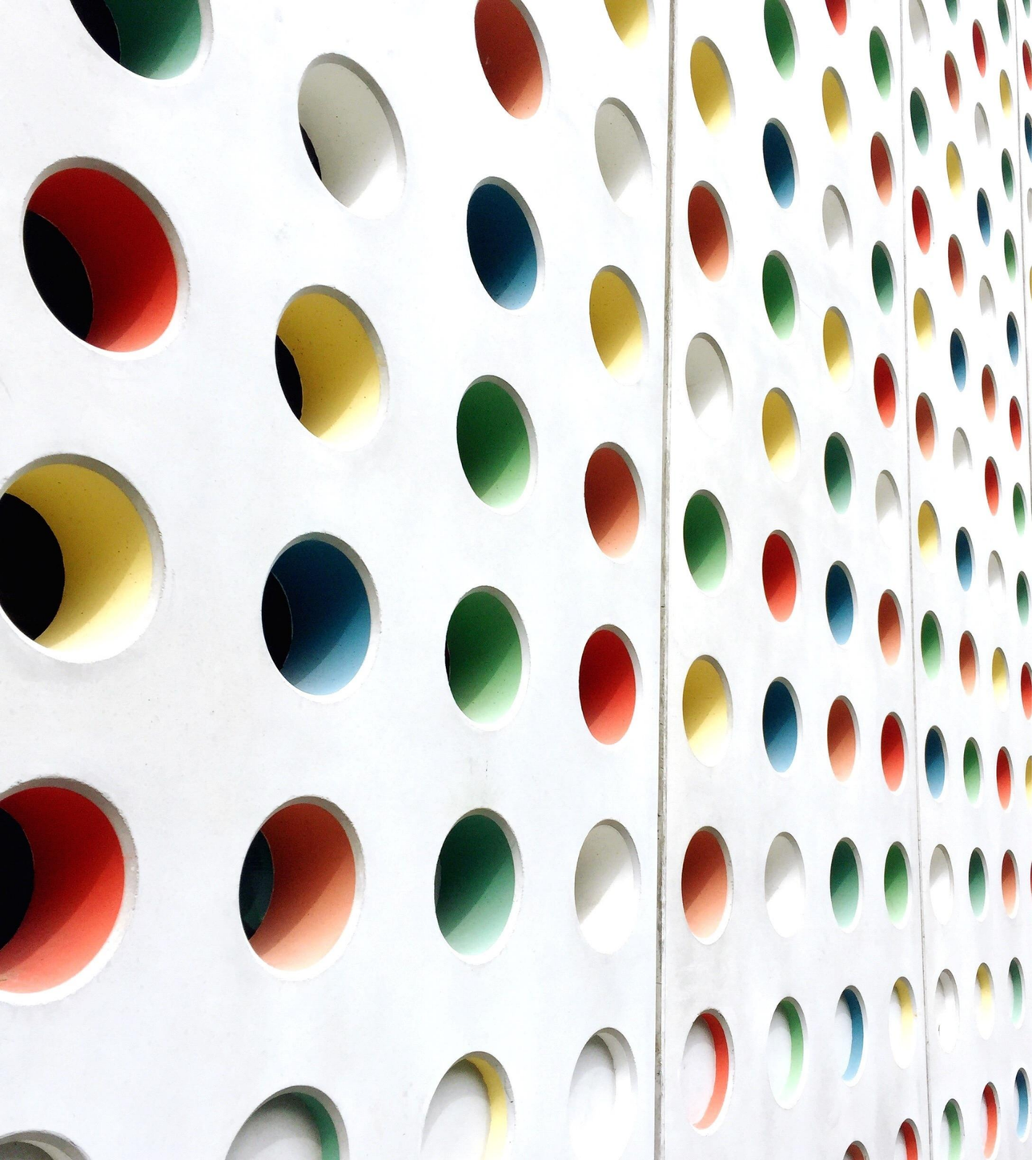


Management of Social Services

WEEK 14: TECHNOLOGY IN SOCIAL SERVICE MANAGEMENT AND DELIVERY (Case studies)

Lecturer: Gloria Angela Mukova (MSc.)

Recap – previous week

Technology in Social service management

- The nature of technology in social services management
- The role of technology in social services management

Fig. 1. Technology in Social Services – Gamma app

This Week … …

Technology in Social service management

Examining transformative examples of how nations harness technology to revolutionise public service delivery across health, education, social protection, and infrastructure sectors.

Fig. 2. Technology in Social Services – Gamma app

Technology in Social Service Management and Provision

A world of Case studies;

- The leapfroggers: Solving acute problems with innovation
- The architects : Building the seamless state

Fig. 3. Technology in Social Services – Gamma app

Case studies: the leapfroggers

Solving acute problems with innovation;

- Estonia
- Kenya
- India
- Rwanda

Case study 1: Estonia

Estonia’s X-Road:

The Digital Highway Connecting Government Services

X-Road represents a paradigm shift in digital governance

- From a centralised database, to a decentralised, secure data exchange layer enabling seamless communication between public and private sector databases.
- This "digital highway" uses standardised protocols where data queries travel through secure channels, returning only necessary information while the citizen maintains control through their digital identity.

The Once-Only Principle

Citizens provide standard information just once to government. The system then shares it securely between agencies as needed, eliminating redundant paperwork and transforming bureaucratic efficiency.

Health

Doctors access complete patient histories with consent, reducing errors and enabling e-prescriptions

Housing

Building permits processed in days, not months, through automated data integration

Education

Automated enrollment and seamless digital record transfers between schools

Case study 2: India

India's JAM Trinity :

Aadhaar & Direct Benefit Transfer

Over 1.3 billion residents hold Aadhaar biometric digital identities, creating the transformative "JAM Trinity"—Jan Dhan bank accounts, Aadhaar identification, and Mobile connectivity—that revolutionises social welfare delivery and financial inclusion across the world's second-most populous nation.

Unique Identity

Biometric verification eliminates ghost beneficiaries

Direct Transfer

Cash subsidies deposited directly to accounts

Transparency

Citizens receive full subsidy value without leakage

Management Impact

Accurate beneficiary targeting eliminates duplicates from welfare rolls, with the Chief Economic Adviser's office estimating savings exceeding $20 billion by 2017. The government now manages hundreds of schemes—from scholarships to rural employment wages—with unprecedented efficiency.

LPG Subsidy Transformation

The cooking gas subsidy scheme ended the corrupt system of subsidised cylinders. Cash equivalents now deposit directly into user accounts, who purchase gas at market rates. This breakthrough innovation ensures full subsidy value reaches citizens whilst dismantling entrenched corruption networks.

Critical Consideration: Whilst DBT enhances financial inclusion and reduces leakage, implementation challenges persist, including authentication failures that risk excluding vulnerable populations from essential services.

Case study 3: Kenya

Kenya’s M-Pesa & M-Tiba:

Mobile Innovation Transforming Service Delivery

01

Transparent Funding

M-Pesa revolutionised financial inclusion, enabling anyone with a basic mobile to transact.

M-Tiba layers atop this foundation as a specialised mobile health wallet where funds can only purchase pre-approved healthcare services.

Donors and insurers send health-specific funds directly to patient wallets

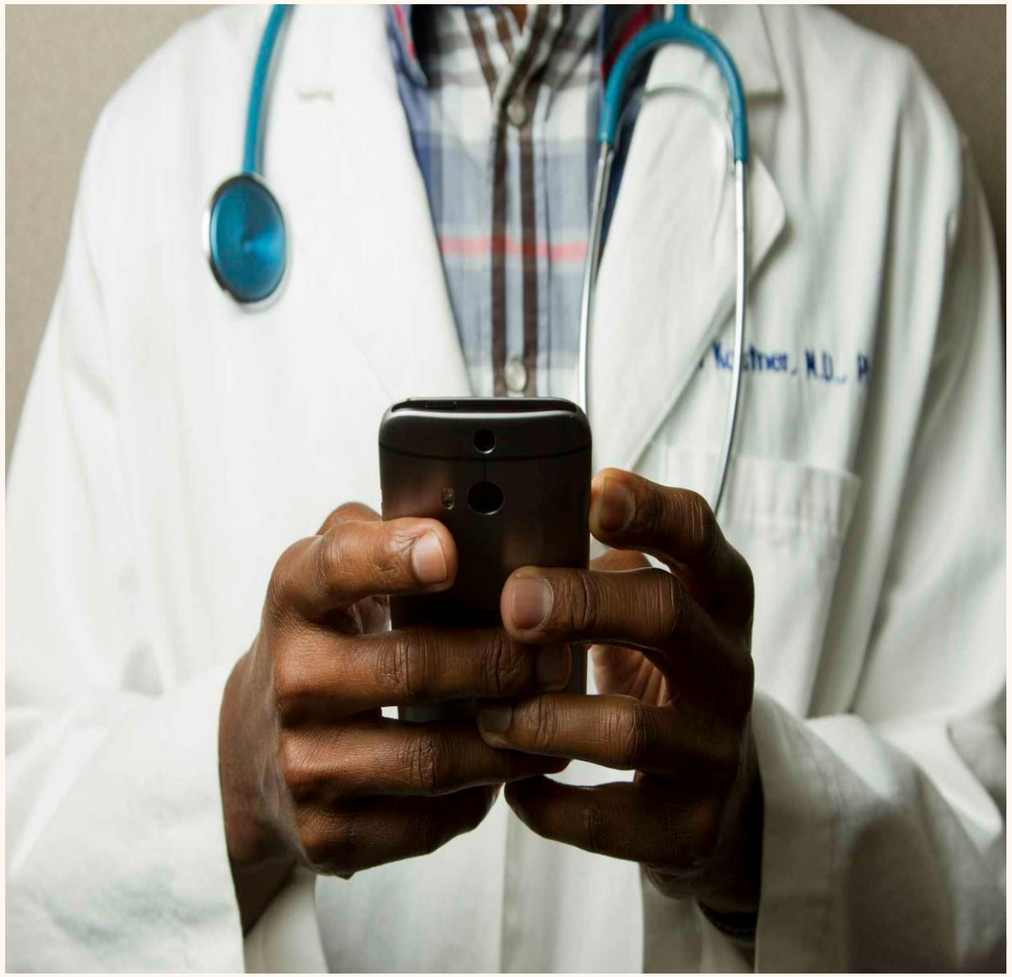


Fig. 4. Technology in Social Services – Gamma app

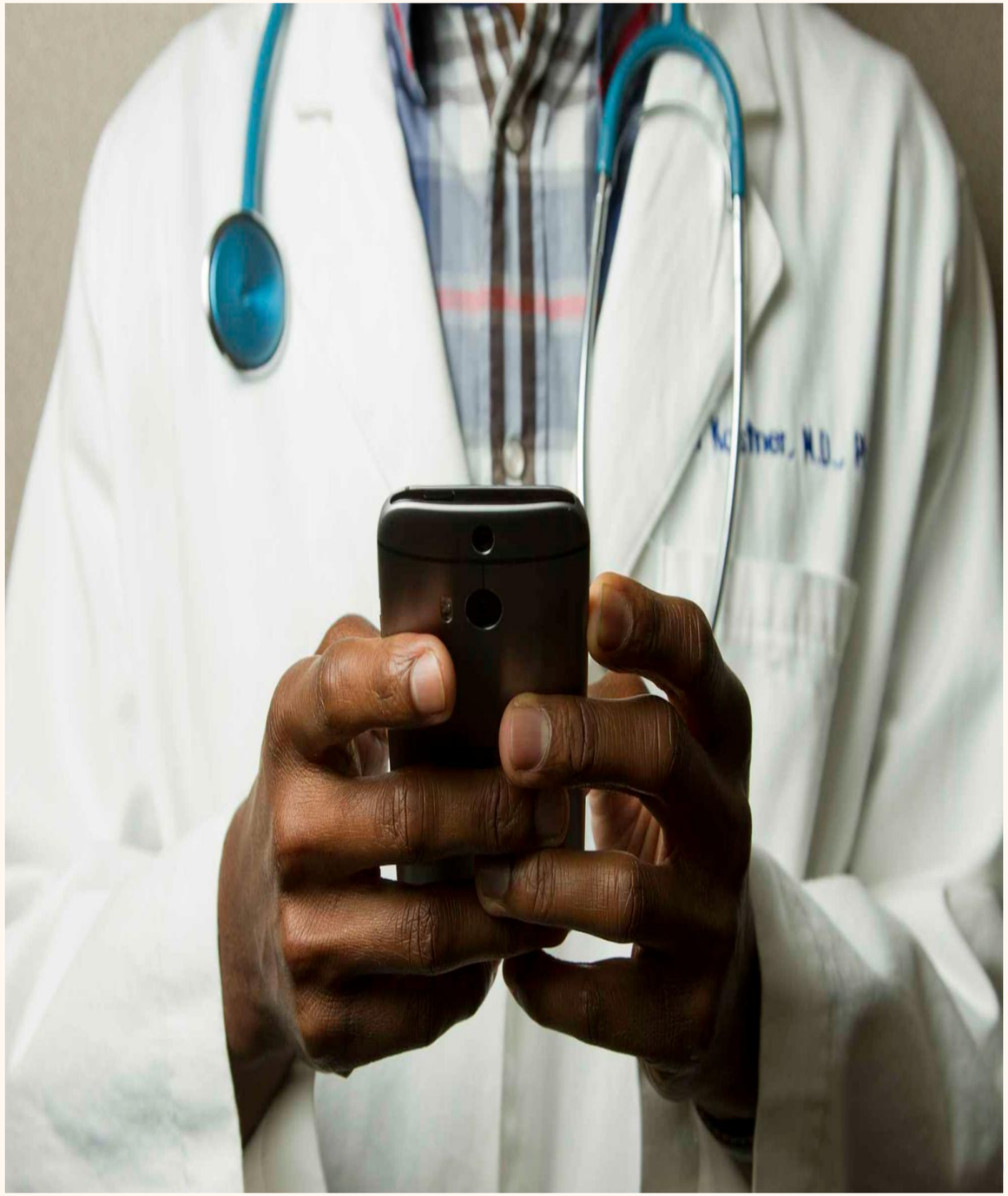
02 **Controlled Spending**

Patients pay for consultations, medicines, and tests at connected clinics

03 **Universal Access**

Millions of transactions improve care access for low-income populations

"Successful integration isn't just about technology itself, but how it's embedded within a broader ecosystem of governance, policy, and user-centric design to solve specific, critical service delivery problems."



Case study 4: Rwanda

Rwanda’s Zipline Drone Delivery:

Mobile Innovation Transforming Service Delivery

Autonomous drones deliver blood, vaccines, and essential medical commodities to remote clinics within 30-45 minutes.

Health workers simply order via mobile app from distribution centres.

Fig. 5. Technology in Social Services – Gamma app

1

Order Placed

Remote clinic requests supplies via mobile app

2

Drone Launched

Autonomous flight to clinic location

Delivery Complete

Parachute drop within 30-45 minutes

3

The transformation from "push" to "pull" logistics—clinics ordering what they need, when needed—drastically reduces stock-outs and wastage. Emergency deliveries for postpartum haemorrhage and malaria now save thousands of lives. With hundreds of thousands of flights completed, Zipline demonstrates how technology overcomes last-mile infrastructure challenges.

Case studies: The architects

Building the seamless state

- Denmark
- United kingdom
- Singapore
- The Netherlands
- South Korea

Case study 5: Denmark

Denmark’s Once-Only Principle

How Denmark eliminated administrative burden through secure data sharing and digital-first communication

Fig. 6. Technology in Social Services – Gamma app

Digital Post & Data Distributor Service

By law, Denmark communicates with citizens over 15 exclusively through secure digital mailboxes—e-Boks or Digital Post.

The Data Distributor Service enforces the "Once-Only" principle: citizens provide information once, and the system securely shares it across authorised agencies.

This eliminates administrative overhead while drastically reducing data redundancy across the public sector.

Fig. 7. Technology in Social Services — Gamma app

Taxation

Over 80% use pre-filled returns populated automatically with data from employers and banks

Denmark saves an estimated 1.3% of GDP annually in public sector administrative costs and over 10 million hours of citizen time per year

Social Services

Applications for child benefits, student grants, and housing subsidies auto-fill with known data

Healthcare

Sundhed.dk provides single access to medical records, prescriptions, and provider communication

Case study 6: Singapore

Moments of Life

Reorganising government services around citizens'

life moments through National Digital Identity

Fig. 8. Technology in Social Services – Gamma app

From Government-Centric to Citizen-Centric

Singapore's National Digital Identity suite, including Singpass, enables different agencies to securely share data and create a unified view of citizens for seamless service provision.

1 Birth Registration

Digital birth certificate delivered automatically to Singpass app upon hospital notification

2 Financial Support

Proactive registration for Baby Bonus Scheme without separate application

3 Education Planning

Nearby preschool discovery and Streamlined application process

4 Healthcare Tracking

Consolidated medical appointments and immunization records in one place

5 Housing Assistance

Relevant housing grants for young families proactively suggested

This paradigm shift reduces the burden on citizens to navigate complex bureaucracies, making interactions with the state proactive, intuitive, and integrated.

Case study 7: United Kingdom

United Kingdom’s GOV.UK Platform

Consolidating hundreds of government websites into one user-tested platform with shared digital infrastructure

Fig. 8. Technology in Social Services – Gamma app

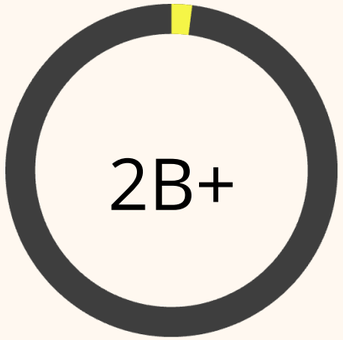
Centralised Excellence

The UK consolidated fragmented government websites into a single domain, supported by shared platforms like GOV.UK Notify for sending emails, text messages, and letters.

This standardisation improved security, enhanced user experience, and eliminated costly duplication across departments.

Saved

Cost reduction in first five years by replacing legacy systems



Annual Visits

Demonstrating massive scale and citizen adoption

01

Online application

For passport

at GOV.UK

02

Receive status

updates via text

from GOV.UK Notify

03

Get confirmation

and receipt through

standardized system

Rigorously tested for clarity and accessibility, ensuring it serves people with varying literacy and digital skills.

The platform sets a global standard for consistent, efficient digital public service delivery.

The Netherlands: Integrated Social Services

Fig. 10. Technology in Social Services – Gamma app

Technology Across Social Service Sectors

Healthcare

Integrated electronic health records system connecting hospitals, GPs, and pharmacies.

MijnOverheid portal provides citizens unified access to personal health data and appointment scheduling.

Education

DUO (Education Executive Agency) manages student financing digitally with automated income-based grant adjustments.

Schools use centralised platforms for tracking student progress and parent communication.

Housing

Digital registration systems streamline social housing applications.

Energy performance data digitised for all properties, supporting sustainability targets and tenant decision-making.

Water & Sanitation

Advanced sensor networks monitor water quality in real-time. Smart water management systems predict maintenance needs and optimise distribution, reducing waste by 15%.

Infrastructure

Integrated public transport payment (OV-chipkaart) across trains, trams, and buses.

Smart grid technology manages renewable energy distribution.

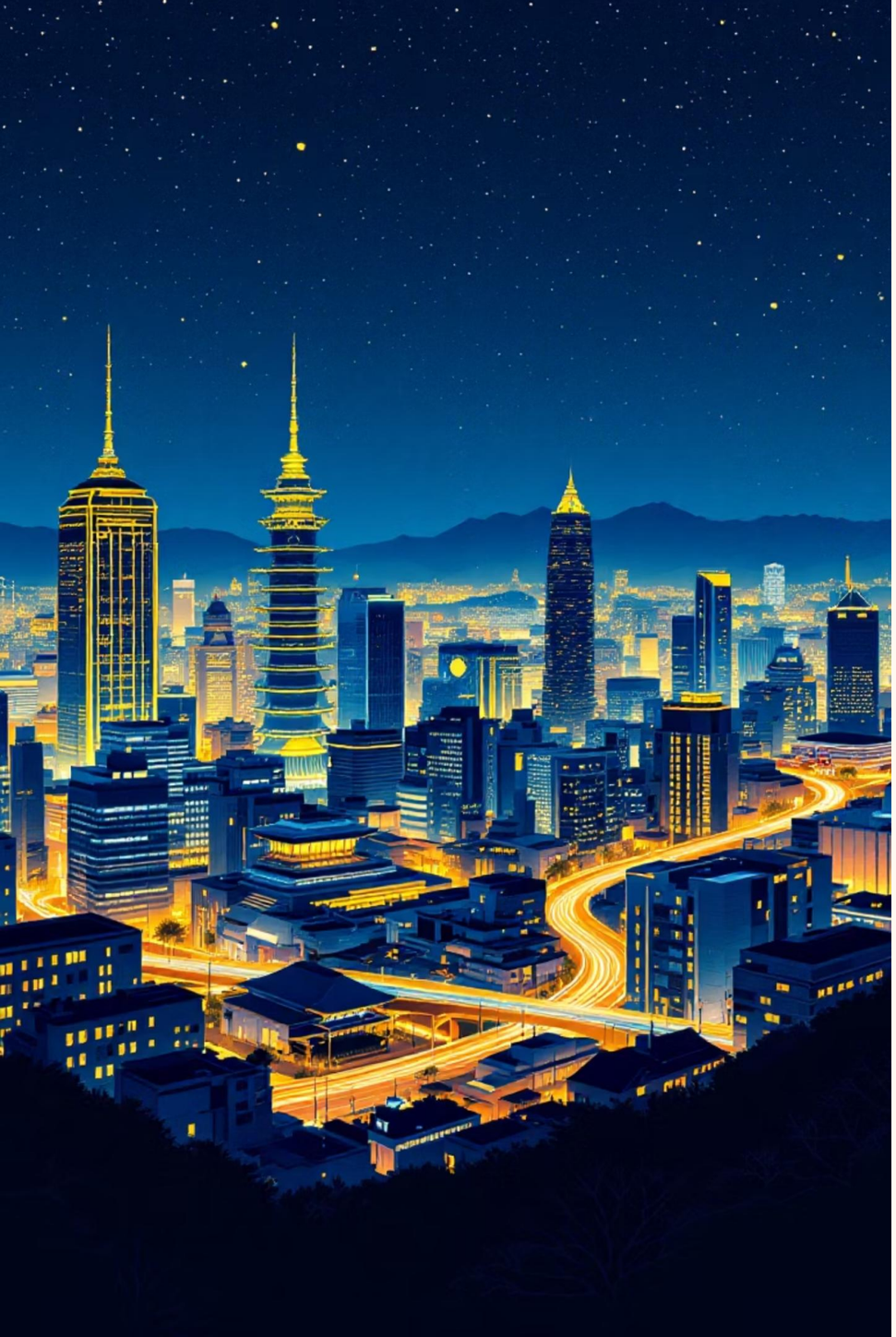
Digital permits expedite construction approvals.

Management Efficiency

BSN (Citizen Service Number) serves as unique identifier across all government interactions, enabling seamless data exchange between agencies while maintaining privacy controls.

Service Delivery

MijnOverheid portal provides personalised dashboard where citizens access benefits, tax information, and public services through single authentication. Proactive notifications alert citizens to relevant programmes.



South Korea: Ubiquitous Digital Infrastructure

Fig. 11. Technology in Social Services – Gamma app

Leading Global Digital Transformation

South Korea leverages world-class internet infrastructure and high digital literacy to deliver sophisticated public services across all sectors.

Healthcare Innovation

National Health Insurance Service provides comprehensive digital access to medical records. AI-powered triage systems in emergency departments reduce wait times by 30%. Telemedicine expanded rapidly, now serving rural populations effectively.

Smart Housing

Intelligent apartment complexes integrate IoT sensors for energy management, security, and maintenance prediction. Digital platforms streamline property transactions and rental agreements, reducing processing time from weeks to days.

Fig. 12. Technology in Social Services – Gamma app

Leading Global Digital Transformation

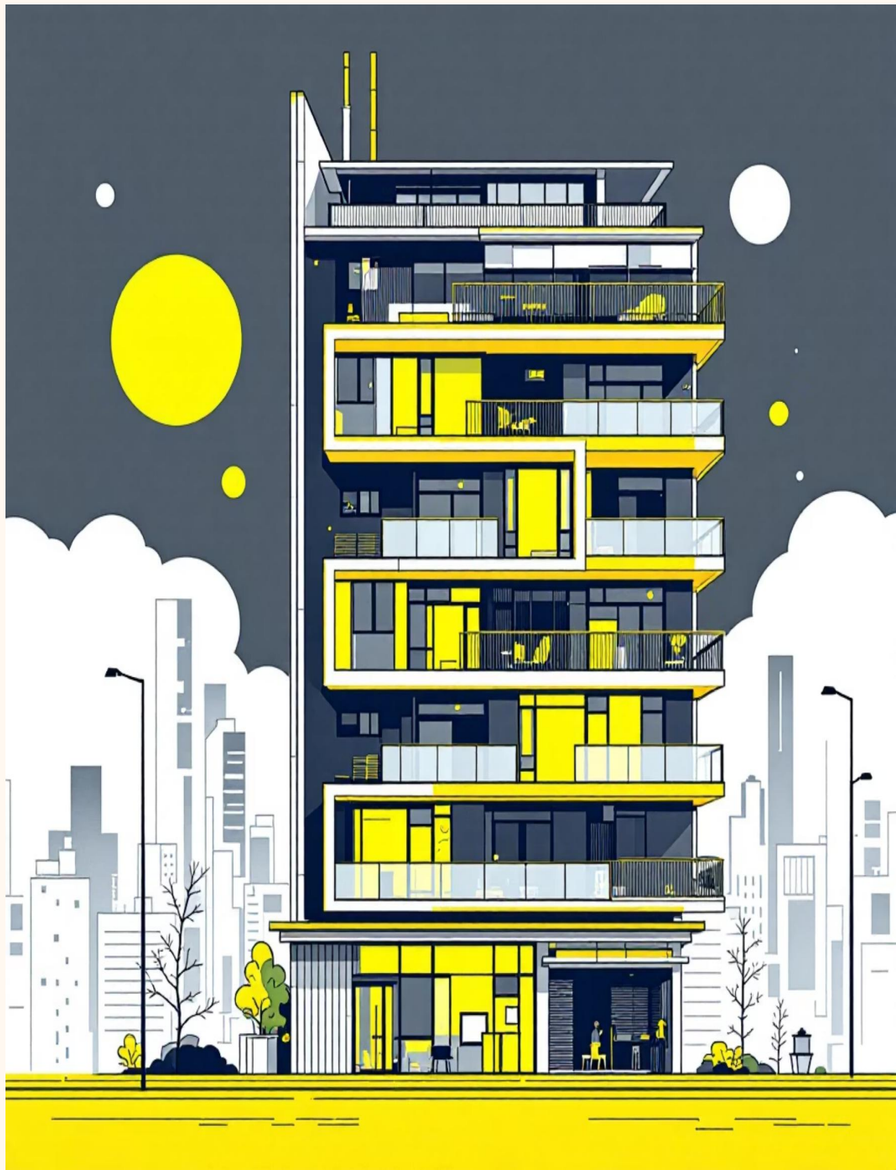
South Korea leverages world-class internet infrastructure and high digital literacy to deliver sophisticated public services across all sectors.

Educational Excellence

NEIS (National Education Information System) integrates student records, curriculum, and assessment nationwide.
Digital textbooks reduce costs while enabling personalised learning pathways.
All schools equipped with high-speed connectivity.

Water & Sanitation

Smart water grids detect leaks within hours. Real-time quality monitoring ensures safety. Citizens track consumption via mobile apps, reducing usage by 12% on average.



Infrastructure

T-money card enables seamless multi-modal transport. AI optimises traffic signals, reducing congestion by 20%. Smart grid supports 20% renewable energy integration with minimal disruption.

> Government24 portal consolidates over 4,000 administrative services, processing 50 million transactions annually with 95% citizen satisfaction

Conclusions

The journey from the health clinics of Rwanda to the digital living rooms of Denmark, reveals a fundamental global transformation. Technology is no longer a peripheral tool, but the central nervous system of the modern state, fundamentally reshaping the social contract between citizens and their governments.

Nations like **Kenya and India** brilliantly demonstrate leapfrogging; They use targeted technologies—mobile money and digital ID—to solve acute, specific problems: financial exclusion and corrupt benefit systems. **Rwanda** uses technology to overcome a critical physical infrastructure gap. Zipline's drones are not just gadgets; they are a life-saving logistics network that redefines what is possible in last-mile delivery. The lesson here is one of radical innovation to bypass traditional constraints.

The architects—**Estonia, Singapore, Denmark, and the UK etc.** are building the seamless state. Their models are not about solving one problem but about redesigning the entire system around principles of interoperability, citizen-centricity, and relentless efficiency. Their lesson is that the ultimate goal is to make the government's complexity invisible to the user.

Conclusions

What then does this mean for the future?

We are moving from an era of *service delivery* to an era of *citizen empowerment*. The trajectory is clear:

From Reactive to Proactive: The state is evolving from waiting for citizens to apply for services, to anticipating their needs. Denmark's pre-filled tax forms and Singapore's proactive baby registration are just the beginning. The next step is AI-driven systems that can identify at-risk families or individuals needing housing support before they fall into crisis.

From Silos to Ecosystems: The success of Estonia's X-Road and Singapore's NDI proves that the value of data is not in hoarding it, but in sharing it securely across a trusted ecosystem. The future state is a platform, not a series of isolated departments.

Conclusions

The Central Challenge is No Longer Technical, But Ethical: As these systems become more powerful, the biggest questions will not be "can we do this?" but "should we do this?"

1. How do we prevent the algorithmic bias seen in some automated systems from perpetuating inequality?
2. How do we safeguard the immense amount of data collected by a Digital ID from becoming a tool of surveillance?
3. How do we ensure that the pursuit of efficiency, as seen in the UK's GOV.UK, does not leave behind the elderly, the poor, and the digitally illiterate?

Therefore, the integration of technology into social services is not a mere IT project. It is the most significant public administration reform of our time. The choice for every country is no longer *if* they will embark on this journey, but *how*. Will they use technology to build walls of control and bureaucracy, or will they use it, as case studies have shown, to build bridges—bridges of trust, of inclusion, and of empowerment, creating a public sphere that is truly of the people, for the people, and fit for the 21st century.

Reference list

- Figure 1. Infrastructure services, Gamma app
- Figure 2-12. Technology in social services, Gamma app
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Next week

Financing social service