



Best practices about
how SMEs utilize AI and Green practices.

>>> BEST PRACTICES <<<



Transforming Tomorrow, Today



Sector: Smart Cities and Sustainable Mobility

Area of Impact: Air quality, urban environment

Location: Malta

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Digital Traffic Brain

Overview of the Practice

Digital Traffic Brain is a Maltese innovation that applies artificial intelligence to transform urban mobility management. By integrating real-time data from cameras, sensors, and road infrastructure, it creates a dynamic system that adapts continuously to changing conditions. It manages traffic lights, optimises public transport routes, detects incidents, and even supports municipalities with road maintenance and litter detection. Unlike fixed systems, it learns and evolves with behaviour, enabling smarter, safer, and more sustainable urban living.

Outcomes and Impact

- Lowered emissions through reduced idling and congestion
- Improved air quality in urban areas
- Safer streets and quicker emergency interventions
- Cleaner public spaces via waste monitoring
- Economic savings on fuel, time, and road repairs
- Job creation in AI, data analysis, and sustainable mobility
- Reduced national costs of congestion in Malta

Objectives

- Reduce congestion and emissions for cleaner air
- Enhance road safety and emergency response times
- Optimise public transport efficiency
- Extend infrastructure lifespan through predictive maintenance
- Support cleaner, more liveable cities

Innovation Level

The initiative stands out for applying adaptive AI to traffic management and municipal services, moving beyond static control systems. It integrates predictive analytics, computer vision, and continuous learning to optimise existing infrastructure without costly expansions.



**digital
brain**



Evidence of Effectiveness

- Significant congestion-related costs in Malta (hundreds of millions annually) are being addressed
- Demonstrated reductions in bottlenecks and improved emergency response times
- Positive outcomes across environmental, social, and economic dimensions

Scalability and Replicability

The model is suitable for replication in other Mediterranean and European cities facing congestion and infrastructure challenges. Cloud-based deployment eases scalability, while pilot projects help adapt solutions to local contexts



Activities and Approach

- Real-time AI-driven traffic light and route management
- Public transport scheduling optimisation
- Incident and hazard detection through sensors and cameras
- Predictive maintenance monitoring to prevent infrastructure failure
- Computer vision for litter detection and urban cleanliness monitoring

Alignment with

International Standards

The practice aligns with several UN Sustainable Development Goals:

- SDG 11 (Sustainable Cities and Communities)
- SDG 13 (Climate Action)
- SDG 9 (Industry, Innovation, and Infrastructure)
- SDG 12 (Responsible Consumption and Production)

>> Challenges & Lessons Learned <<

- Reliable, high-quality data streams are essential
- Public trust depends on transparency and data protection
- Pilot projects are key to refining solutions before full deployment
- Robust infrastructure investment is needed for scalability, though cloud solutions can help
- Greatest benefits occur in highly congested areas