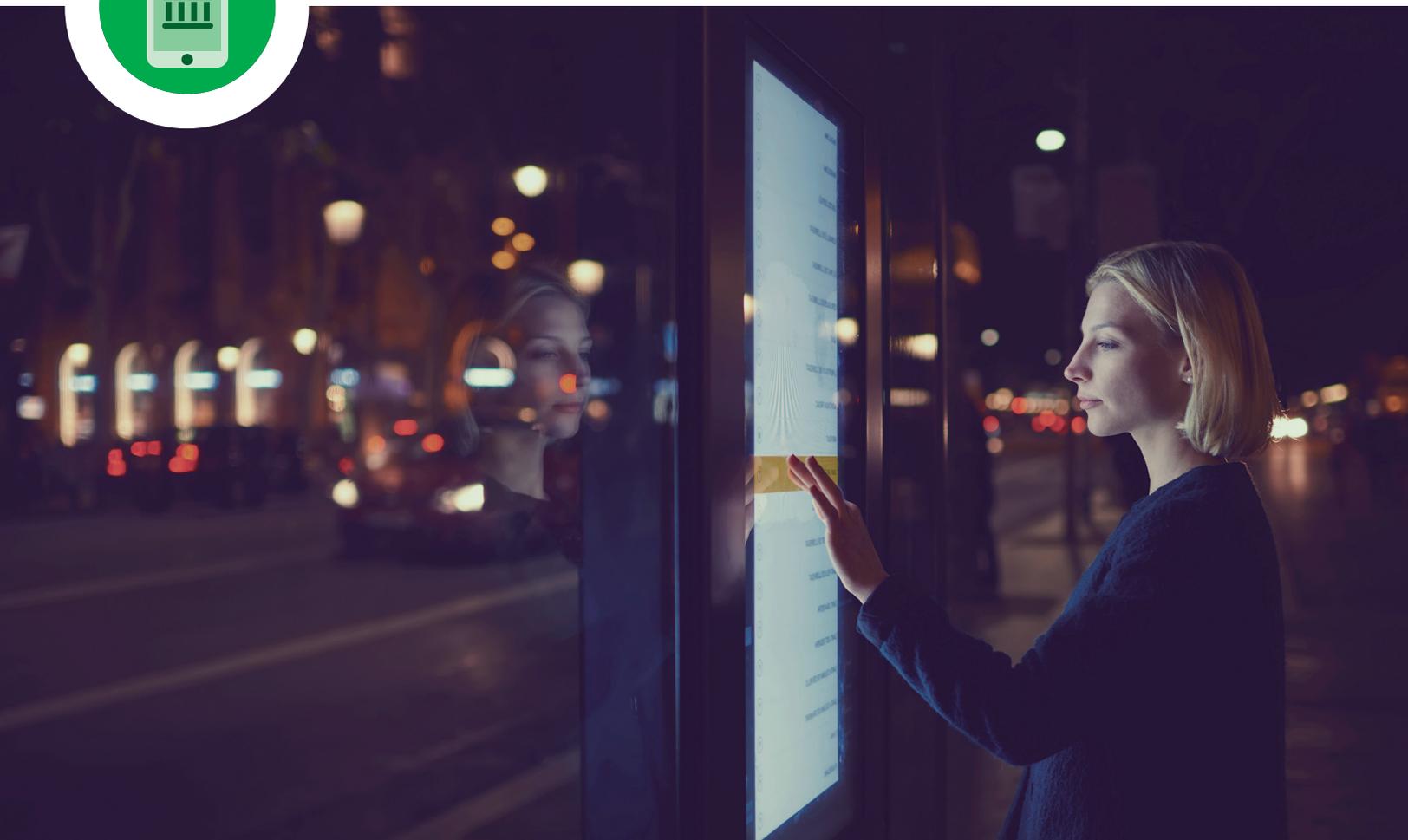


WHITE PAPER

Why build a digital government

E-GOVERNANCE

Governments globally are facing a huge challenge — exponentially, people are expecting interactions with the state to move from paper to online; citizens are also expecting governments to treat them as valued customers. Not many countries have mastered the transition from paper to a digital, seamless society successfully. Estonia is an exception. Being true digital governance trailblazers, Estonians can help other governments achieve the same.





For a country to succeed, it has to go digital

Millennials and Generation Z are taking over. Constituting half of the world's population, they stay in designer hostels when on business trips, scold the nine-to-five working arrangement and constantly search for meaning in their work. They also love paper notebooks, but not so much the paperwork they need to fill out in order to communicate with their governments.

Glued to their screens, they expect to **interact with service providers virtually**, from wherever they are. More and more, people are applying the same expectations to governments. Younger generations see governments as service providers, and they believe interaction with their governments should be as easy and smooth as buying a pair of headphones online.

And this does not apply only to younger generations. People of all age groups are increasingly accustomed to shopping with a click, ordering a taxi from an app or assuming they should be able to **interact with their governments online**. In Estonia, where people have been able to vote online in national elections since 2005, the oldest voters have been more than 100 years old.

For governments, keeping up with these new expectations is a challenge. It's a huge change in mindset for governments – how to make life easier for people so they'll be happier citizens and to also attract talent from other countries to relocate there?

PROOF IS IN THE PUDDING

Estonians build effective civil service globally



According to a recent study, Estonia has one of the most effective civil services in the world. The Institute for Government, a leading think tank working to make government more effective, published their first ever International Civil Service Effectiveness (InCiSE) Index in 2017.

Estonia is ranked 7th overall on the Index, but the small Baltic nation **rises to top position** when scores are adjusted for GDP per capita. The country ranks top in digital services and the tax administration indicator.

Many of the various e-services and solutions that have been successfully created and implemented in Estonia can be successfully exported to contribute to **building a seamless society** in other countries. Nortal has a long history

of assisting European countries in the field of e-governance and providing better services.

"All the work we've done in Estonia during the past 25 years has given us a **significant advantage in administration efficiency**," said **Rein Lang**, Head of Policy and Legislative Consulting at Nortal, who has formerly been Estonia's Minister for Justice and Minister for Cultural Affairs. "Estonians do everything online, from voting to filing taxes. They trust the system because it's safe and transparent, and it has saved money and cut the risk of corruption," Lang said.

The Index was published in 2017 and is the first of its kind, covering 31 countries across Europe, North America, South America, Asia and Australasia.



Digital government helps attract talent

In the context of skyrocketing numbers of mobile workers, competition between governments to attract the best people is also set to rise. Electronic identity and digital services are good ways a country can score points in this race.

Out of 3.5 billion people working around the world on a daily basis, 1.5 billion are mobile workers. Globalization will continue to drive growth in the number of mobile workers and, according to Strategy Analytics, those numbers will increase to 1.75 billion within three years. By 2022, more than **40% of the global workforce** will likely be mobile.

The success of governments in attracting the right people to stay longer than six months will depend on their willingness to re-engineer systems to deliver efficient and cost-effective services with the smallest possible administrative burden.

In a fast-changing environment, the flow of information, ideas and knowledge across the globe has a profound impact on the way the world functions.

Governments worldwide are faced with the challenge of this transformation and the need to reinvent public systems to **deliver efficient and cost-effective services**, intel and knowledge through information and communication technologies.

Nobody wants to queue for hours to file their taxes, to create a company or to name their baby. People want easy, seamless processes when it comes to communicating with the state. They'll want to live in countries where their government treats them like a valued client.

Electronic ID, a cornerstone of digital government

A key enabler in this transformation is the **implementation of electronic identities** – an essential component of infrastructure upon which the future of e-government and private e-services will be built. A unique electronic ID with full capacity to make legally binding actions online – anywhere, anytime – provides a huge advantage for people, companies and governments alike.

In Estonia, people give approximately **300,000 digital signatures** every day. They use their digital identities to utilize government services such as getting information about how much taxes they've paid, looking up who their family doctor is or seeing whether someone has accessed their information online. They also use their electronic IDs to vote.

Implementation of electronic identities and digital signatures is a complex task but a timely one. By 2021, **92% of ID cards** will have functions of electronic identity. Nortal has played a key

role in the development and provision of the eID scheme used in Estonia – which has **1.3 million active users** and is based on chip-cards (ID cards) and SIM-based Mobile-IDs.

"I gave my e-vote," tweeted **Toomas Hendrik Ilves**, the president of Estonia at the time tweeted during elections in 2014. "This is not only comfortable, but primarily a vote of confidence to one of the best IT-systems in the world, vote of confidence to the Estonian state."

We have helped build and modify already existing eID solutions and integrate them into services, making eID a natural part of the existing e-government infrastructure. Nortal supports the provision of all aspects necessary for a successful implementation of Electronic Identity – whether it is eID infrastructure, trust services, digital signatures, authentication solutions, establishing policy, supporting legal environment or nationwide e-governance.

Digitalization's economic impact is huge

There's no doubt about it, governments have to go digital. Not only to meet the new demands from their population, but also to make their economies more competitive. According to McKinsey & Co, \$1 trillion could be freed up annually worldwide if full potential of government digitalization is captured. The Estonian government estimates that digital signatures alone save the country the equivalent of 2% of GDP annually. Applying that figure to, for example, Germany's €3.26 trillion GDP, results in forgone savings exceeding €65 billion every year.

Governments cannot afford to postpone digitalization any further. We at Nortal know it well — we've built more than one third of Estonia's e-government solutions, and we've exported Estonian knowhow to different countries in Europe, the Middle

East and Africa. We know how difficult this change can be, but we also know how much value this creates. Thanks to us, the Estonian Ministry for Finance's administrative costs are merely two cents for every euro granted through European Structural and Investment Funds. Because of this, Estonia has one of the lowest administration cost ratios for managing structural and investment funds compared to other EU member states.



CASE STUDY

Better services for the unemployed with fewer costs for the government

In 2009, the Estonian Unemployment Insurance Fund, which hitherto only managed insurance funds and paid insurance benefits, was tasked with providing the entire range of employment services to the unemployed. At the time of the deepest economic crisis in history, with more

than **100,000 unemployed people** in a country of 1.3 million, the work seemed positively Herculean.

Compounding the problem were **outdated business processes** that, if left unchanged, would have rendered even a new information system unusable; inconsistent procedures across state employment offices, which prevented fair and equal treatment; poor data quality that made the Fund an easy target for fraud; frequent human errors in deciding the eligibility of applicants caused by not understanding the finer legal points of applicable laws, and much more.

With 15% of the entire Estonian workforce lining up for unemployment benefits and services, a crisis seemed imminent. Yet what could have been a disaster became an opportunity for Nortal to design and develop a solution that, in one fell swoop, gave the Fund the **capability to manage the enormous workload** and offer even more personalized services, all without increasing the staff.

Employment Information System (EMPIS) took a leap forward from the old, paper-centric system that relied on manual work and the ability to navigate dense legislation. Today, the system provides back-office automation that pre-fills forms, creates reminders and notifications, follows complex acts of law to reach the correct decision in each unique case, and cross-checks all data entered into the system, thus taking a large burden off of the Fund's specialists. End users — the unemployed — are seeing a system that helps them with career and training choices and guarantees that various unemployment subsidies are always paid on time.

By overhauling the customer's business processes and building a bespoke information system to streamline the procedures, Nortal has enabled the Fund to **significantly improve the speed of, and capability for, service delivery** while supporting end users every step of the way. The result is a decrease in client's operating costs and a boost to their image as a trustworthy partner.



INTERVIEW

Former minister: Communication with government doesn't have to take days

When Estonia restored its independence in 1992, the country had a lot of catching up to do with the rest of the world. Building everything from scratch had its advantages, and the country was forced to go digital sooner than the others.

One of the people in the forefront of state-building was **Rein Lang**, now Head of Policy and Legislative Consulting at Nortal. In a short interview, Lang shares some insights why governments cannot afford to not move from paper online.

Why is it important to digitize governments and offer e-services to people?

For ages, communication between citizens and government officials has been face-to-face. Often, this is a long process that takes days, weeks or even several months. People today simply don't have time for this. They want their problems solved now, not in three months. Governments have to catch up with the world. In Estonia, **e-government works for their citizens 24/7**. Equally important: It's impossible to bribe a computer.

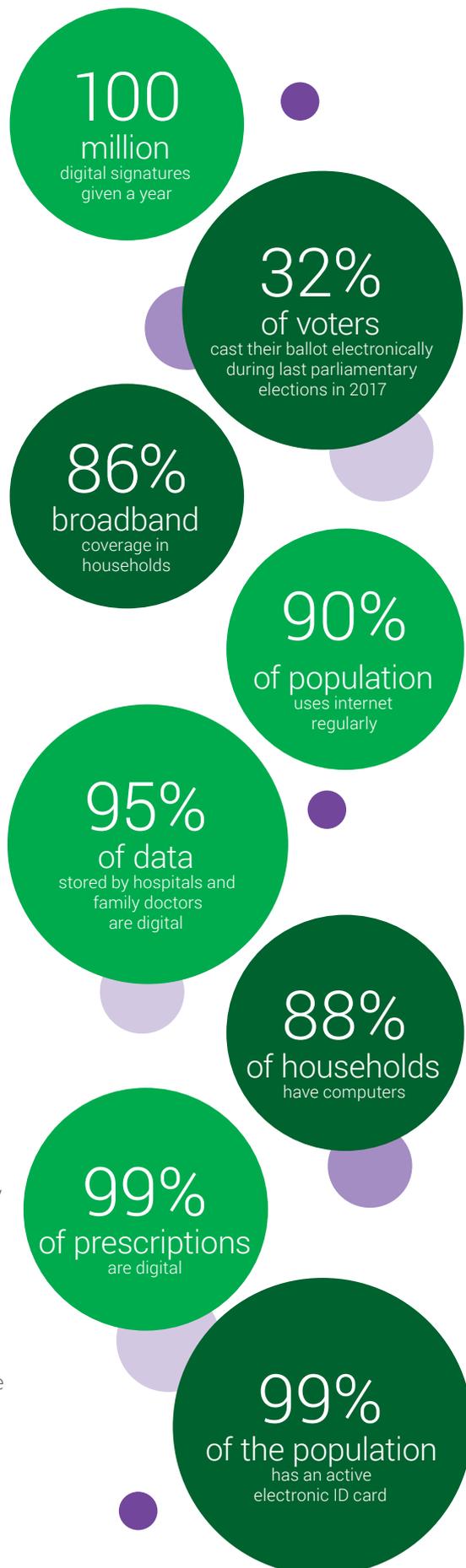
You have been a Member of the Parliament, Minister of Justice and Minister of Culture in Estonia during this very transformational era. What has been the most significant impact of digitizing a government?

Estonia has been lucky to strike a balance between the needs and possibilities of a small nation to maintain its own statehood. I strongly believe that making technology work for us has **freed enormous resources** for education and social welfare.

When you think about different government services Estonians use online, what has changed your life the most?

It's very difficult for me to put any particular service on the podium. For me, the whole Estonian e-government environment is very important, and I'm not the only one. You can really feel the importance of e-services when there's a problem with the digital authentication system. Even if the system is out for less than an hour, all the news portals and broadcasters report on it as breaking news. Which is understandable, I suppose, as Estonians give roughly 300,000 digital signatures in a day.

ESTONIA IN NUMBERS



BACKSTORY

Why Estonia went digital?

Estonia started building a digital society after it restored its independence in 1991. The country's economy collapsed, about every third adult worked in agriculture, more than 50% of the industry was military-oriented. There was no decent banking system nor a national currency. Modern telecommunication infrastructure was missing, and the average salary was less than ten euros a month.

As President of Estonia, Kersti Kaljulaid has said that the crucial question was how to overcome the legacy left by the Soviet occupation. "Our response was — we need to build up a modern, efficient and democratic state," Kaljulaid said in a speech in 2017. Radical reforms were carried out in all walks of life. "The forward looking idea was to harness the innovative potential of Information and Communication technology (ICT). Neither we nor anyone else knew 20 years ago, how important Internet and ICT would become and what role it would play in the organization of state and society."

Although the choice to turn to technology was not an easy one, Estonia's gamble paid off. "In hindsight we can agree that the 'Tigerleap' program, as it was called, gave the entire Estonian

society the momentum to make a digital leap into the future," Kaljulaid said. "Schoolchildren, having become computer literate, brought their newly acquired skills home and also 'infected' their parents (and grandparents) with the digital 'bug.' Priorities changed for families — instead of a new refrigerator, it was often decided to rather invest into a computer and an internet connection."

Today, 99% of government services in Estonia are digital. 88% of households have computers at home; almost all of them are connected to broadband. Almost everyone has an active, electronic ID-card in their pocket that enables Estonians to give more than 100 million digital, legally binding signatures a year.



CASE STUDY

Seamless e-services make people happier

Mark (32) is an accountant using MobileID in Estonia every day — he has to file taxes for his clients, make bank transfers and use several government databases frequently. Thanks to e-services, he can take on more clients since there is **very little red tape**.

Last year, a chunk of his working hours were freed up after the Estonian Tax and Customs Board launched a solution enabling businesses to pay taxes without any contact with the actual Tax Board. Mark now simply has to categorize an online bank transfer as salary and the rest will be taken care of.

Mark also recently became a father. He expected the bureaucracy to be a nightmare. "I thought

I'd have to take time off from work to go to a government office with my wife and newborn baby and queue there for hours," he says. "But I was surprised to find out that **I could just use my eID** to log into a government information system to register the name we've chosen for our baby girl."

Both Mark and his wife signed the application online using their mobile phones to name their daughter Diana. "**It was so smooth!** It took us about the same time it does to file my income tax claim — less than five minutes," Mark says. "I've lived in other countries before and bureaucracy has been a nightmare. I'm so happy that's not the case everywhere."



COMMENT

Germany's eID puzzle? Estonia has already cracked it.



Hendrik Lume
Senior Consultant at Nortal

A problem with authentication is standing in the way of Germany's drive to put public services online. For answers, the country should look to Estonia.

As one of its last legislative accomplishments, Germany's previous grand coalition government passed a law to make all public services available online by the end of 2022. This bold project comes with a **serious roadblock**: The country lacks a widely adopted method for online authentication, a way for citizens to prove their identities in an electronic environment. Without one, e-services can't operate.

What's the way out? For clues, **Germany can look to Estonia**, a country that not only solved the authentication riddle long ago but also used **electronic ID to lay the groundwork to digitize** — not only its public services but also its whole society.

Back in the early 2000s, when Estonia was in a similar authentication bind, the government hit on a novel idea: Partnering with the banking sector. The country's banks had already **designed the same high trust level** into their online banking systems that the government needed for public e-services, so a deal was struck whereby bank logins could authenticate users of government e-services.

Eventually this partnership developed into a wider **public-private authentication environment**, with banks, telecoms, public utilities and state agencies all sharing authentication infrastructure.

Opening the government's authentication process to banks and telecoms might also work for Germany, leading to easier adoption of coming e-services in both public and private sectors. A number of German banks have recently become closely involved with authentication solutions such as Yes and Verimi. The German telcos are said to be considering providing an authentication service as well, so some of the foundations are already there.

The Estonian government estimates that digital signatures alone save the country the equivalent of **2% of GDP** annually. Applying that figure to Germany's €3.26 trillion GDP results in forgone savings exceeding €65 billion every year. Even if Germany's gain were far more modest, the **boost to the economy** and the resulting tax revenue increase would more than pay for any investment in an Estonian-style authentication and e-signature mechanism.

SOME PERKS OF DIGITAL SOCIETY



No need to carry your driver's license with you, any ID will do.



Filing annual tax report takes less than three minutes as the tax administration already has your complete

income information and the form comes prefilled. People simply need to digitally sign the report at the most convenient time of their day.



Voting in elections takes a few minutes, online. People can vote in their pajamas at 3 AM if they feel like it.

Or from Rio de Janeiro, if they happen to be out of country during elections.



Prescription medicine can be a quick phone call away — **99% of prescriptions are digital**, and you can pick up

your medicine at a random pharmacy, you simply need your ID card.



Access to electronic patient records means you can show up at a doctor's office and give them rights to

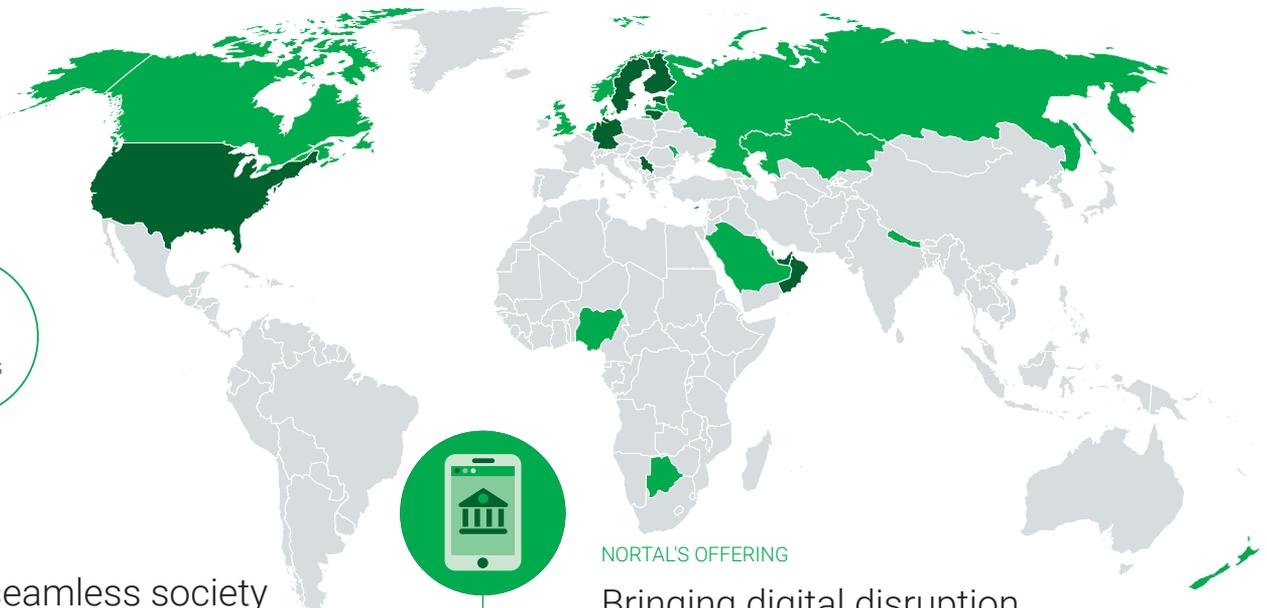
view your securely stored-online medical history.



10
BRANCHES

150+
ONGOING
PROJECTS

PRESENCE IN
20+
COUNTRIES



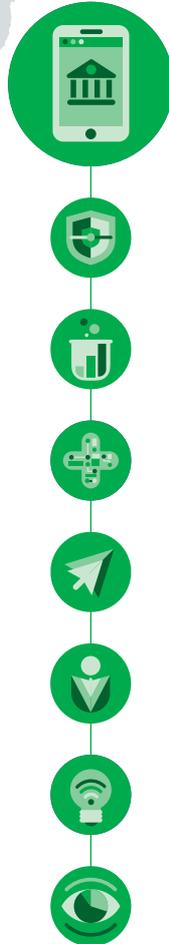
ABOUT US

Building a seamless society globally

Founded in 2000 in Estonia, Nortal has been a partner and vendor for some of the most efficient tax organizations in the world.

By matching efficient policy with leading technology we ensure all entrepreneurs have equal conditions; this guarantees the accrual of taxes as estimated. It also provides governments with the information they need to steer economic processes, and improve the welfare of the entire nation.

Nortal's success and impact in revenue collection and tax management is reinforced by experience in the development of tax systems and tax authorities in Europe for the past 25 years. We have managed to successfully export our know-how and expertise in building transparent tax systems to countries in the Gulf and Africa.



NORTAL'S OFFERING

Bringing digital disruption to governments

Nortal has been digitizing governments for more than a decade. We are responsible for more than one third of the Estonian e-government disruption and have worked with various government projects.

At the moment, Nortal is working on several large-scale projects for the Estonian Tax and Customs Board, Ministry of Social Affairs, Ministry of Finance and Unemployment Insurance Fund. Our clients include tax administrations in Finland, Botswana and Oman.

Nortal is one of the main developers of Estonian ID card software and has been closely involved with Smart-ID. Smart-ID is a mobile app that ticks all the boxes for users: it's free, it's secure, it's simple to use, it works anywhere, and it doesn't require users to change their SIM cards.

Get in touch with our expert

Hendrik Lume, senior consultant at Nortal, has spent most of the past decade advising organizations on how to stay ahead of tech disruption and thrive in tomorrow's economy. Relying on his background in both the business and public policy arenas, he is laser-focused on bringing Estonia's seamless digital society to Germany.



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Learn more about Nortal at
<https://nortal.com/>