



DIGITAL PRIORITIES FOR RAPIDLY URBANISING SECONDARY CITIES

RAPID URBANISATION AND DIGITAL TRANSFORMATION

Digital Priorities for Rapidly Urbanising Secondary Cities focuses on secondary cities, in which the majority of urban growth is occurring and where there are significant challenges resulting from unplanned and chaotic urban development, highly mobile populations, and low levels of economic productivity. These challenges are further compounded by the gradually worsening impacts of climate change, such as cyclones, flooding, extreme heat, and landslides.

The Cities Alliance
Cities and Migration Programme

This summary highlights the key findings of a research report prepared for the Cities Alliance Cities and Migration Programme with funding from the Swiss Agency for Development and Cooperation (SDC). The report builds on Cities Alliance's previous work on the role of digital innovation in urban areas of low and middle-income countries (LMICs) around the world.




Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC

Cities Alliance
Cities Without Slums

Hosted by
UNOPS



Digital transformation offers much promise to secondary cities and other urban areas throughout LMICs. There are already many tried-and-tested examples of how digital solutions can support more inclusive and sustainable economic transformation in the context of rapid urbanisation. Each urban area and municipal government must identify how they can best harness digital innovation and raise their state of digital readiness, working in partnership with the private sector, civil society, academic institutions, and development partners.

THERE ARE IMPORTANT ENVIRONMENT FACTORS THAT CAN BE ENABLERS OR BARRIERS TO SUCCESSFUL DEVELOPMENT AND UPTAKE OF DIGITAL SOLUTIONS, INCLUDING MOBILE AND INTERNET CONNECTIVITY, DATA AVAILABILITY AND QUALITY, DATA INFRASTRUCTURE, HUMAN RESOURCES AND DIGITAL SKILLS IN GOVERNMENT, DIGITAL SKILLS AND LITERACY AMONG THE PUBLIC, DATA SECURITY AND PRIVACY REGULATIONS, PRIVATE SECTOR INNOVATION, AND NEW BUSINESS MODELS.



AREAS OF HIGH POTENTIAL FOR IMPACT

There are five particularly high impact areas of digital innovation. They represent possible solutions to challenges that are urgent in the majority of secondary cities and urban areas in LMICs:



Mobile big data (MBD) sources can be used to understand highly mobile populations

In the absence of reliable and frequently updated governmental data sources, mobile big data can be used to gain insights into population location and typical daily and longer-term movements, as well as many other socio-economic aspects. This can support more resilient urban development and early warning systems and contribute to infrastructure and transport planning.



Digital systems for land governance and tenure

Digital solutions can transform the ability to implement cost-effective land tenure registration. This must be done in a participatory way, helping to empower women and marginalised groups. ICT-based systems for effective land governance support urban planning and commercial land markets, unlocking investment in infrastructure and urban development.



Increasing tax revenue with digital systems

Digital innovation can be used to increase revenue from taxes. Digital tools such as analysis of satellite or drone imagery to categorise properties and apply a simple points-based system can make property tax calculation and revenue generation significantly more effective, providing much-needed revenue to cities.



Digital innovation for sanitation and waste management services

Digital solutions can support solid waste management and sanitation in many ways. For example, open-source mapping platforms or analysis of satellite or drone imagery using machine learning can support governments and private sector partners to identify plastic waste hotspots. Mobile apps and marketplace platforms can help connect people and businesses within the waste management value chain, making it more efficient and cost effective. Mobile app-driven, container-based sanitation solutions can also make a vast difference to service delivery.



E-governance services to support livelihoods

Services such as business registration and license acquisition, property tax calculation and collection, and early warning system alerts are a few examples of what can be offered on e-governance platforms. Offering public services on government-supported digital platforms enables an integrated approach to making cities liveable and supports the livelihoods of citizens.

IT IS CRITICAL TO MAXIMISE THE NUMBER OF PEOPLE THAT ARE ABLE TO BENEFIT FROM ICT-BASED SOLUTIONS SO THAT SOLUTIONS REPRESENT AND SERVE ALL IN SOCIETY.

CASE STUDIES

01
10

Using mobile big data sources to understand highly mobile populations

- › In **Colombo, Sri Lanka**, LIRNE Asia used mobile big data to inform integrated transport planning and urban planning. The company analysed pseudonymised call detail, airtime recharge, and visitor location records to identify clear mobility patterns and hotspots in typical weekday and weekend 24-hour periods. This provided a series of recommendations for the city authority, including adjusting administrative boundaries and accommodating transport demand.
- › In **Colombia**, Telefónica leveraged mobile big data to measure the internal displacement of citizens from the region of La Guajira following a severe drought in 2018. This innovative approach enabled the government to have better data with which to plan and implement social protection measures, reduce climate-related displacements, and build more resilient communities.



Digital systems for land governance and tenure

- › UN Habitat's **Social Tenure Domain Model (STDM)** is a pro-poor, open-source land information tool that is mitigating the gap in conventional land administration systems. It provides a cost-effective way for cities to enable registration of land rights much more quickly than conventional surveying. The information provided by STDM can also serve as the basis for city managers to better plan and provide services to settlements, including slum areas.
- › In **Kasangulu, Democratic Republic of Congo**, local cartography group IRDAC SARL used drones to create a complete land registry plan covering 622,000 ha, with nearly 5,000 land plots extracted from the aerial digital images. The information is helping vulnerable communities formalise and protect their land and property rights and empowering women. It is also reducing potential conflicts and modernising land governance systems. The pilot was supported by the Cities Alliance Innovation Programme.



Increasing municipal tax revenue with digital systems

- › As part of a reform initiative, **Freetown, Sierra Leone**, deployed digital ICT solutions to improve property tax collection and generate sustainable income for city-level initiatives. As 95 per cent of properties were mapped and valued, the number of registered properties doubled from about 57,000 to over 120,000, increasing revenue for the city, which in turn decreased dependency on international aid to provide citizens with public services.
- › In **Rwanda**, the online platform M-declaration enables SMEs to file their tax returns and pay taxes using their mobile phones. Taxpayers dial an access number and follow basic steps to declare their taxes. M-declaration addresses the problems of lack of computer knowledge and complicated online systems by allowing all citizens to declare taxes with their phones. It has also improved compliance by eliminating the need for taxpayers to wait in a queue at the Rwanda Revenue Authority offices.





Digital innovation for sanitation and waste management services

- › The African plastic waste recycling company **Coliba** created Coliba 2.0, a mobile application, SMS, and web platform to implement plastic waste collection service in Abidjan. Coliba collects and transports recyclables based on requests received from the app, sorts them, and supplies the recyclables to companies that export plastic flakes onto the international recycling market. Important waste management services are provided at no cost to the government, while recyclable materials are diverted from landfills into recycling markets and local jobs are created.
- › In Nairobi, the company **Sanergy** is using digital solutions to enhance container-based sanitation. Mobile-enabled sensors collect information when a toilet is full and needs to be serviced. It offers the toilets to municipal governments at no cost up front and charges \$30 per year to remove waste, a pay-per-service solution that has been highly successful. Sanergy estimates that the sanitation cost per person has gone down from \$56 to \$13, of which the government supports only \$6.



E-governance services to support livelihoods

- › The **Irembo Digital Platform** in Rwanda is an e-government portal that enables access to government services. Built through a public-private partnership, the platform provides more than 96 services, such as birth certificate applications, driver's license registration, and land title transfers across six different government agencies. More than 90,000 citizens a month use the platform, which services over 4 million citizens. In 2021, Rwanda experienced a start-up boom that can be partially attributed to quick access to business registrations, obtaining licenses, and making online payments through Irembo.
- › Across India, governments struggle with vast amounts of paperwork and data involved in welfare deployment schemes. **EasyGov** created a one-stop platform for welfare recipients to fill in their data, with data analytics to recommend eligible programmes. The government distributes and monitors funds through the app. It is an end-to-end solution to solve issues in human services with a family-centric, progressive focus that also allows the tracking of progress of each recipient/family based on various human development metrics and benchmarks.

Cities Alliance
Cities Without Slums

Hosted by
 **UNOPS**

Cities Alliance
UN House
Boulevard du Régent 37
1000 Brussels, Belgium
info@citiesalliance.org

 www.citiesalliance.org

 [@citiesalliance](https://www.facebook.com/citiesalliance)

 [@Cities Alliance](https://www.linkedin.com/company/citiesalliance)

 [@CitiesAlliance](https://twitter.com/CitiesAlliance)