the Singapore WAY

USE CASE

Digital Twins for All

Digital Twins for All: Affordable Urban Planning SaaS from Bangalore

1. Context Snapshot – A Captivating Story

- City Name: Bangalore
- Country: India
- Population: 13 million
- Year of Launch: 2024

Bangalore was growing fast—and unevenly. From elite tech corridors to informal peripheries, the city was a tangle of contradictions: smart traffic signals in one ward, open sewers in the next. Planners faced mounting pressure to make decisions faster, fairer, and more future-proof. Yet most lacked access to real-time data, spatial simulations, or cost-effective modeling tools. Large-scale urban planning platforms were prohibitively expensive. Smaller municipalities in India and across the Global South had even fewer options.

City planner Rohit Menon, working with the Bangalore Urban Innovation Unit, saw a way forward—through a bold adaptation of The Singapore Way. He was inspired by Singapore's use of "digital twins"—virtual replicas of real-world systems—to inform everything from flood control to housing layout.

But instead of building one expensive twin for one wealthy city, Rohit envisioned a SaaS platform that could serve thousands—low-cost, modular, and tailored for planning under constraint.

2. LOCAL LEADER'S Vision Statement

"If Singapore can model its future down to the streetlamp, why can't we? The answer isn't scale—it's accessibility. Planning data should serve every planner, not just the richest."
— Rohit Menon, Urban Planner & Co-Founder of CityTwin SaaS

3. 10 Lessons from The Singapore Way Adapted to the City

Singapore Strategy	Local Adaptation
Digital Twins for Planning	Built "CityTwin Lite"—an open-source SaaS for mid-tier cities
Pragmatic Innovation	Designed mobile-friendly, low-bandwidth twin for informal settlements
Sustainability as System Design	Layered water, waste, heat, and tree cover into 3D simulation modules
Long-Term Thinking	Enabled 10- and 25-year growth scenarios even for small towns
Institutional Trust	Published planning assumptions on each map layer to build transparency
Talent and Technology	Trained non-technical planners to use AI tools through gamified UX
Multi-Stakeholder Collaboration	Co-designed features with mayors, ward officers, and civil society
Layered Decision-Making	Integrated utilities, schools, roads, and flood zones on the same visual platform
Exporting Innovation	Licensed the tool to 17 small cities across South Asia and East Africa
Data Commons	Local users can upload geotagged citizen data into simulation dashboards

4. The Local Plan

- **Name of Initiative: CityTwin SaaS: Digital Twins for All**
- **Objectives:**
  - **Democratize access to predictive urban planning tools**
  - **Support under-resourced municipalities in visualizing and testing development scenarios**
  - **Reduce infrastructure mismatches by simulating impact before building**

- **Key Design & Policy Tools:**
  - **Modular SaaS pricing (freemium + NGO-supported licensing)**
  - **GIS-lite Toolkit for sub-5MB devices**
- **TwinBuilder Workshop Kit for municipal deployment in 5 days or less**

5. Implementation Framework

Phase	Activities	Duration	Stakeholders
Phase 1	Prototype twin for three Bangalore neighborhoods (rich, middle, informal)	4 months	BBMP, NGOs, architecture students
Phase 2	Build TwinBuilder Dashboard + public feedback loops	5 months	Urban Labs India, AI4Gov
Phase 3	Deploy in 10 Tier-2 cities + localize into Kannada, Hindi, Swahili	6 months	MoHUA, African Smart Cities Network
Phase 4	Launch "Plan With Data" Fellowship for small-town officials	Ongoing	Academic partners, World Bank, Niti Aayog

6. Outcomes & Impact (18–24 Months)

- **Quantitative:**
  - **43 Indian towns onboarded to CityTwin SaaS**
  - **Average cost per planning simulation dropped from ₹75,000 to ₹6,000**
  - **2,100 officials trained; 68% female participation in municipal tech leadership**

- **Qualitative:**
  - **A small town near Mysuru avoided floodplain development thanks to CityTwin hydrology layers**
  - **Slum redevelopment in Nairobi included community voice directly into the twin design**
  - **Bangalore's stormwater plan revised after twin simulation revealed blockage hotspots missed by consultants**

7. Challenges Faced & How They Were Overcome

Challenge	Solution or Mitigation
Low technical literacy in planning teams	Gamified interfaces + digital twin "mentorship" programs
Pushback from legacy software vendors	Made code open-source and encouraged partner
Budget constraints in Tier-3 cities	Donor-supported licenses bundled with civic tech support
Lack of base data	Used satellite imagery and crowdsourced maps to bootstrap first layer

8. LOCAL LEADER'S Reflections

"Singapore showed us how to think like a system. But we learned to build for context—messy, mobile, multilingual. Now, even the smallest town can twin its future."
— Rohit Menon