

Bike Rentals

Digital Transformation in Bike Rentals

Smarter, app-based bike rental experiences powered by real-time data, IoT tracking, and automated fleet management.

Executive Summary

A European mobility solutions company offering smarter, app-based bike rental experiences partners with our team to modernise how rentals are booked, tracked, and managed. The EvvoMobility platform was built to provide real-time fleet visibility, automate routine workflows, and deliver a seamless customer experience, all at scale.

The system connects customers, operators, and backend infrastructure through a unified digital ecosystem. Automated reporting, smart IoT tracking, and a centralised operator dashboard significantly reduced manual overhead and improved fleet utilisation across multiple European cities.

About the Client

Industry

Mobility / Smart Transportation

Organisation Type

Private, Multi-city operations

Coverage

Multiple European cities

Objective

Simplify rentals, provide real-time tracking tools, and automate routine workflows to minimise errors

Business Context

The client operates across multiple European cities, offering sustainable bike-sharing solutions. As demand grew, managing rentals manually created inefficiencies, inconsistent service, and inaccurate data. Customers struggled to find available bikes while operators lacked the tools needed to track usage patterns and plan maintenance proactively.

The goal was to create a unified digital platform capable of:

Simplified Booking & Payment	Real-Time Fleet Tracking	Automated Workflows	Data-Driven Insights
Frictionless user journey from booking to riding	Live visibility into bike location, status, and health	Reduce manual errors and operational overhead	Analytics to improve fleet utilisation and planning

Key Challenges — Field Operations & Engagement Limitations

Commanders and administrative personnel struggled with fragmented systems leading to inefficiencies and delayed operational decisions.

1. No real-time visibility into bike availability or location during active rentals.
2. Manual booking and return tracking, delaying reporting and fleet analytics.
3. Disparate platforms for booking, payment, and fleet management.
4. No predictive indicators for maintenance needs or equipment failures.
5. Privacy concerns around handling customer location and payment data.
6. Delayed incident response due to limited real-time visibility of fleet status.
7. Inefficient data consolidation making holistic performance reporting difficult.
8. Limited location tracking accuracy in areas with poor GPS signal.
9. Lack of historical usage insights to evaluate long-term fleet performance trends.
10. No automated alerts for bikes that are idle, damaged, or require servicing.

Our Approach — Human Centred, Data-Driven

We tackled each challenge with a modular, scalable system designed for real-time visibility and operational agility. By blending user-centric design with intelligent automation, we ensured seamless adoption and measurable impact across all levels.

The Solution — EvvoMobility Digital Ecosystem

We developed and deployed a connected digital ecosystem linking customers, operators, and backend systems — built on cloud infrastructure with real-time data sync and smart IoT integration.

Solution Highlights

Customer Mobile App

Book, pay, and locate bikes instantly. Real-time availability check, reservation, and automatic system update upon booking.

Operator Dashboard

Track bike usage, health, and location from one centralised view. See all bikes: in use, available, or under maintenance.

Real-Time Data Platform

Automatically syncs data between the app and backend. Ensures operators always have the latest fleet status and analytics.

Automated Alerts & Servicing

Triggers instant notifications when bikes need servicing, are reported damaged, or have been inactive beyond set thresholds.

Smart IoT Fleet Tracking

Geolocation APIs and IoT sensors provide live bike locations and status, even in environments with variable connectivity.

Automated Reporting & Analytics

Generates detailed usage, revenue, and fleet performance reports with filters, exportable in multiple formats.

Implementation Strategy

- 1. Modular Rollout** Initiated with mobile app booking and payment, expanded to operator dashboard and IoT tracking modules.
- 2. Rapid Integration** Sync with internal fleet management systems and hardware APIs for IoT devices and geolocation.
- 3. Mobile, Web & IoT Applications** Fully functional across web, tablet, mobile, and connected IoT tracking hardware.
- 4. Role-Based Access Control** Tiered permissions for customers, field operators, supervisors, and administrators.

Results & Business Impact

The EvvoMobility platform significantly improved operational visibility, customer satisfaction, and administrative efficiency. Real-time data access, automation, and centralised reporting led to faster decisions and measurable performance gains.

Performance Metric	Before	After	Impact
Rental Process Speed	Manual / slow	60% faster	60% improvement
Fleet Visibility	Partial / fragmented	100% real-time	Full fleet visibility
Operator Productivity	Baseline	+45% uplift	45% boost
Incident / Maintenance Alerts	Manual & delayed	Automated real-time	Instant response
Customer Booking Experience	In-person / phone	App-based instant	Fully digital

"Evvo transformed how we manage mobility. Every bike, every ride, every transaction, visible and effortless."

— Client, European Mobility Solutions Company

Roadmap & Future Enhancements

The platform is built with scalability in mind, enabling continuous evolution through AI, advanced analytics, and deeper system integrations.

1. Predictive Maintenance Engine

Use historical usage and sensor data to predict bike maintenance needs before failures occur.

2. Dynamic Pricing Module

Implement demand-based pricing to optimise revenue during peak periods and incentivise off-peak usage.

3. Performance Benchmarking

Compare station, zone, and city-level metrics against benchmarks for actionable fleet insights.

4. Third-Party System Integration

Enable seamless data flow with city transport APIs, payment gateways, and national mobility infrastructure.

5. AI-Driven Demand Forecasting

Predict bike demand by location and time using telemetry, weather, and historical ride data.

6. Carbon Impact Reporting

Automatically calculate and report CO2 savings to support client ESG and sustainability goals.



Let's connect and collaborate.

www.evvotechnology.com