

ADAPTIVE THINKING IN PRACTICE

Energy & Mobility as a Service (EMaaS)

An integrated operating architecture for optimising enterprise mobility around one measurable outcome: **Integrated Cost per Kilometre**.

AUTHOR

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STRATEGIC PHILOSOPHY

Optimising Relationships Between Assets, Not Individual Assets

The Convergence Inflection Point

EMaaS is not driven by a single isolated technology. It becomes possible through the simultaneous maturity of eight market vectors.



EV Maturity & Costs

Falling battery pack prices and OEM scale creating reliable fleet platforms.

Dynamic Tariffs

Wholesale price volatility making fixed power contracts economically obsolete.



On-Site PV Economics

Solar carports reaching grid parity for commercial self-consumption.



AI-Driven EMS

Energy Management Systems capable of real-time multi-asset optimization.



Vehicle-to-Grid (V2G)

Two-way power flows turning stationary fleet idle time into grid revenue.



Subscription Finance

Shift from asset ownership (CapEx) to functional capability (OpEx).



Connected Telematics

Granular real-time data on vehicle, battery, and charger telemetry.



ESG & Compliance

Mandatory Scope 1 & 2 carbon reporting requiring verifiable energy tracking.

STRATEGIC INSIGHT

None of these trends creates EMaaS individually. Their convergence enables a completely new operating architecture.

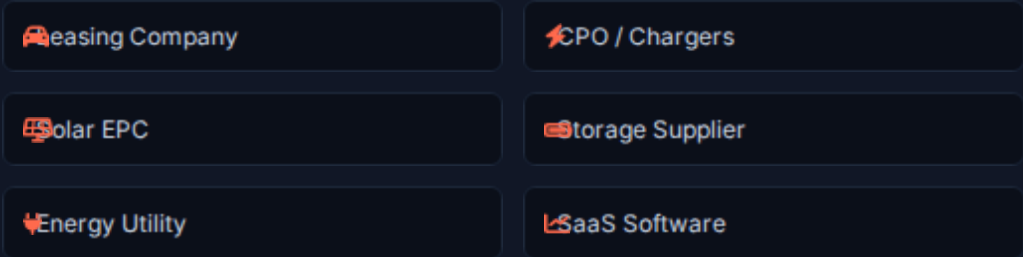
ADAPTIVE LABS FRAMEWORK

The Cost of Component Fragmentation

Customers typically buy mobility, energy, and infrastructure from isolated silos. Each supplier optimises its own product; nobody optimises total system performance.

Uncoordinated Supplier Silos

The customer is forced to act as the master system integrator across unlinked vendors:



SYSTEM FAULT

The Sub-Optimisation Trap

- ✗ Split Accountability: No vendor is responsible for system availability or cost per kilometre.
- ✗ Uncaptured Friction: High charging rates spike demand charges, destroying vehicle lease savings.
- ✗ Value Leakage: Rapid battery degradation caused by unmonitored fast charging lowers vehicle residual values.

Core Principle: Optimising every component independently does NOT optimise the whole system.

From Integration to Continuous Orchestration

Simple integration merely connects physical assets. Adaptive Thinking orchestrates real-time operational relationships between them.

TRADITIONAL THINKING

Asset-Centric Integration

Focuses on static connectivity and standalone product procurement.

- Goal: Procure cheaper vehicles & lower hardware costs
- Scope: Static point-to-point software integration
- Risk: Customer absorbs system orchestration risk

ADAPTIVE THINKING (EMAAS)

Relationship Orchestration

Focuses on dynamic, continuous feedback loops across the ecosystem.

- ✓ Goal: Relentlessly lower Integrated Cost per Kilometre
- ✓ Scope: Active, AI-driven cross-domain orchestration
- ✓ Accountability: Single operator delivers guaranteed performance

Energy & Mobility as a Service (EMaaS)

EMaaS consolidates mobility, infrastructure, energy, and finance into one subscription-based operating system.



One Commercial Model

Unifies vehicle leases, solar PV, chargers, battery storage, and dynamic tariffs into a single predictable operational subscription.



One Accountable Operator

Eliminates vendor finger-pointing. The EMaaS operator owns system design, financing, digital orchestration, and lifecycle guarantees.



One Optimisation Objective

Every operational and technological interaction is orchestrated to drive down the customer's Integrated Cost per Kilometre.

The Central Metric: Integrated Cost per Kilometre

TCO is merely an analytical framework. The customer ultimately purchases reliable, predictable cost per productive kilometre delivered.

RECURRING VISUAL ANCHOR

€ / Km

Integrated Cost per Kilometre

Total Integrated Mobility & Energy Cost divided by
Productive Kilometres Delivered.

Sub-Components of Integrated Cost / Km

Rather than managing isolated invoices, EMaaS continuously balances seven interdependent line items:

- > Vehicle Lease & Depreciation: Preserved through managed battery health.
- > Energy Generation & Tariffs: On-site solar + dynamic grid arbitrage.
- > Infrastructure Amortisation: Spread over extended operational lifecycles.
- > V2G Revenue Offset: Monetising idle battery capacity into power grid markets.

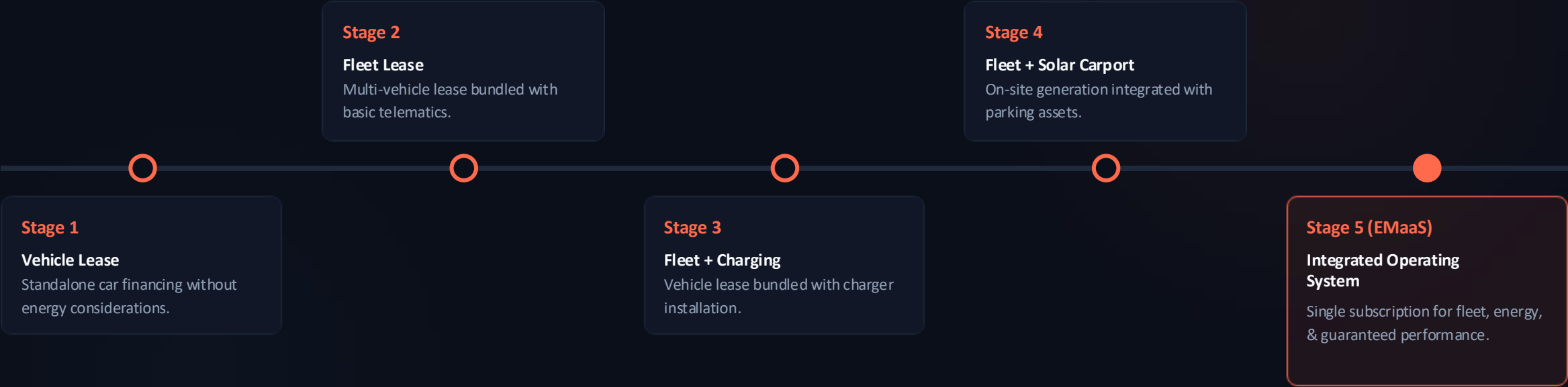
How One Decision Cascades Across the System

Adaptive Thinking proves that value is created by managing cross-domain dependencies rather than isolating technology components.



Moving from Asset Financing to Operating Capability

The financed object expands from individual vehicles to the customer's total capability to deliver mobility through energy infrastructure.



Solar Carports & V2G as Mobility Interfaces

Carports and EVs transform static real estate and idle vehicles into active energy generation and grid-balancing assets.

The Carport as an Operating Hub

Unifies PV generation, storage, and smart charging into one turn-key financed infrastructure layer:

-  On-Site Solar: Captures zero-marginal-cost clean electricity.
-  Stationary Storage: Shaves facility peak demand charges.
-  Smart Hub: Automated fleet power allocation.

Vehicle-to-Grid (V2G) Optionality

Transforms idle fleet vehicles into distributed energy storage resources:

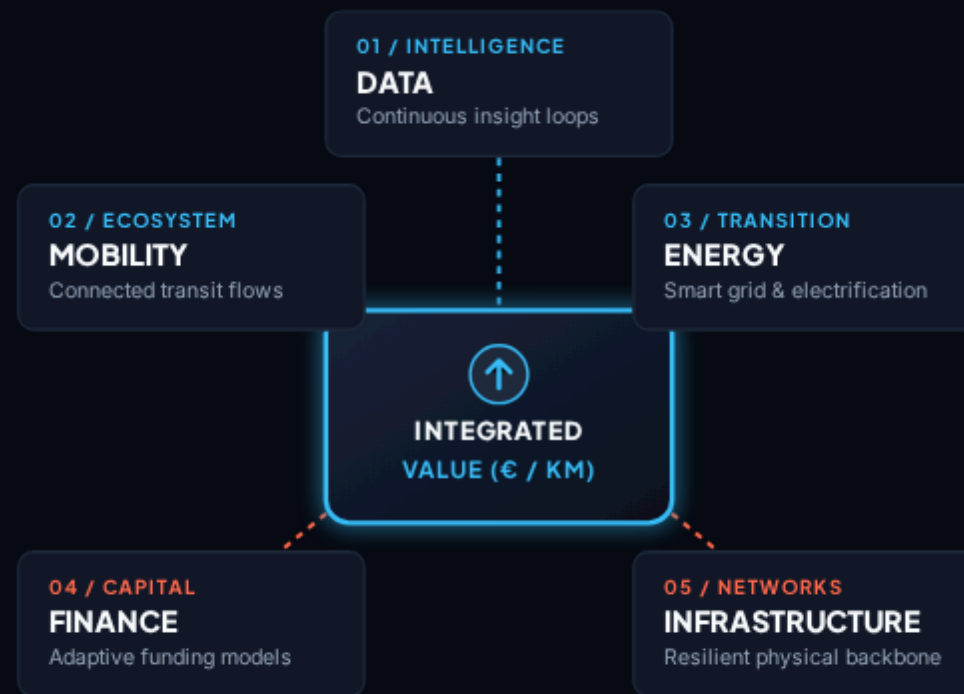
-  Ancillary Services: Earns revenue providing grid balancing.
Peak Shaving: Discharges into facility during high tariff hours.
-  Operational Resilience: Provides emergency backup power security.

The EMaaS System Architecture

The EMaaS model orchestrates five cross-domain layers into one integrated operating ecosystem.

-  Data Intelligence: Continuous insight loops and real-time EMS.
-  Mobility Ecosystem: Connected transit flows and fleet telemetry.
-  Energy Transition: Smart grid, solar PV, and battery storage.
-  Adaptive Finance: Subscription & outcome funding models.
-  Resilient Infrastructure: Physical carports & chargers.

Adaptive Thinking: Competitive advantage comes from orchestrating relationships across domain boundaries.



CROSS-DOMAIN SYSTEM ARCHITECTURE

EMaaS Requires an Ecosystem Operator

Market leadership belongs not to those with the cheapest hardware or tariffs, but to the operator capable of orchestrating four core capabilities.



Strategic Architecture

Designing cross-domain ecosystems and tailoring operating models to real-world customer usage patterns.



Financial Engineering

Combining long-term infrastructure funding and short-term vehicle leases into one predictable subscription.



Energy Expertise

Navigating dynamic tariffs, grid interconnects, solar PV generation, and battery storage arbitrage.



Digital Orchestration

Deploying AI-driven Energy Management Systems (EMS) to continuously optimise performance loops.

Implications for Business Leaders

Three strategic imperatives for CEOs, CFOs, and fleet operators transitioning to electric mobility.



1. Stop Procuring Products

Organisations procuring mobility, charging, and energy separately are merely optimising isolated components rather than overall business performance.



2. Orchestrate Ecosystems

Future competitive advantage will not come from cheaper cars or tariffs, but from orchestrating interactions across energy, mobility, and finance.



3. Adopt New Operating Architectures

EMaaS is not another fleet management or leasing option—it is a fundamental business architecture that turns mobility costs into predictable value.

ADAPTIVE LABS PERSPECTIVES | ISSUE 002 SUMMARY

"Future competitive advantage will not come from selling better vehicles or cheaper electricity. It will come from orchestrating an integrated ecosystem that continuously optimises the customer's **Integrated Cost per Kilometre.**"

Publication Series

Adaptive Labs Perspectives (Issue 002)

Strategic Thought Leadership

Adaptive Thinking (Optimising Relationships, Not Just Assets)