AI-Driven Task Pricing: The Key to Reducing Costs in Micromobility Operations

EMAAR

OYO

Kaan Tas

General Manager, Lime London

bricklane

Introduction

- As the **micromobility industry continues to expand rapidly**, new opportunities emerge for innovation and growth. One such opportunity lies in **optimizing the pricing strategies** for street-based operational tasks.

- Many companies today still rely on **traditional fixed-pricing models** for critical street-based tasks such as **deployment and retrieval of bikes, tidying operations, and relocation tasks**.

- While this approach is straightforward and easy to implement, it **fails to account for key variables** such as demand fluctuations, time of day, location-based labor costs, and operational efficiency.

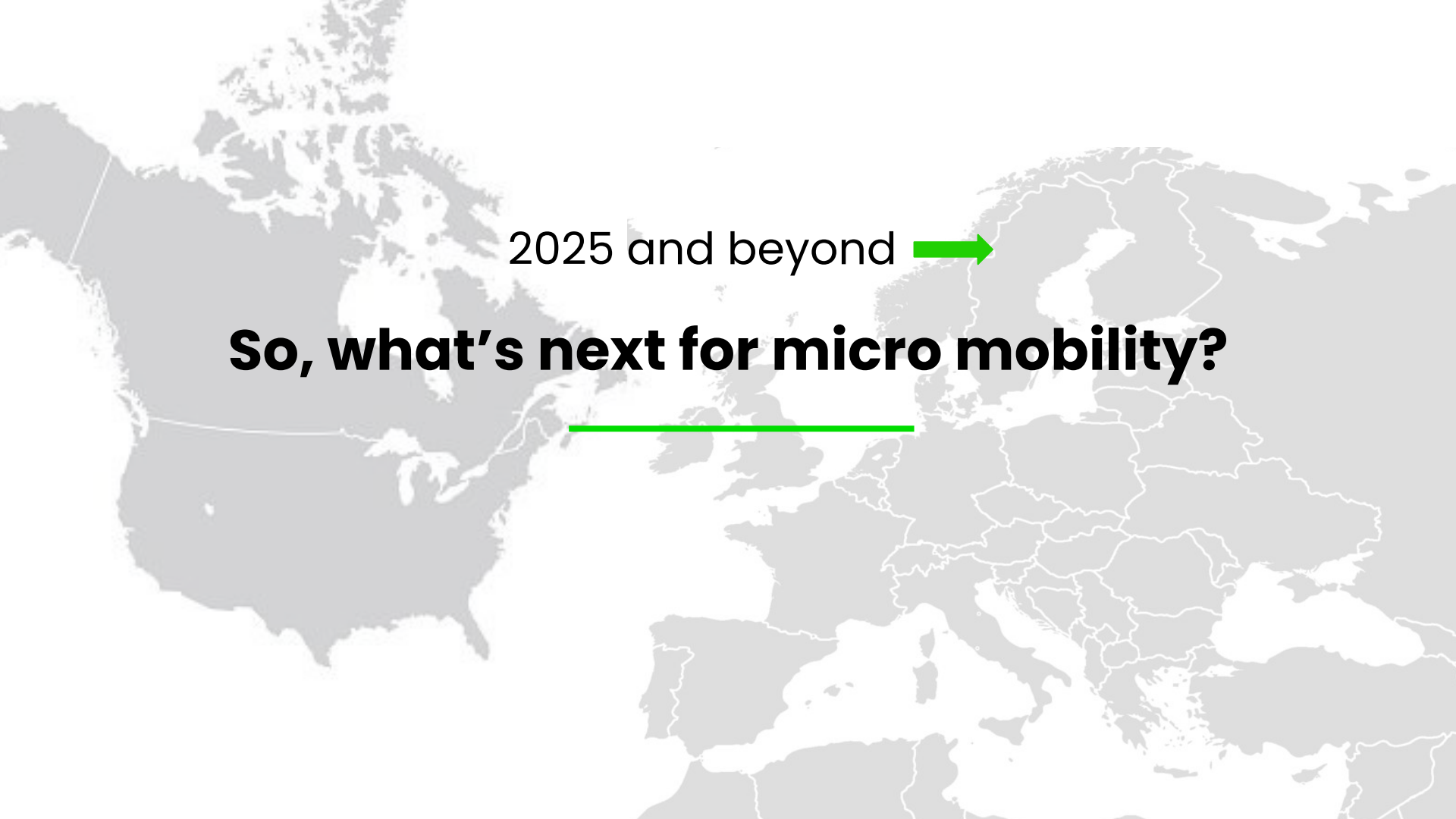
- The **solution** to these challenges lies in **AI-powered dynamic pricing**, which leverages real-time data to optimize pricing and improve operational effectiveness.

- By the end of this session, we will explore how AI-driven pricing can **enhance operational efficiency, reduce costs, and drive sustainable growth** in the micro mobility industry.

Micro mobility is experiencing rapid growth worldwide, with the global market valued at US$ 61.55 Billion in 2024.

The revenue is expected to grow at 17.5% and is projected to reach $223.66 Billion by 2032.

Heineke et al., 2024; Stellar Market Research, 2024



2025 and beyond

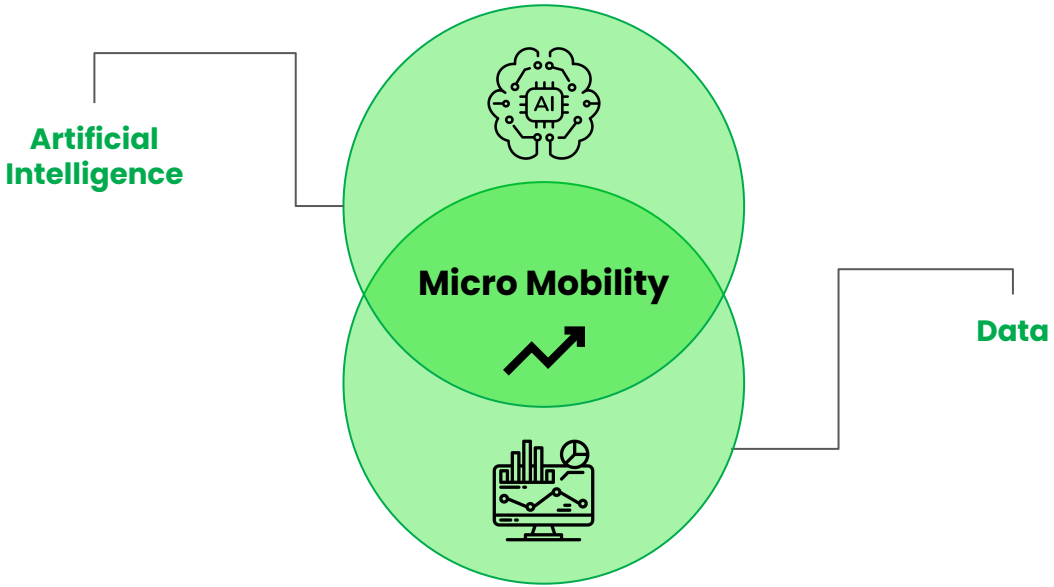
So, what’s next for micro mobility?

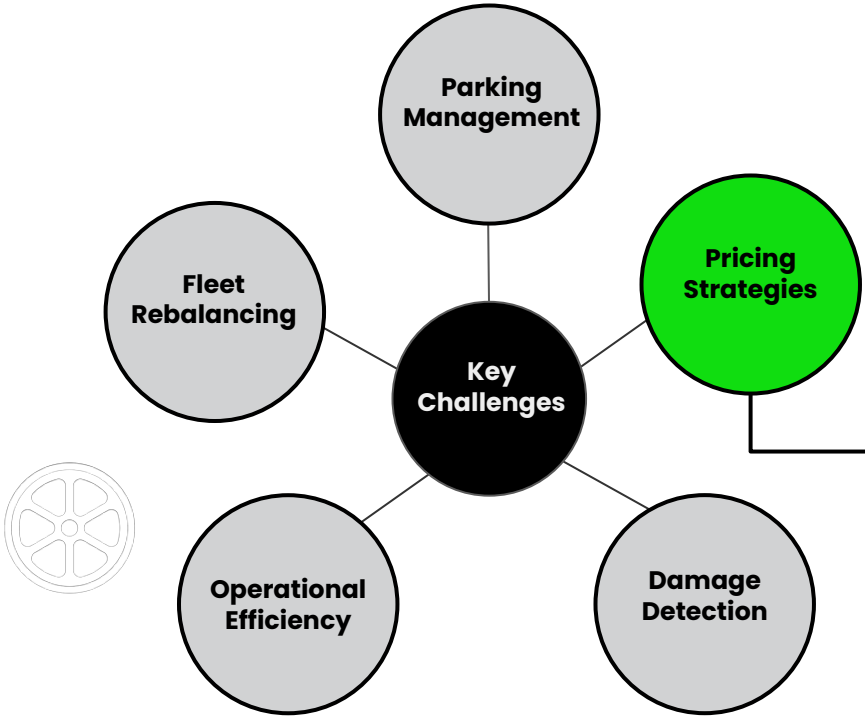
So, how do we achieve this?

Micromobility's current growth pressures companies to optimize their cost structures to remain competitive.

Traditional cost optimization methods, such as **manual route planning** and **static pricing models**, are often **slow, inflexible, and unable to adapt to the industry's dynamic nature.**

Artificial intelligence (AI) and data-induced **machine learning (ML)** can revolutionize the industry by providing a more **efficient, flexible, and adaptable way** to optimize cost strategies.



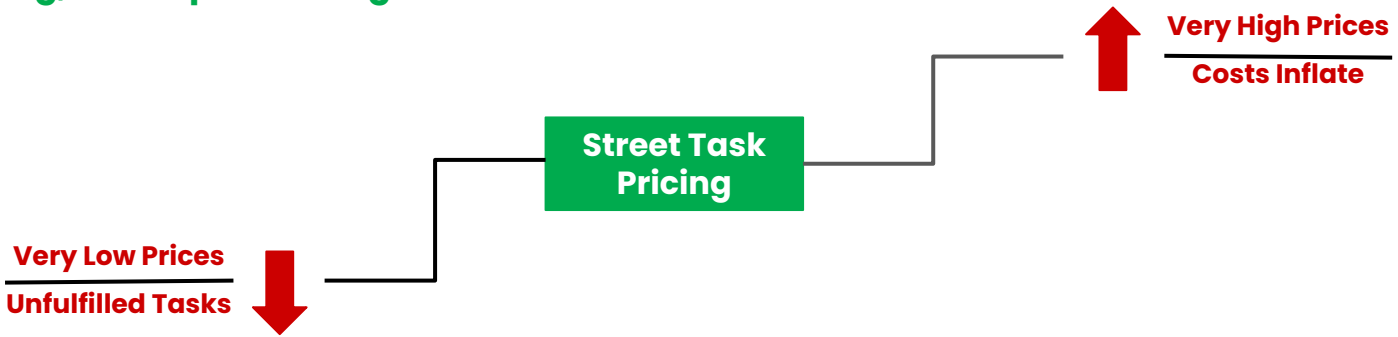


Leveraging AI to optimize real-time pricing for street-based tasks

It's a transformative period in the micro mobility sector with AI & Data making urban transport smarter and more efficient.

Why Pricing Matters in Micro Mobility?

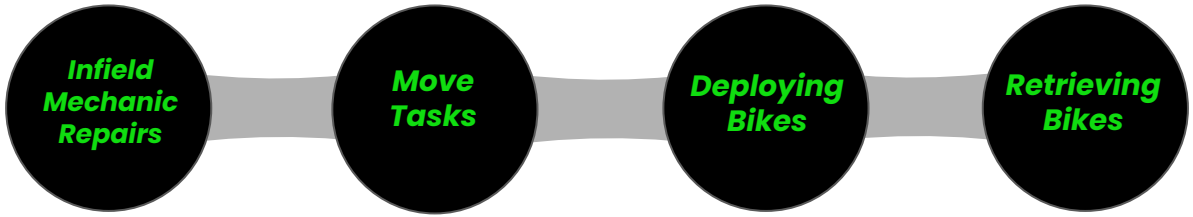
- Effective pricing in micro mobility is about **striking the perfect balance between profitability and operational efficiency**, ensuring both the business and the customer benefit.
- While it may seem straightforward, even **slight miscalculations can lead to increased costs, inefficiencies, and missed opportunities**—ultimately impacting service reliability and overall growth.
- An optimized pricing strategy ensures seamless execution of **deployment, retrieval, tidying, and repositioning** tasks.



Understanding AI-Powered Street-Based Task Pricing

What is a street task?

Tasks that happen dynamically across a city like



Challenges of the Fixed-Pricing Model

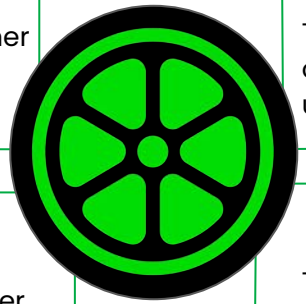
Micromobility is a data-intensive industry with vast information like route details and customer demand patterns. Traditional price optimization methods often fail to capture the data's complex nature and patterns, further the amount of data that can be manually analysed is limited, leading to missed opportunities and reduced efficiency.

Ignores Demand Shifts

Demand can shift based on weather conditions, time of the day and on regional basis.

Leads to Inefficient Task Prices

These discrepancies often lead to overpaying in low-demand areas, underpaying in high-density zones.



Doesn’t Account for Task Density

Some areas will have significantly larger number of tasks, while some pins don’t leading to inefficiencies in task allotment.

Doesn’t Factor in Labour Availability

Task prices don’t change based on worker availability. For instance, shortage in workers can lead to delays.

What does this mean?

Some areas become expensive to operate (overpaying); while others fail to attract workers (underpaying).

AI-Powered Dynamic Pricing

AI-driven pricing models **analyze live data** and **adjust prices dynamically** based on demand, supply, and various other factors. This works similarly to Uber's surge pricing but is applied to street tasks or gig-based services.

AI continually **fine-tunes pricing** to ensure that tasks are completed efficiently while maximizing profits for the service provider.

This dynamic adjustment is a **constant, self-learning process**, improving over time as more data is gathered and models become more refined.

Key Inputs for AI Pricing

Task Density	Task density is the number of tasks available in a specific area at a given time. High task density can drive prices up to attract more workers, while low density may lower prices to encourage task completion.
Worker Availability	The number of available workers in a given area. If there are fewer workers relative to tasks, prices increase to incentivize participation. Conversely, if there are many workers, prices may decrease.
Time Sensitivity	Urgent tasks may be priced higher to ensure faster completion, similar to how last-minute ride-hailing fares tend to be more expensive.
Past Data & Trends	AI analyzes past pricing patterns, seasonal trends, and peak hours to make informed pricing decisions.
Competitor Pricing	AI may also consider prices set by competitors to remain competitive and attract more workers.
Other Factors	Weather conditions, traffic congestion, or major events can influence pricing. For example, tasks in bad weather or high-traffic areas might be priced higher due to increased difficulty

How does AI-Powered Dynamic Pricing help?

1. **Labor Cost Optimization**: Adjusts for time, location, and wage fluctuations, preventing inefficiencies and labor shortages.
2. **Demand-Based Efficiency:** Aligns pricing with real-time demand, ensuring timely vehicle deployment and retrieval.
3. **Incentivizing Task Completion:** Prioritizes urgent tasks to prevent availability issues, revenue loss, and street clutter.
4. **Reducing Inefficiencies**: Prevents **overpaying in low-demand periods** and **underpaying during peaks**, optimizing resource allocation.
5. **Scalability & Profitability**: Keeps operational costs sustainable, supporting **profitable fleet expansion**

AI-Powered Dynamic Pricing Model

1. Aggregate Data

AI gathers massive amounts of **real-time data**, often from a variety of sensors like **GPS, weather services, traffic reports** and user inputs including **task requests, available workers**.

2. Predict Optimal Prices

AI analyzes past data and applies it to **forecast demand and pricing trends.** For example, it might use regression models to **predict how many tasks will be requested during a busy weekend** or use decision trees to **identify the optimal price adjustment** based on factors like weather or time of day.

3. Adjust Prices Real-Time

Once AI has gathered sufficient data and predicted the likely demand, it **dynamically adjusts the pricing**. The **system continuously checks for any shifts in factors** like task density or weather conditions and **can change prices almost instantaneously**.

4. Refine & Optimize

AI uses optimization techniques to ensure the **best balance between worker compensation, customer price expectations, and overall system efficiency.** This can be **constantly monitored and refined** with time to continuously improve operations.

Other Industry Applications

Uber's Surge Pricing

Uber uses AI-driven dynamic pricing to adjust ride fares in real time based on demand, supply, and external factors.

- **High Demand, Low Supply:** If rider demand shoots up in an area but there aren't enough drivers, Uber increases prices to encourage more drivers to accept rides.
- **Time-Based Adjustments:** Prices rise during peak hours when demand is naturally high.
- **Event-Based Pricing:** Uber detects major events and increases fares in anticipation of a surge in demand.
- **Weather Conditions:** Uber raises prices during bad weather periods since fewer drivers may be available, and demand tends to spike.
- **Competitor & Market Factors:** Uber's AI analyzes pricing strategies of competitors and adjusts rates to remain competitive while maximizing revenue.

Other Industry Applications

Amazon's AI Powered Dynamic Pricing

Amazon uses AI to adjust product prices in real-time based on factors like competitor prices, demand fluctuations, inventory levels, and customer behavior.

- **Competitor Pricing:** AI constantly monitors competitors' prices and adjusts Amazon's prices accordingly to stay competitive.
- **Demand Trends:** Prices increase when a product is in high demand and decrease when demand slows down.
- **Inventory Levels:** If stock is running low, prices may rise to extend availability, whereas surplus stock may lead to price drops.
- **Customer Behavior:** AI tracks browsing and purchase patterns to personalize pricing and discounts for individual customers.

Conclusion & Key Takeaways

Fixed Pricing Models are Inefficient: They do not factor in weather conditions, demand shifts, peak hours and task density, often leading to overpaying in low-demand areas and underpaying in high-demand zones.

AI Optimises Pricing: By dynamically adjusting costs based on demand, worker availability, and environmental factors, AI and Machine Learning can optimise prices for street task costs, improving operational efficiency while refining budget spends in the best possible manner.

Scalability & Profitability: By integrating AI into pricing strategies, micro mobility companies can scale operations profitably while maintaining a seamless user experience.


Thank You.