

TALLINN | DIGITAL INNOVATION

Becoming a Global Smart City Role Model

Over the last 30 years, the Estonian city of Tallinn has shed its former Soviet-era lifestyle and embraced a largely digital one. It has done this thanks to visionary leaders who put digital transformation and its people at the heart of their governance.



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Estonia was forced to reinvent itself after regaining independence in 1991.
Image: Hans Birger Nilsen / Flickr



You're either slow and get eaten or you become very fast and develop the economy and digital society—Estonia opted for the latter.



The Challenge

When Estonia regained its independence after leaving the Soviet Union in 1991, the nation was forced to quickly reinvent itself. The small European country of only 1.3 million citizens lagged behind its more technologically advanced neighbours, and also had to build its public services from the ground up. The government also understood the need for the country to stand out with a competitive edge over others. Former Prime Minister of Estonia Taavi Rõivas once said: "You're

either slow and get eaten or you become very fast and develop the economy and the digital society—Estonia opted for the latter."

Digital transformation was quickly recognised as the key to unleashing Estonia's potential in achieving economic progress and a vibrant society in an affordable manner. As the capital of Estonia, Tallinn led the way in digital development for the rest of the nation.

|| Citizens are at the core of Tallinn's digitalisation journey. ||

The Solution

Citizens are at the core of Tallinn's digitalisation journey. Recognising that its citizens must be willing and ready to use digital solutions, Tallinn strategically identified three key pillars of accessibility, user-friendliness and interoperability in its smart city transformation.

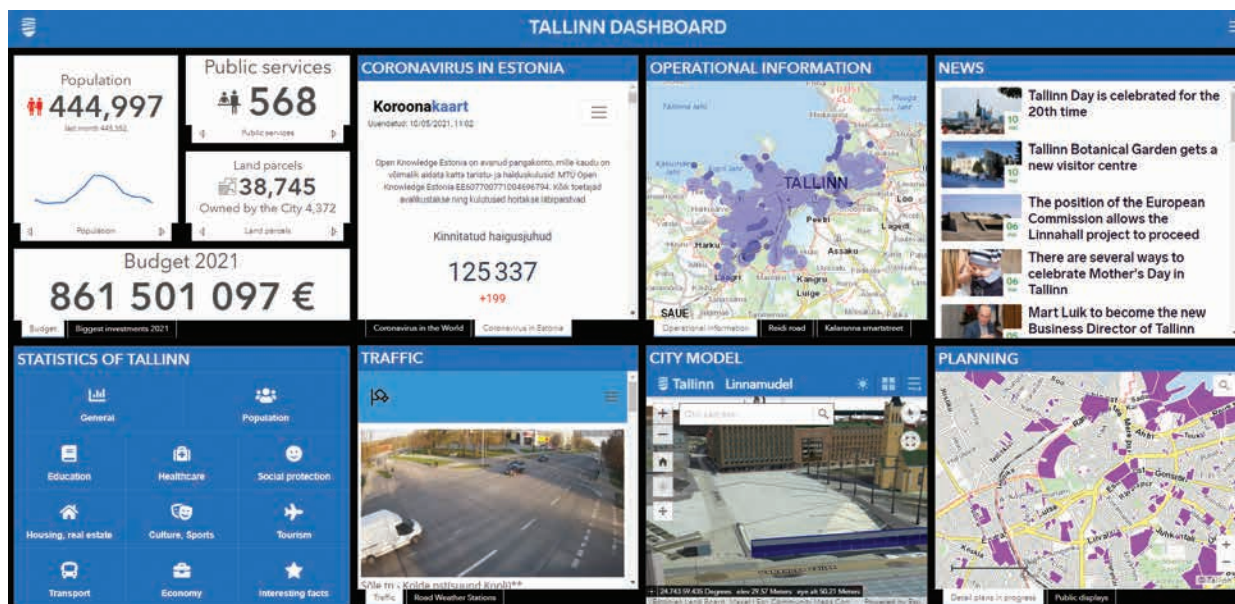
Firstly, digital infrastructure was rolled out to all schools, government administrations and households across the city, and Wi-Fi hotspots were set up across all public spaces. Education complemented the development of digital infrastructure to ensure citizens' readiness to be a part of the digital transformation. For instance, students as young as seven were

introduced to digital culture through training programmes to teach them how code and algorithms work. Public servants were also trained in design thinking to equip them with skills in designing content that meets users' needs. Recognised as a fundamental enabler of digital transition, accessibility to the Internet was declared a human right in Estonia in 2001.

The heavy investment in digital infrastructure laid the foundation for digitalising public services such as municipal and healthcare services. User-friendliness was emphasised to smoothen any inertia in adopting digital technologies.



|| Digital infrastructure is highly accessible throughout Tallinn, including schools, where students are exposed to the applications of technologies at a young age.
Image: Arno Mikkor / Wikimedia Commons



The Tallinn Dashboard offers citizens open access to the city's data.
Image: Tallinn Dashboard. Accessed 14 May 2021.

For instance, the Estonian digital identity card (eID), a mandatory identity document for Estonians, offers citizens convenience as it can be used to authenticate and sign almost all kinds of transactions and procedures, ranging from tax filing, accessing public healthcare and transportation.

To further ease citizens' access to digital services across different organisations, the Tallinn administration abides by the "once-only principle" to allow users to submit their information only once. This required information to be shared between different organisations efficiently yet securely. With this in mind, the X-Road data exchange system

was launched in 2001. It connects various organisations' databases to seamlessly share citizens' data across public sector institutions, organisations and enterprises securely, without compromising privacy. Such data interoperability allows the city to integrate their service delivery to better serve its people. Citizens are also empowered through strong privacy and data management: citizens own their data and can restrict authorities' access to it.

Open data and transparency also engender trust and create opportunities for citizens to participate in planning. Tallinn has made municipal data open and accessible to citizens via

digital tools such as the Tallinn Dashboard. The dashboard collects live data and offers information on a wide range of subjects, including traffic livestreams, city statistics, official announcements such as COVID-19 updates and 3D models of the city to support planning. Such openness in data gives both the city government and citizens deeper insights into problems and opportunities to work together to create better solutions.



Located within a former industrial complex, Tallinn's Telliskivi Creative City is Estonia's largest creative centre and is home to a thriving ecosystem of creative businesses, start-ups, shops and restaurants.
Image: Relkmsaiia / Wikimedia Commons

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Tallinn is a living testbed for smart city solutions such as driverless buses.
Image: Holo

Tallinn's vibrant digital culture and lifestyle have made it a living testbed for smart city innovations.

The Outcome

With these policies, systems and trust in place, Tallinn was able to build a digital system that served and protected its citizens well, and model a digital lifestyle for the rest of Estonia. In less than two decades, more than 99% of Estonia's residents now use an e-ID to access government services.

With a well-established digital infrastructure and a community that has embraced a digital lifestyle, Estonia was able to remain resilient during the COVID-19 pandemic. More than 99% of its government services remained available online despite the country's lockdown, and citizens were also able to apply for social benefits easily with their e-ID. And with more than 97% of schools equipped with digital study resources, schools were able to seamlessly move online. The well-established digital infrastructure and culture also helped Tallinn to adapt quickly to rapidly changing circumstances. For instance, the Tallinn City Council quickly developed e-sessions and voting systems for Council meetings to continue seamlessly during the pandemic.

Tallinn's successful digital transformation and widespread digital culture has also cemented

its status as a global smart city role model and innovation hotspot. In 2020, the city won the UNESCO Netexplo Smart Cities Award for digital transformation and was named Europe's 12th largest start-up hub despite not being among the 50 largest cities in Europe. The city's vibrant digital culture and lifestyle have made it a living testbed for smart city innovations, and it is the birthplace of many cutting-edge technology businesses like Skype and Starship Technologies.

In recent years, Tallinn's digital transformation approach has also been shared beyond its borders and adopted by the European Union to effect greater impacts regionally. Digital technology was never the only answer to Tallinn's—and by extension, Estonia's—digital transformation. It is the foresight, trust and respect for its people's privacy that formed the basis of its smart city governance and may prove to be a lesson for other cities seeking to build their own digital societies. 🗨️