Brief

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Creating personalised digital-first public services for all

Governments around the world are navigating a transformative shift from traditional in-person service models to models that incorporate digital solutions alongside their existing services. This evolution reflects the rapid development of digital tools and the growing demand from citizens for services that are more accessible, efficient, and responsive to individual needs. While many governments around the world are now adopting hybrid models—combining both in-person and digital services—Estonia is often cited as a leader in the integration of digital technologies into governance. Estonia's e-government system, which includes initiatives like digital signatures, online voting, and the e-Residency program, serves as a model for how digital solutions can be effectively implemented to complement and enhance traditional government services.

Revolutionising public services: technology meets citizen needs

Public services are vital to governance, providing citizens with essential resources like healthcare, education, and legal systems. Traditionally, these were offered through physical offices, requiring in-person visits, paperwork, and navigating bureaucracy—often slow and inaccessible for rural or underserved areas. The push for efficiency and accessibility drove governments to adopt digital tools, starting with basic digitisation in the late 20th century. Over time, these efforts evolved into integrated digital services, enhancing efficiency, accessibility, and citizen experience.

Also in the late 20th century, governments worldwide began to explore digital technology to improve public services. Initially, these efforts involved basic digitisation—such as converting paper records to electronic formats—but the integration of technology into service delivery gradually became more sophisticated. For instance, in the 1980s, the United States introduced systems like ARPANET and early e-filing tools for taxes, laying the groundwork for future digital initiatives. In the United Kingdom, the Government Digital Service (GDS) was established in 2011 to centralise and simplify online interactions, a model that many countries have since adopted.

According to a 2022 report by the United Nations' E-Government Development Index (EGDI), over 90% of countries now provide some form of e-government services. However, these systems vary widely in scope and quality. For example, Denmark, Finland, and South Korea consistently rank among the top nations for their highly integrated and user-friendly systems, while many developing countries still face challenges in infrastructure and accessibility. The EGDI underscores a significant trend: governments are not entirely digital-first but are

increasingly using digital tools to complement traditional methods, creating hybrid systems.

A noteworthy example is Denmark's Borger.dk, a central digital platform that allows citizens to access services ranging from tax filing to healthcare appointments. Despite its advanced digital offerings, Denmark ensures citizens who lack digital literacy can still access services through physical support centres. This dual approach highlights the importance of inclusivity in public service delivery, even as technology advances.

Another example is India's Aadhaar programme, the world's largest biometric identification system. Introduced in 2009, Aadhaar has assigned unique ID numbers to over 1.3 billion citizens, enabling streamlined access to subsidies, banking, and welfare services. While its scale is unparalleled, the programme has also faced criticism over privacy concerns, reflecting the challenges governments face in balancing efficiency and ethics.

Overcoming barriers in digital governance

A 2021 World Bank study found that investing in digital governance can reduce administrative costs by up to 25%. The OECD Digital Government Index highlights the importance of citizen-centric design, interoperability, and data-driven policies for successful digital transformation but warns of challenges like digital inclusion, with millions lacking internet access or skills.

As of 2023, only 67% of the global population uses the internet, according to ITU data, highlighting a significant accessibility gap. Rwanda's Irembo platform demonstrates how even low-income nations can innovate to serve underserved populations.

Challenges remain, including cybersecurity risks, outdated infrastructure, and resistance to change. The 2017 WannaCry ransomware attack exposed vulnerabilities in digital systems, prompting countries like Estonia to adopt advanced cybersecurity measures like blockchain. Additionally, digital services risk excluding vulnerable groups; a 2022 Pew survey found 25% of Americans over 65 feel uncomfortable with online government tools. Hybrid systems combining digital and traditional methods are key to ensuring inclusivity.

Towards personalised public services

As governments continue to integrate digital tools into public service delivery, the concept of a personalised state is emerging as the next frontier. A personalised state tailors services to individual needs, leveraging data to provide proactive support. For example, instead of requiring citizens to apply for benefits, a personalised state would identify eligible individuals and deliver assistance automatically.

This approach requires robust data governance to ensure privacy and security. Research by the European Commission's Digital Economy and Society Index (DESI) 2023 shows that trust is a critical factor in the adoption of digital services. Countries that prioritise transparency and citizen engagement are more likely to succeed in building personalised systems.

Estonia's vision of a 'once-only principle', where citizens provide their information to the government just once, exemplifies this idea. The data is then securely reused across multiple services, eliminating redundancies and simplifying processes. As Estonia continues to refine its digital public service model, the next challenge lies in moving from a digitised government to a personalised state. This transformation is not simply about offering more online services but about making those services more adaptive and tailored to the needs of individual citizens. In a personalised state, digital services are not one-size-fits-all but are designed to dynamically adjust based on a citizen's preferences, needs, and life circumstances.

Personalisation in this context can offer enormous opportunities for improving citizen engagement and trust. Artificial intelligence (AI) and machine learning algorithms could analyse vast amounts of citizen data to provide proactive services—for example, offering health advice based on an individual's health records or sending reminders about due payments. Such services would not only reduce the need for citizens to engage with the government but would also make public services more relevant and responsive. However, this level of personalisation also brings risks that need careful consideration.

One of the most significant challenges of implementing personalised public services is balancing the benefits of proactive service delivery with the need for citizen privacy. While digital tools can enable governments to deliver services more efficiently and to anticipate needs, the line between personal and private information becomes blurred. When is it appropriate for a government to act on a citizen's behalf? And when does this veer into overreach or even manipulation? Proactive service delivery could be seen as an intrusion if citizens feel their privacy is compromised or if they believe that the state is too involved in their personal decisions.

Governments will need to develop clear boundaries and transparency in how personal data is used. Citizens must understand what information is collected, why it's needed, and how it's protected. Maintaining citizen trust is paramount, as any breach of trust could erode the effectiveness of the personalised state. This ties into a broader question about data privacy and security: How can governments ensure that citizens' information is safeguarded while still using that data to personalise services?

Another consideration is the digital divide. Not all citizens have equal access to digital services, whether due to lack of internet access, low digital literacy, or socio-economic challenges. While many younger generations expect digital-first, tailored services from the state, the same may not be true for older or marginalised groups. How can governments ensure that their personalised services are truly inclusive and do not inadvertently exclude vulnerable populations?

Life events and public services

Public services play a crucial role in assisting individuals during significant life events, such as the birth of a child, enrolling in school, securing employment, moving to a new home, starting a business, or retiring. Traditionally, these services have been fragmented, requiring citizens to interact with multiple government agencies, often repeating the same information across forms and processes. This disjointed approach can create unnecessary stress during moments that are already challenging or life-changing.

Life events are not merely administrative tasks; they are deeply personal experiences that require tailored support. Governments worldwide have begun recognising the need to structure public services around these key moments in citizens' lives rather than bureaucratic silos. By shifting to a 'life-event-based' approach, public service delivery can become more intuitive, reducing administrative burdens and improving outcomes for citizens.

Personalising life event services in the Digital Age

As described before, digital technology offers opportunities to modernise how governments support citizens during life events. A personalised state, in this context, means designing systems that anticipate and adapt to individual circumstances, using data and technology to deliver seamless, relevant, and proactive support. For instance, when a child is born, a personalised system could automatically trigger processes for registering the birth, enrolling in healthcare, and notifying relevant

agencies—all without requiring citizens to navigate multiple systems.

Personalised digital services can also anticipate potential needs. For example, when a citizen registers a change of address, the system could proactively suggest updating their driver's licence, redirecting mail, or notifying utility providers. This interconnected approach transforms public service delivery from a reactive, paperwork-heavy process into an integrated, citizen-focused experience. However, the challenge for the government is how to be proactive and 'on time' without interfering in the lives of its citizens and making too much (and unnecessary) use of citizens' data, which belongs to them and not to the government.

While the benefits of personalised services are significant, implementing them at scale comes with challenges. Data privacy is a central concern: citizens must trust that their information is used responsibly and securely. Governments must establish clear boundaries between public and private data usage, ensuring transparency and obtaining consent for any data-driven service. Furthermore, proactive services risk becoming intrusive if not carefully designed. For example, offering support in sensitive situations, such as unemployment or illness, must balance helpfulness with respect for personal autonomy.

Another opportunity lies in leveraging emerging technologies like artificial intelligence (AI) and predictive analytics to better understand citizens' needs during life events. However, these tools must be used ethically, ensuring that decisions are fair, explainable, and free from biases. For governments to succeed in delivering such services, collaboration with private sector partners and civic organisations is essential, as they often bring innovative perspectives and resources to the table. Life events can become the organising framework for public service delivery, with digital systems acting as facilitators to strengthen the relationship between citizens and the state, emphasising trust, responsiveness, and shared responsibility. This vision challenges designers and policymakers to think beyond efficiency and convenience, asking how technology can deepen the human connection between governments and their citizens. Life events are not just opportunities to serve; they are opportunities to demonstrate care, competence, and the true potential of a personalised state.

Aligning human-centric design with the personal state

With life events in mind, a significant aspect of the personalised state lies in its alignment with human-centred design. Governments need to be mindful of ensuring that human values remain central in their service design and strategies. While digitalisation/automation can enhance efficiency, they should not come at the expense of human interaction. There is a fine balance between using automation to streamline processes and maintaining a human element in public services, especially when dealing with sensitive issues like healthcare, education, and welfare.

The challenge lies in designing systems that combine the best of both worlds—efficiency through automation, paired with personalised human service when necessary. As AI and machine learning continue to evolve, they will help governments better understand citizens' needs and preferences, but these technologies must be designed with an ethical framework that respects citizens' autonomy and privacy.

Emerging technologies hold the potential to transform the way governments interact with their citizens. These technologies can enable personalised, secure, and efficient services that are tailored to the specific needs of each individual. However, they also bring significant risks. For instance, AI systems can unintentionally reinforce biases if they are

trained on flawed data. Blockchain offers potential for secure digital identities, but its implementation in a public service context is still in its infancy.

Estonia, as a leader in e-government, has already taken steps towards harnessing emerging technologies, but for the Personal State to truly come to fruition, additional advancements are needed in areas such as data interoperability, cybersecurity, and AI regulation. These technologies should be designed with ethics and transparency in mind to ensure they do not create unintended consequences.

Engaging citizens and the private sector in cocreation

For the personalised state to succeed, it's essential for governments to engage citizens and stakeholders in the cocreation process. It is not enough for governments to simply design solutions top-down; citizens should be actively involved in shaping, improving, and maintaining the services they receive. Involving citizens in the design and implementation of services ensures that these services are not only relevant but also user-friendly. Moreover, governments can collaborate with private sector partners to develop innovative solutions that meet the needs of the digital age. Encouraging public-private partnerships could lead to better, more efficient, and more creative solutions while also alleviating the financial burden on governments to develop everything in-house.

External threats and global expansion

Finally, the development of personalised digital public services must consider external threats such as geopolitical instability, climate change, and potential migration patterns. As the global landscape continues to shift, public services must be flexible enough to accommodate challenges such as climate migration or socio-political crises. Additionally, the global expansion of Estonia's model could serve as a valuable learning experience for other nations looking to implement personalised services. However, Estonia will need to address issues like interoperability with other nations' systems and cross-border data sharing while navigating the complexities of international privacy laws.

The Estonia Challenge: Creating personalised digital-first public services for all

You are tasked with envisioning the next evolution of public services: personalised digital solutions that are co-designed, inclusive, ethical, and citizen-focused. Your challenge is to create an innovative concept for public services that combines technology with the human element, ensuring these services are responsive, equitable, and tailored to the individual. This brief calls for designs that consider both the opportunities and challenges posed by the concept of a personalised state, with a focus on trust, value cocreation, accessibility, privacy, security, inclusivity, and citizen self-control.

The objectives

- **Consider the future of citizen-government relationships**, reflecting on how the personalised state might impact citizen trust and engagement. Explore in your local context how the state can proactively address citizens' needs during key life events—such as starting a business, moving to a new home, or having a child—without undermining personal autonomy.
- **Create a personalised, citizen-centric public service** that leverages digital technologies to meet individual needs during significant life events, ensuring accessibility, inclusivity, and equity for all citizens, regardless of age, ability, or digital literacy.
- **Design a service that respects privacy and autonomy**, balancing proactive government interventions with the protection of personal data. Consider how trust can be built through services that anticipate life-event needs—such as education, healthcare, or retirement—while avoiding overreach or data misuse.
- **Incorporate emerging technologies** such as artificial intelligence (AI), blockchain, and the Internet of Things (IoT) to deliver tailored/personalised public services around life events. Ensure these technologies are secure, efficient, and scalable while addressing any ethical considerations.
- **Ensure inclusivity in digital public services** by designing a solution that accommodates citizens with limited access to technology or digital skills. Life-event-based services—such as enrolling a child in school or assisting with employment transitions—should work for diverse populations, including rural communities and underserved groups.
- **Focus on data privacy and security**, ensuring that your service is built on robust safeguards that protect sensitive citizen data, especially around life events that require substantial personal information. Address concerns about transparency, consent, and ethical data usage in your designs.
- **Design a solution that is scalable and adaptable** to different national contexts, taking into account how life-event-based personalised services in a digital government could be implemented not just in Estonia but also in other countries with varying infrastructures and citizen needs.

Design principles

When developing your solution, consider the following principles to guide your design:

- **Design for citizen-centricity**: Ensure the service meets the individual needs of citizens during significant life events while preserving their autonomy and dignity.
- **Design for inclusivity**: Create accessible services that are equitable and usable by all, regardless of digital skills or socio-economic status.
- **Design for privacy and security**: Build robust systems that protect sensitive data and maintain transparency in their usage.
- **Design for scalability**: Ensure the solution is adaptable to different national contexts and infrastructures.

- **Design for collaboration**: Engage citizens and stakeholders in the cocreation process to ensure the solution is relevant and user-friendly.
- **Design for empowerment**: Equip citizens with the tools and confidence to engage meaningfully with government services, fostering trust and agency.
- **Design for sustainability**: Prioritise energy-efficient technologies, eco-friendly practices, and reduced reliance on physical infrastructure to minimise environmental impact.

Questions to consider

- How are the services provided by the state **in your local context** being digitalised? What is going well, what are the challenges?
- Where do the **opportunities** lie with the concept of Personalised State (for them and other states in general), and where are the (unforeseen) **risks**?
- Where is the line between **personal** and **private**? When is proactive too active?
- What do the citizens in your local context expect and value when **communicating with the state**? How could this concept affect the relationship between citizens and the state?
- What do the **new generations** expect from the state, and how does that relate to the concept of Personalised State?
- How can your government **engage citizens and stakeholders** in cocreating solutions for a personal state?
- How do **outside threats** (geopolitical instability, climate change, etc) affect it, and how could they be prevented or mitigated in the development of services? How does potential **climate migration** fit into this picture?
- How could your government develop this to the level that it could be **exported to other countries**?
- What **metrics or benchmarks** can be used to evaluate the success of the personal state concept over time?

Your mission

As a designer, your task is to explore these challenges and design personalised digital services for your government that align with the evolving needs of its citizens while addressing the complexities of privacy, security, accessibility, and trust. Your solution should focus on creating a service that is responsive to individuals, making government service providing more efficient, equitable, and secure. Think about how this service could be delivered in an inclusive, transparent, and human-centred way, keeping in mind the importance of collaboration with both the public and private sectors.

This is your opportunity to contribute to a future where public services are not just digital but personal, ensuring that every citizen feels seen, supported, and empowered. The world is watching. What will you design?

About Estonia

This is a challenge offered to you by the Estonian Government. Estonia, officially the Republic of Estonia, is a country by the Baltic Sea in Northern Europe. It is bordered to the north by the Gulf of Finland across from Finland, to the west by the sea across from Sweden, to the south by Latvia, and to the east by Lake Peipus and Russia. Tallinn, the capital city, and Tartu are the two largest urban areas. The Estonian language is the official language and the first language of the majority of the population of 1.4 million.

Among all nations, Estonia has become synonymous with e-government excellence. After regaining its independence in 1991, Estonia had limited resources but a visionary approach to governance. The country embraced technology as a way to modernise quickly and efficiently. In 2001, it introduced the X-Road platform, which remains the backbone of its digital ecosystem. This interoperable framework allows government databases to communicate, enabling services such as digital signatures, online voting, and real-time tax filing.

Estonia's system is built on three pillars: interoperability, security, and inclusivity. Citizens can access over 99% of public services online, and initiatives like e-Residency have attracted global entrepreneurs to the country. Yet, Estonia has not abandoned traditional methods; physical offices and support centres remain available for those who need them. This hybrid approach ensures that digital services enhance, rather than replace, existing systems.

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