



InfiniteFoundry
3D Digital Plant

The Potential of Digital Twin Technology

DIGITAL TRANSFORMATION IN URBAN MOBILITY

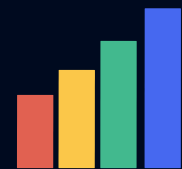


Challenges in Urban Mobility



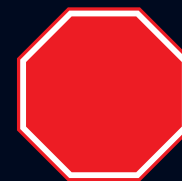
Congestion and inefficiency in transport planning

Significant economic and environmental impact



Data Fragmentation

Data scattered across different entities without an integrated view



Reactive vs. Predictive Decisions

Lack of tools to anticipate problems and optimize solutions



Sustainability Requirements

Emission reduction policies and transport optimization need effective digital tools



Infinite Foundry transforms cities into interactive digital replicas, enabling real-time visualization, simulation, and optimization—making urban management more efficient and sustainable.

The Role of Digital Twins in Urban Mobility

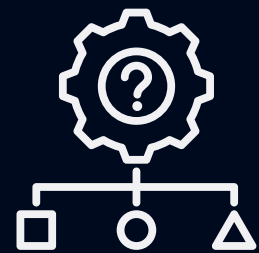
- A) Traffic Flow Analysis & Optimization**
- B) Smart Public Transport Management**
- C) Private Transport & Parking Management**
- D) Infrastructure for Pedestrians & Cyclists**
- E) Sustainability & ESG**

A) Traffic Flow Analysis & Optimization



Real-Time Monitoring

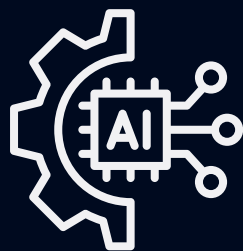
Integration of IoT data, cameras, and GPS to create a dynamic traffic model



Predictive Simulations

Test changes in real time before implementation

- adjusting traffic directions and signal timings
- implementing low-emission zones
- assessing the impact of new infrastructure on traffic



AI for Congestion Prediction

Identification of traffic patterns and recommendation of solutions before congestion occurs



A city council wants to reduce traffic on the main avenue. Before making a decision, they can simulate the impact of a new tunnel, detours to secondary roads, or changes in traffic directions, etc., analyzing results without real-world costs.



B) Smart Public Transport Management



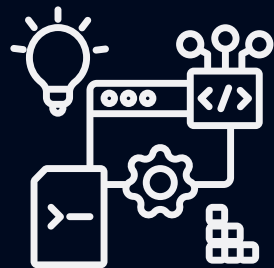
Route & Frequency Optimization

Integration of IoT data, cameras, and GPS to create a dynamic public transport model



Demand Forecasting

AI and historical data analysis to predict passenger flows and adjust service availability



Multimodal Integration

Synchronization between public transport, bicycles, and scooters for a seamless mobility ecosystem



A city can use a digital twin of its public transport network to adjust bus frequency based on real-time demand, reducing wait times and enhancing the passenger experience.

DAILY NEWS

Word • Business • Finance • Lifestyle • Travel • Sport • Weather

TfL to create digital twin of London Underground to monitor track and tunnels

11 JAN, 2022 | BY ROB HAKIMIAN

Transport for London (TfL) has entered into a partnership with advanced digital twin start-up Spinview to create a digital twin of the London Underground.

C) Private Transport & Parking Management



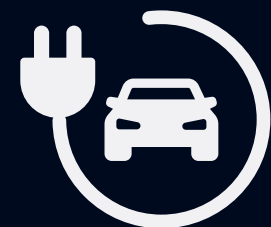
Parking Optimization

Real-time identification of available parking spots and simulation of the impact of new parking areas



Ride-Sharing Management

Integration of data from Uber, taxis, and Carpooling services to maximize efficiency and reduce traffic congestion



EV Infrastructure Planning

Strategic placement of charging stations based on demand patterns



Before installing new EV chargers, opening a parking lot, or changing street parking availability, a city can simulate the impact of these measures, preventing unnecessary investments.

D) Infrastructure for Pedestrians & Cyclists



Safety & Efficiency

Analysis of pedestrian and cyclist flows to optimize crosswalks and pedestrian zones



Impact Simulations

Evaluation of car-free zones before implementation to assess their effects



A city can simulate the impact of closing a central street to traffic, analyzing how citizens react before making a final decision.

DAILY NEWS

Word • Business • Finance • Lifestyle • Travel • Sport • Weather

**Pedestrian safety
& comfort at
Napoli Centrale
using digital twin**

E) Sustainability & ESG



Emissions Monitoring

Correlation between traffic patterns and air quality to assess environmental impact



Promotion of Green Mobility

Testing the effects of sustainable transport policies before implementation



Regulatory Compliance

Simulations to evaluate the impact of bicycle infrastructure, public transport expansion, and low-emission zones



A city council can visualize how a new metro line would reduce pollution in a specific area before approving the project.



WHY US?



Tecnologia de Gêmeos Digitais validada na Indústria

Robust platform, already implemented in complex industrial environments

Real-Time Data Integration

Unlike static models, our platform provides dynamic updates using IoT sensors and big data

Sustainability & ESG as a Core Pillar

Measurement and optimization of emissions, energy efficiency, and environmental impact

Simulation & Forecasting Tool

AI-driven modeling to predict and test different urban planning scenarios before implementation

Customization & Scalability

Adaptable solutions for cities of all sizes and unique mobility needs

LET'S WORK TOGETHER



PILOT PROJECTS

Initial tests in specific streets or transport systems

GRADUAL SCALING

Expansion of the solution to cover the entire city or integration with national smart city plans

FULL CUSTOMIZATION

Development of tailored solutions to meet the specific needs of each municipality



AVISO DE ABERTURA DE CONCURSO

INVESTIMENTO C19-i08 - Territórios Inteligentes

N.º 10/C19-i08/2025

DigitalTwins4SmartTerritories (DT4ST)
Gémeos Digitais para Territórios Inteligentes



PILOT PROJECT EXAMPLE

DIGITAL TWIN FOR URBAN MOBILITY OPTIMIZATION

➤➤➤ **Objective:** Create a Digital Twin to monitor, simulate, and optimize urban mobility.

➤➤➤ **Duration:** 6 months (2 months of data collection, 2 months of model development, 2 months of testing)

➤➤➤ **Pilot Area Definition**

1. Data Gathering and Integration
2. Digital Twin Development
3. Simulations and Tests
4. Monitoring and Post-Pilot Expansion





InfiniteFoundry

delivering efficiency and innovation since 2017