

# Business Case – Generative Digital Twin & Scenario Planner for Road Networks

## Problem Statement

Infrastructure planning at Brisa involves complex, data-heavy simulations that are difficult for decision-makers to interpret. Evaluating and communicating the impact of interventions such as **toll adjustments, lane expansions, or construction phases** is currently slow, highly technical, and fragmented across teams.

This limits agility, delays investment decisions, and reduces transparency in ESG and mobility planning processes.

## Objective

Leverage **Generative AI** to simulate road network interventions and automatically produce **clear, stakeholder-ready summaries** that accelerate planning and align with Brisa's vision of **safer, smarter, and more sustainable mobility**.

## Business Model Canvas Summary

Element	Description
<b>Key Partners</b>	A-to-Be (technology & data integration), Brisa Infraestruturas (asset & sensor data), Corporate Strategy & Sustainability Office, external research and technology partners.
<b>Key Activities</b>	Data integration (traffic, tolls, GIS), digital twin simulation modeling, prompt-tuning for impact narratives, ESG contextualization, user testing. <ul style="list-style-type: none"><li>• Accelerated decision-making for infrastructure investments.</li><li>• Transparent and explainable simulation outcomes.</li><li>• Integrated environmental and financial impact analysis.</li></ul>
<b>Value Proposition</b>	

	<ul style="list-style-type: none"> <li>• Natural-language summaries for non-technical stakeholders.</li> </ul> <p>Corporate Planning, Operations Control Center (OCC), Sustainability Team, Executive Leadership, Regulators, Public Affairs.</p>
<b>Customer Segments</b>	
<b>Customer Relationships</b>	Collaborative dashboards, self-service scenario exploration, conversational AI interface for decision support.
<b>Channels</b>	A-to-Be internal digital platforms, APIs for integration with existing planning tools, executive dashboards and ESG reports.
<b>Key Resources</b>	Simulation data (traffic, emissions, tolls), GIS layers, historical interventions, LLM infrastructure (Hugging Face/OpenAI), prompt templates, and ESG datasets.
<b>Cost Structure</b>	Cloud compute resources, LLM API usage, data engineering and integration costs, model fine-tuning, maintenance and visualization interfaces.
<b>Value Streams</b>	Reduced analysis and reporting time; lower external consultancy costs; faster stakeholder approvals; improved ESG transparency and compliance readiness.