



ALPHA



White Paper

Northern light: the emergence of e-Estonia

Estonia is the tiny country which became a 21st-century technology superpower. Find out how this former Soviet Republic transformed itself into the most digitally advanced society in the world (and how it's driving innovation in the localization sector).

If you'd struggle to pinpoint Estonia quickly on a map, don't feel too bad. This is, after all, a country with a smaller population than Munich located on the fringes of northern Europe that has only existed in its modern form for less than three decades.

But you'd have little trouble recognizing some of the technology that has originated from its Baltic shores. Because if you've made an internet voice call at some point in the last 15 years, the chances are you've probably used a world-famous app driven by Estonian innovation.

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Skyper-active

The story of Estonia's most famous export goes something like this. In the early 2000s, two Scandinavian hi-tech entrepreneurs (Niklas Zennström, from Sweden, and Janus Friis, from Denmark) knew that it should be possible to commercialize a technology that harnessed the power of the internet to lower the cost of voice calls.

But, so far, they hadn't quite worked out how. So they looked to their neighbours across the Baltic Sea for a technological solution.

Based in the capital Tallinn, it was a team of Estonian software developers who built the peer-to-peer backend for the app that would revolutionize modern voice telephony, delivering free calls over any distance to anyone with an internet connection.

The company, which was bought by eBay in 2005 and later by Microsoft in 2011 for \$8.5bn, still has 44% of its workforce and most of its development team based in Estonia. It's no wonder locals are rather proud of their most well-known export.

Former Estonian President Toomas Hendrik Ilves (2006-2016) even used the massive brand name recognition as a calling card.

"Not many know where Estonia is, but everyone knows Skype," he commented. "So now I say I'm the president of the country where Skype is."

A land of (21st-century) unicorns

And Skype is far from Estonia's only hi-tech success story.

To appreciate the scale of the country's technological achievements, it's worth bearing in mind the words of the country's current leader.

In June 2018, President Kersti Kaljulaid tweeted: "Estonia is 1.3 million people and we have 4 unicorns".

Although it is home to bears, wolves and two UNESCO World Heritage sites, there is no evidence that any mythical single-horned beasts live within Estonia's borders.

Kaljulaid was in fact referring to the modern definition of a "unicorn": a private company with a market valuation of \$1bn or more.

Alongside Skype, the other homegrown Estonian super start-ups include gambling software firm Playtech, money transfer service TransferWise and Bolt (formerly Taxify), a ride-hailing taxi app now active in 30 countries.

[According to CNBC](#), Estonia now has the largest concentration of \$1bn+ private companies per capita in the world. To put this in context, in 2020 it has more than Spain and Italy combined.

So how did this tiny country, which only gained independence from the Soviet Union in 1991, become such a technological powerhouse? The answer is in many ways a simple one: a clear hi-tech vision backed by steady long-term investment. As a nascent nation in the early 1990s, the country's new leaders saw the huge potential of the emerging digital economy and decided to build an entire society around it.

It even had a name: e-Estonia.

Baltic blueprint

The critical first step in Estonia's digital transformation began in 1994 with the creation of what appears at first glance to be a document that firmly belongs in the forgotten hinterland of bureaucratic blandness.

However, despite its uninspiring title, the Principles of Estonian Information Policy would lay the foundation for what would become the world's most remarkable story of digital transformation.

It detailed the key role that IT would play in transitioning Estonia from a centralized communist model into a modern democratic society that could compete with and thrive in Western economic markets.

Crucially, it earmarked 1% of GDP as stable state funding for the development of IT infrastructure. And since the investment began, Estonia has pioneered a transformation that scarcely seems credible within its short history.

An early priority was education in science and technology. With the initiation of the Tiger Leap Foundation in 1996, Estonia pledged to make computer access available to all and by 2000 every classroom was connected to the internet.

In a country where [children are taught to code from the age of seven](#), there is a homegrown supply of innovative programmers complemented by a steady flow of talent from around the world that is drawn to this vibrant technology hub.

The digital dividend

With a highly technologically literate population, Estonia has forged a new identity by trailblazing a path strewn with digital firsts.

In 2001, the same year that the country declared access to the internet as a human right (a decade before a UN Special Report recommended the same), Estonia introduced X-Road: a nationwide system that allows public and private databases to link up securely and has been described on a Harvard University blog as ["the server that drives the whole of e-Estonia"](#).

With X-Road in place, Estonia rolled out an e-id and digital signature in 2002, paving the way for the rapid digitalization of the country's public services. The transformation that ensued has been analyzed and admired by [academics](#), policymakers and global media outlets such as the *Financial Times*, the *New York Times* and the *Wall Street Journal*.

Now, 99% of Estonia's public services are available online, creating a digital way of life that goes way beyond simply filing a tax return or ordering a repeat prescription online.

It's fair to say that e-Estonia permeates into every aspect of society.

Its [e-ambulance](#) technology, for example, detects and positions the caller within 30-seconds and directs emergency services to the scene. Once there, if necessary, medical teams can use the patient's ID code to access time-critical information such as blood type, medications or allergies. For doctors and paramedics making on-the-spot decisions, it is literally a lifesaver.

Less dramatically, but with broader long-term benefits, e-Estonia frees up billions of euros every year for potential reinvestment. Digital automation across Estonia's public services not only improves efficiency but is also estimated to save the country [2% of its annual economic output and the workload of more than 1,400 people](#).

e-residents welcome

It's no surprise that the country continues to innovate in its approach to digital infrastructure and to look beyond its narrow borders to compete on the global stage.

In 2014, it became the first country to offer an [e-residency scheme](#) which allows "digital nomads" from any country in the world to register an online business in Estonia and gain access to EU markets (as a [post-Brexit advertising campaign on the London Underground](#) pointed out to British firms and freelancers).

To date, more than [60,000 people working from 160+ countries](#) have become virtual residents of the country and, [in a study by Deloitte](#), it is estimated that the programme could bring a total of €31 million in net income and a further €194 million in indirect socio-economic benefits by 2021.

A localization technology hotspot

In a country which prides itself in its outward-looking perspective, Estonia is also home to some of the leading lights in global localization and language-services technology.

Estonia start-up AlphaBlues, for example, has developed a chatbot which can talk about Estonia with people in any language. The system, which was developed for the virtual Expo 2020 Dubai, uses artificial intelligence and natural language processing to understand what people are saying and provide useful responses to both spoken and written queries.

The multilingual chatbot is based on the company's Conversational AI platform, which is already being used by banks such as Monese and LHV to automate responses to customer queries. In fact, AlphaBlues chatbots are already conducting 250,000 conversations per month with humans – saving clients money and providing round-the-clock service to their customers.

With the development of its multilingual capability, AlphaBlues' technology has the potential to connect companies with large number of customers to global audiences in ways that mirror their actual lifestyles, as [founder and CEO Indrek Vainu explains](#):

"People are living their lives on Messenger, WhatsApp. 95% of what you use your phone for is some sort of chat," he said. "But most companies are still in the non-messaging world and want their customers to call or email them. We help bring them where the actual 'party' is."

The Alpha angle

And there is another big player working in Estonia that features the first letter of the Greek alphabet in its moniker.

Following an acquisition in 2010, global languages service provider Alpha CRC has built a significant presence in what's been called Europe's Silicon Valley for the last decade.

With more than 70 employees based across two sites in the capital Tallinn and the town of Jõhvi just 50km from the Russian Border, it has grown a multidisciplinary team which comprises specialists in functional quality assurance (FQA), software engineering and development, desktop publishing (DTP), project management and translation.

Dmitri Kanarjov, Alpha's Head of Operations in Estonia, sees a clear benefit to the company's presence in this Baltic digital hotspot. "Because there are a number of really good technology-focused universities and schools here in Estonia, there is a really strong talent pool here that makes finding the right people easier," he says. "Also, the average salary is lower than the EU average, so that makes us a very cost-effective for Alpha and for our clients."

Where next for e-Estonia?

Of course, no economic transformation is problem free and Estonia is no exception. Salaries in IT and technology have continued to rise, leading to [consistently higher inflation levels than the EU average over the last 25 years](#). For those working in other industry sectors, the cost of living has sometimes become more challenging as a direct result of Estonia's technological success.

Nevertheless, as we look forward to a post-pandemic world in which our reliance on digital infrastructure has become even more integral to the 21st-century way of life, the future for e-Estonia is optimistic.

After a predicted reduction in GDP of 4.7% in 2020 as a result of COVID-19's global impact, the [OECD forecasts](#) that it will bounce back with growth of 3.4% and 3.3% in 2021 and 2022 respectively.

In particular, the steady shift in technology outsourcing models from offshoring to nearshoring is likely to boost Estonia's economic prospects.

Mindful of trade wars, regional instability and the impact of cultural differences on service quality, many big businesses are moving away from outsourcing to more geographically remote providers (offshoring) to using service providers closer to their core markets and/or operations (nearshoring).

While potentially not offering the same degree of cost benefits as offshoring, nearshoring still provides a cheaper technology outsourcing solution than using homegrown services with the advantages of greater synergies in working styles, communication protocols and timezones.

And Estonia, with its vibrant technology sector, is an obvious nearshoring choice for many European businesses.

Not quite 100% digital (but almost)

If you are wondering if there are any limits to Estonia's brave new digital world, [former President Toomas Henrik Ilves remarked on a few](#).

He once pointed out that there are actually three things you can't do online in Estonia: get married, get divorced, and buy or rent a property.

But, for everything else in the digital universe, Estonia is probably the best place to be.

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