

Enabling Smart Mobility.

# Fluidtime



**A Kapsch Group Company** >>>

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## 15 Years of Digital Mobility Technology, Innovation and Leadership

### For Smart Cities and Regions

Vienna, Linz, Salzburg,  
Graz, Aachen, Helsinki,  
Stockholm, Aarhus,  
Bilbao etc.

### And MaaS Operators

UbiGo etc.

### Integrating Transport Modes

**2004**  
Public Transport

**2011**  
Integrated Mobility  
bike and car sharing,  
on demand transport  
taxi and ride hailing

**2018**  
Mobility Optimization

### Offering Services

- Mode Availability
- Journey Planning
- Real-Time
- Alerts and News
- Ticketing
- Booking
- Billing
- Payment
- Accounts
- Customer Profiles

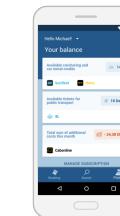
### Powering Apps



PTOs



Cities



MaaS  
Operators



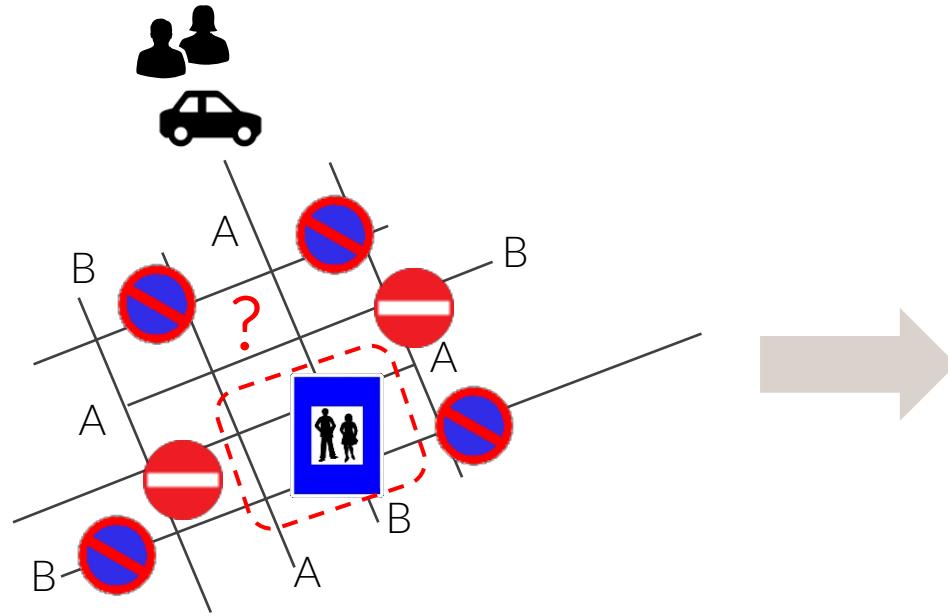
Pilots

### Passionate about User experience

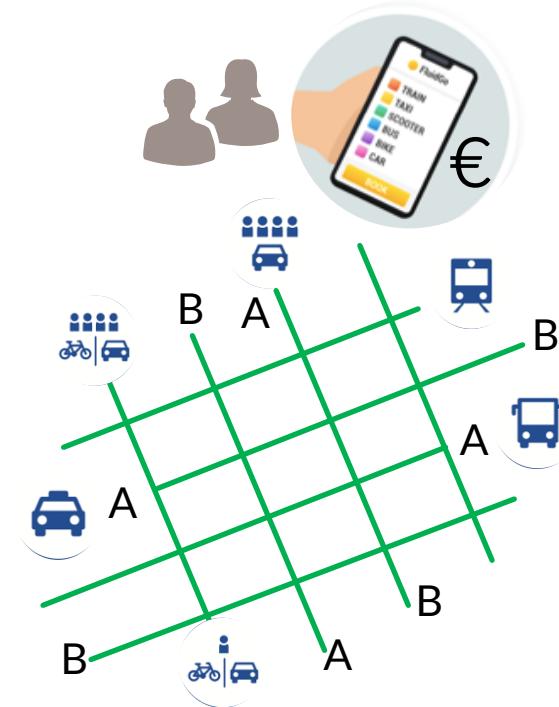
**2+ MIL** Download  
**40+ MIL** Service  
Requests  
**0,5+ MIL** Unique Users  
per Month



"Mobility as a Service" gives cities the opportunity to provide a growing network of public and shared transportation options.



Today: As complexity and cost for private car owners increases, travelling by private car is not "hassle free" any more.

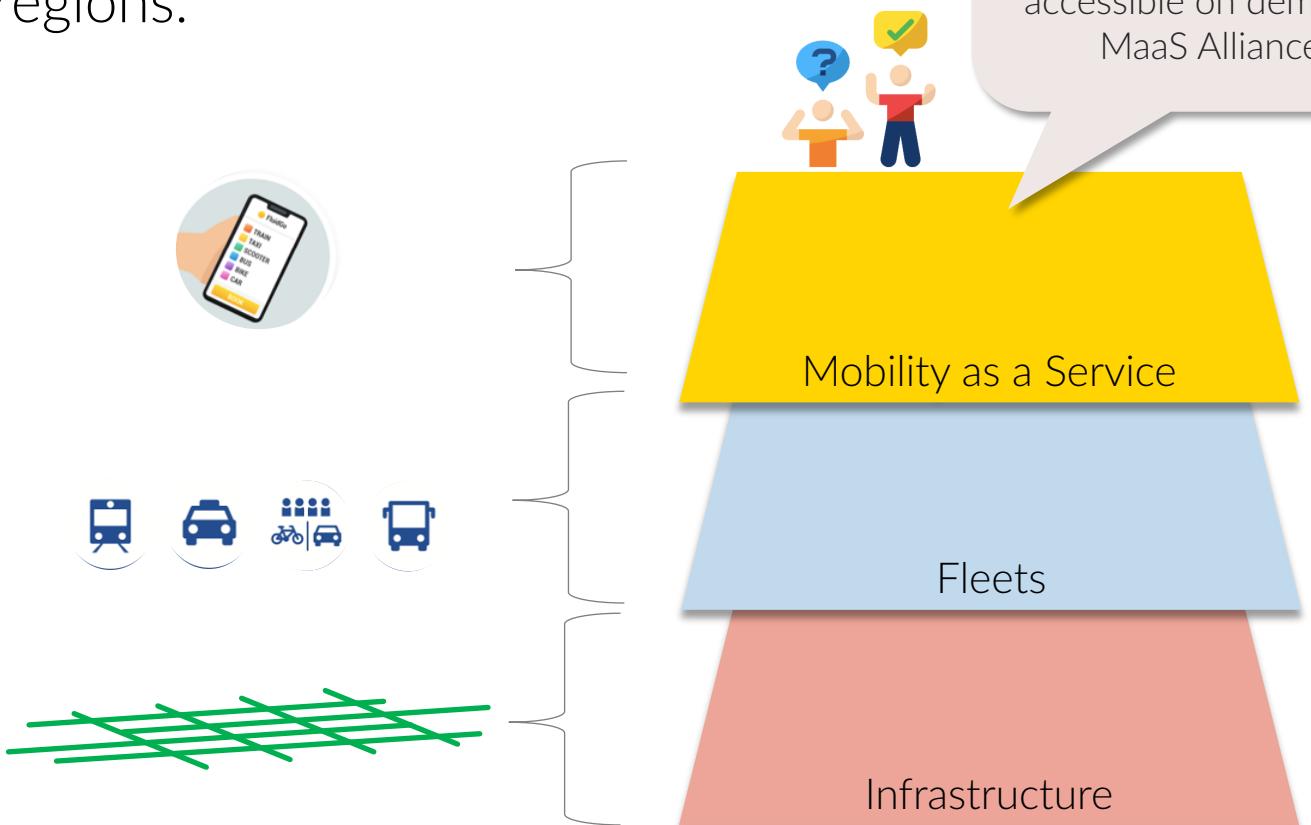
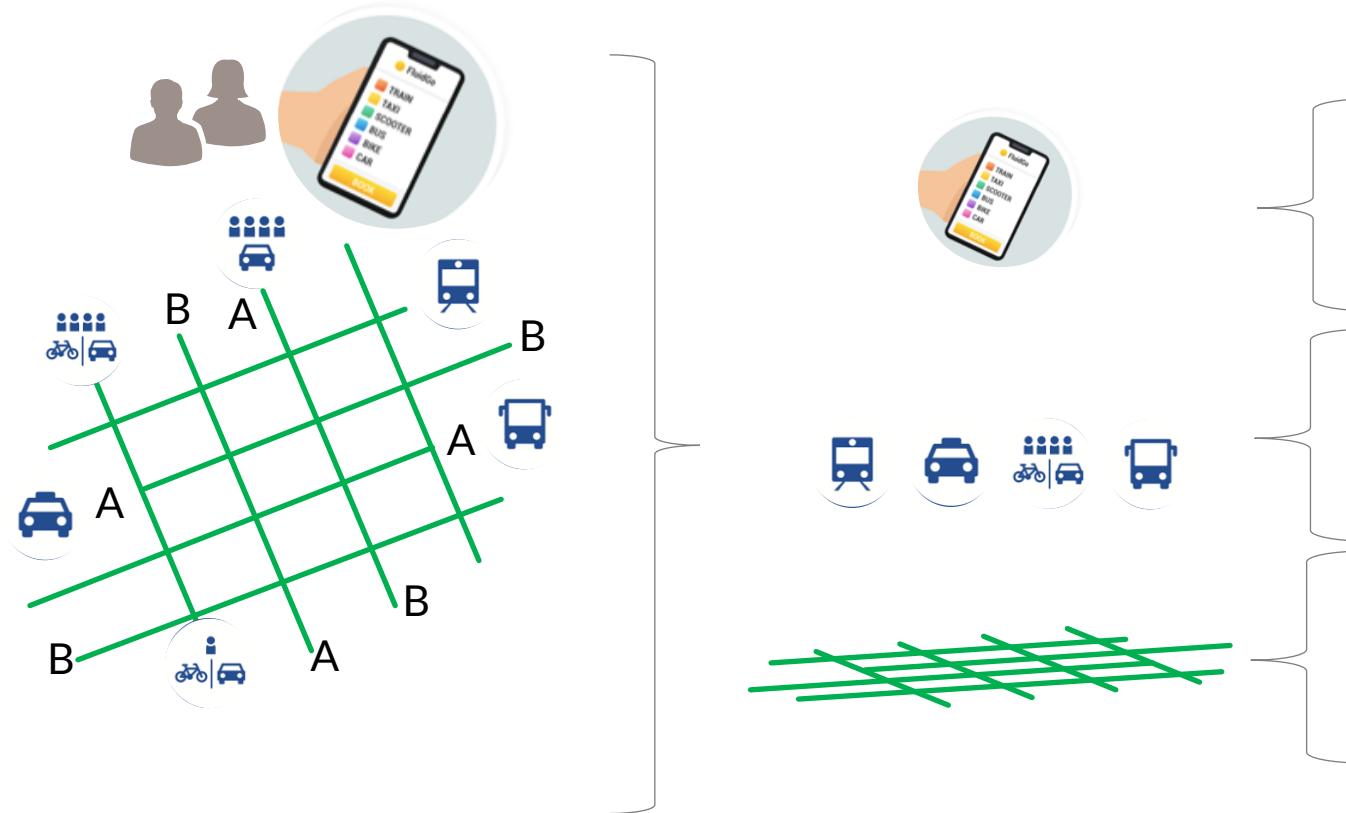


Tomorrow: More and more offerings create a dense mobility network giving travellers seamless travel options from all "A's" to all "B's".



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MaaS integrates various transport services, that use the physical infrastructure of cities and regions.



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## MaaS governance and orchestration



MaaS topology (Sochor, Arby, Sarasini, Karlsson, Holmberg)

Level 4

3

2

1

0

**Integration of societal goals**  
Governance & PP-cooperation

**Integration of service offer**  
Bundling/subscription - responsibility

**Integration of payment:**  
Single trip - find, book and pay

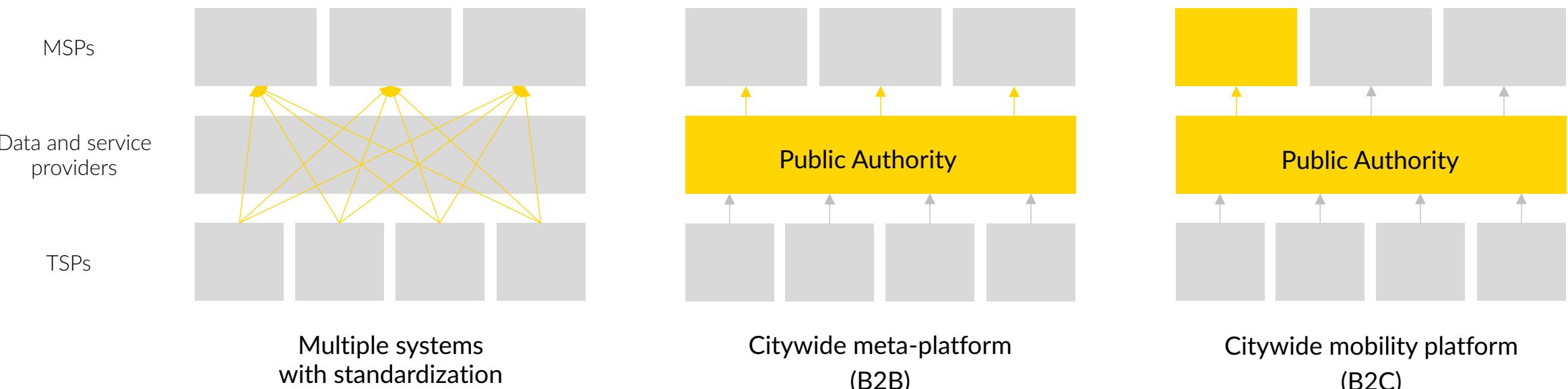
**Integration of information:**  
Multimodal travelplaner, price info

**No integration:**  
Single, separate services

Sochor, Jana & Arby, Hans & Karlsson, Marianne & Sarasini, Steven. (2017). A topological approach to Mobility as a Service: A proposed tool for understanding requirements and effects, and for aiding the integration of societal goals.



## Possible roles of public authorities



### Multiple systems with standardization

A city authority defines the standards and certifies the correct implementation

### Citywide meta-platform (B2B)

A city platform integrates transportation data over standard interfaces, standardizes it and provides it to MSPs (B2B). No customer interface is present.

### Citywide mobility platform (B2C)

A city platform integrates transportation data over standard interfaces, standardizes it and provides it to its own city MSP (B2C) while also permitting additional MSPs (B2B).



## Three sided platforms

### TSP - Transport Service Provider

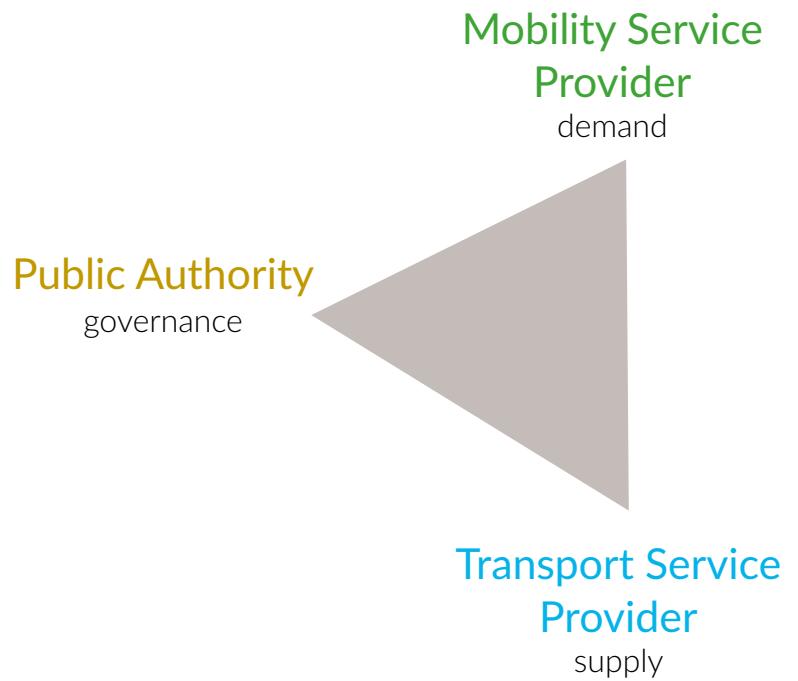
- Offer their transportation services via the platform.

### MSP - Mobility Service Providers

- Gain access to various transportation offerings through standardized APIs and processes.

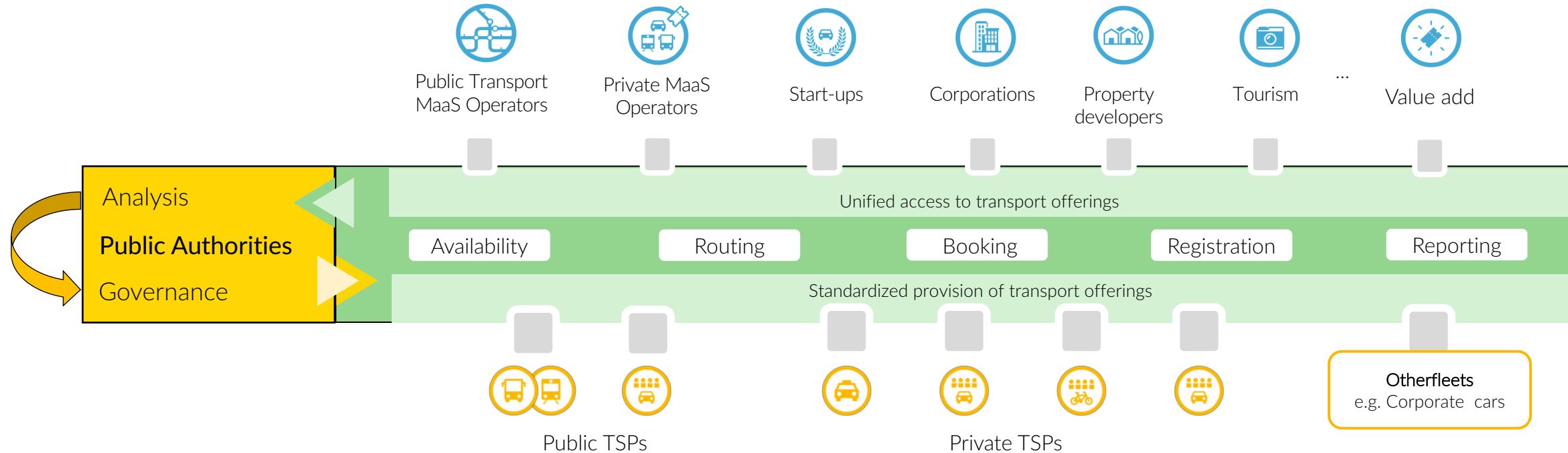
### Cities and governments

- Regulate in their role as platform provider access and supply via the platform with the goal to reach defined mobility policy goals.



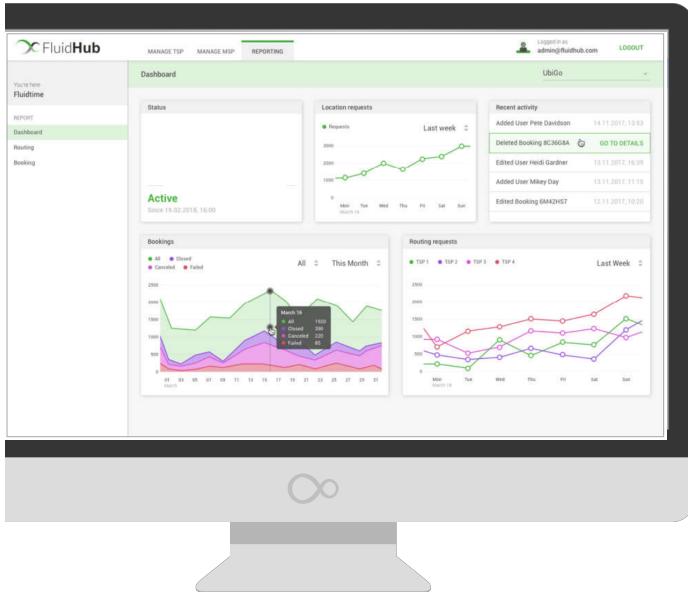


## FluidHub | MaaS platform technology | Orchestrating supply & demand





## Introducing FluidHub





## FluidHub | Provider Framework for standardization and integration

### Functionality

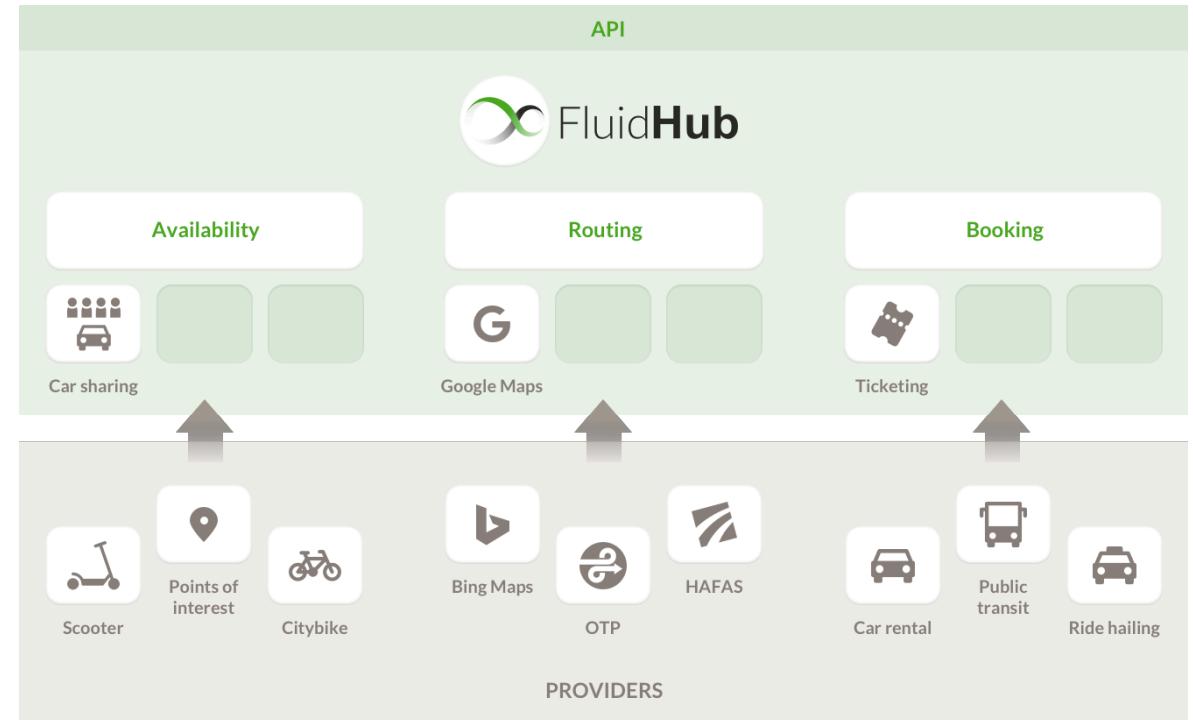
- Availability
- Meta-routing
- Booking
- Reporting & Analytics

### Integration of individual services

- Open API spec
- Partner support

### Reduction of complexity

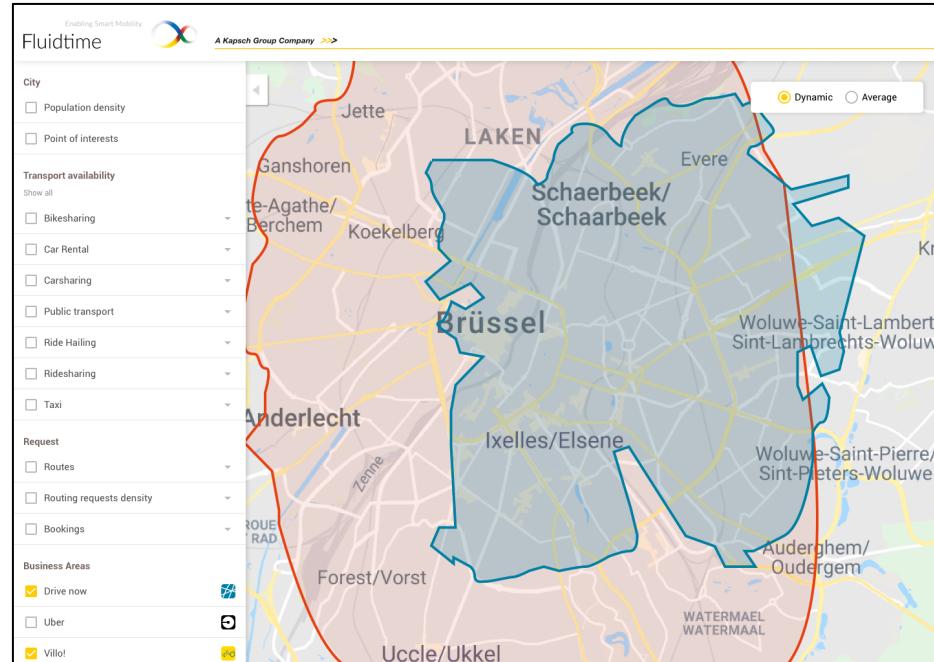
- Aggregation of relevant data
- Well-defined workflows
- Unified interfaces for integration



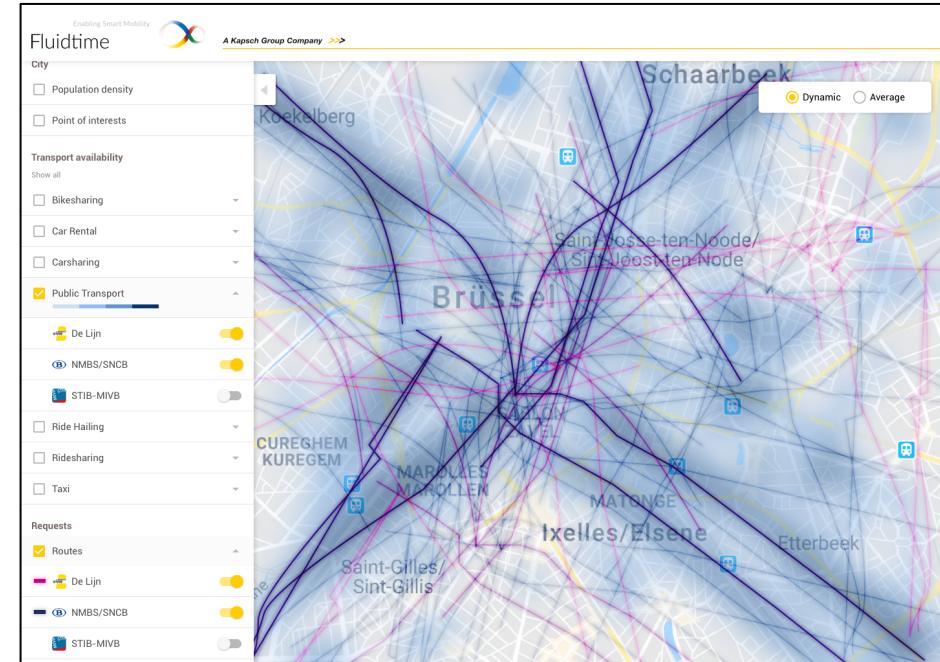


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## FluidHub | Analysing the mobility ecosystem



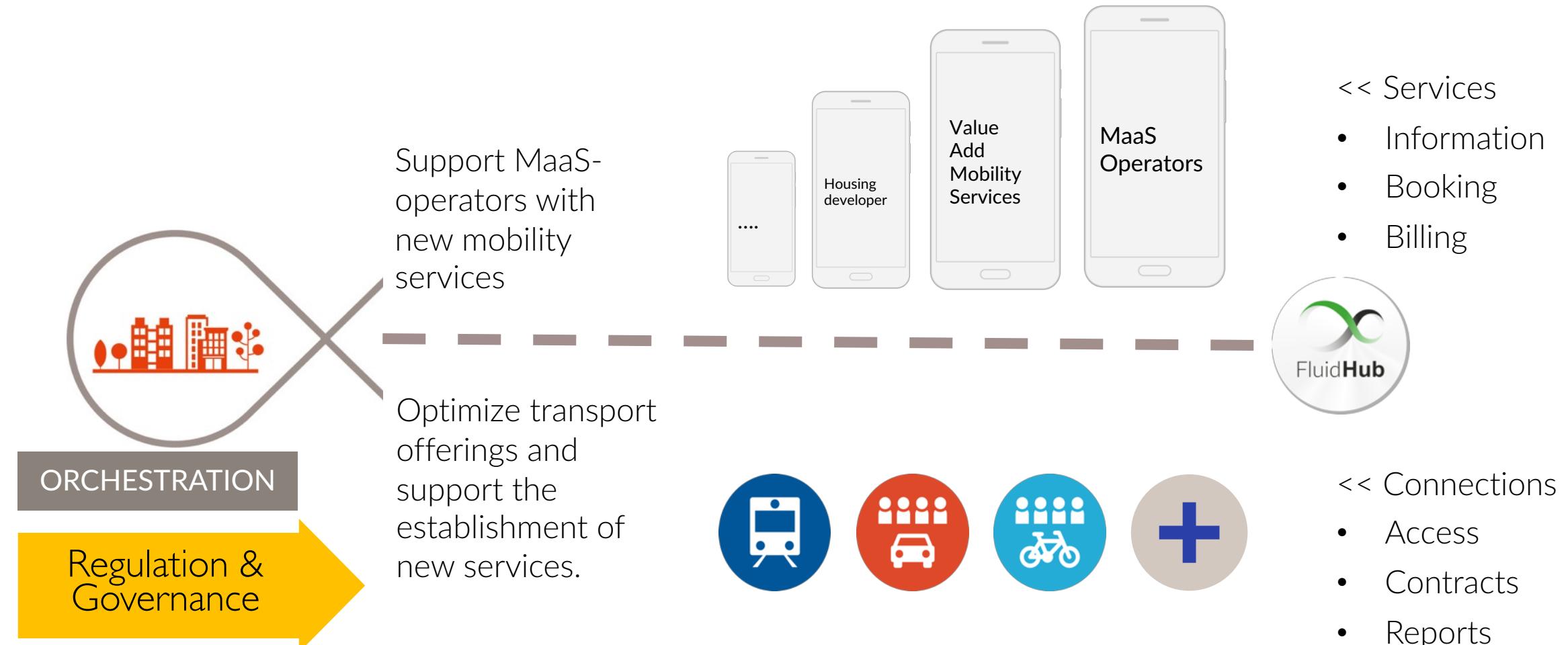
Regulate coverage & business areas,  
observe which zones get transport  
and govern the mix of offerings



Perform demand analytics to determine  
Infrastructure usage and plan investments



## Reference: Aarhus, Denmark | Building up a MaaS ecosystem



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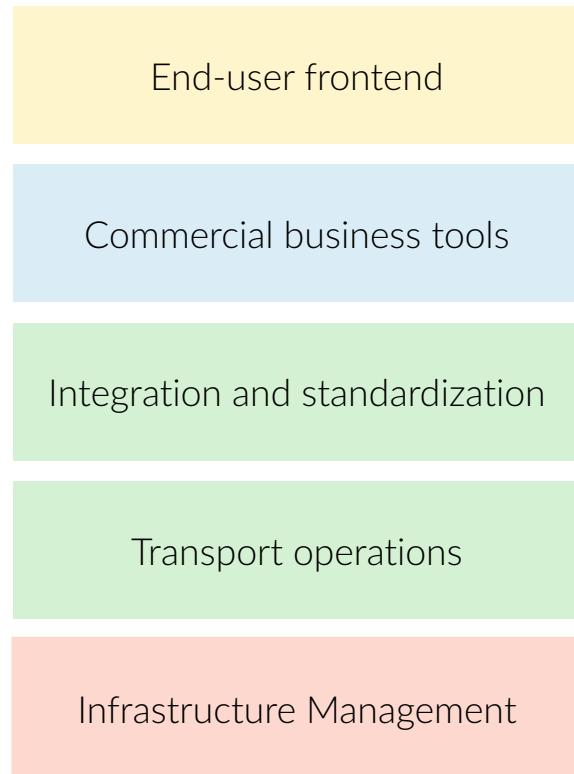
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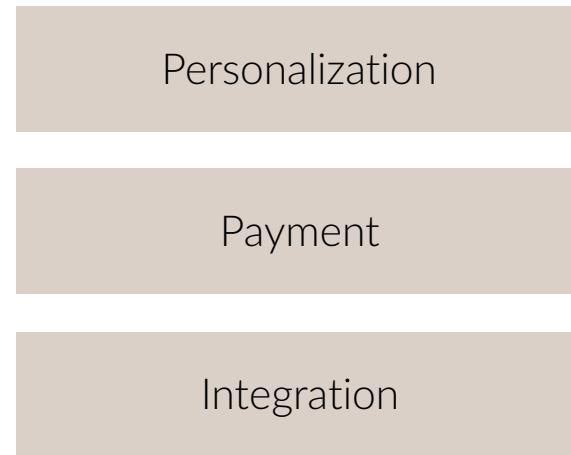
## MaaS B2C Solutions



## Technologies

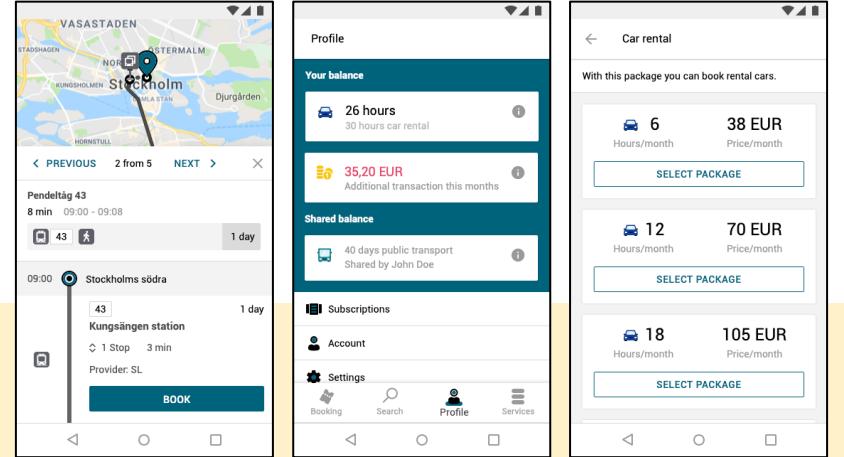


## MaaS Solution





## Reference: Sweden, Stockholm, UbiGo Service

Personalization	NATIVE APP	
Payment	BUSINESS TOOLS	
Integration	TRANSPORT PROVIDER INTEGRATION	

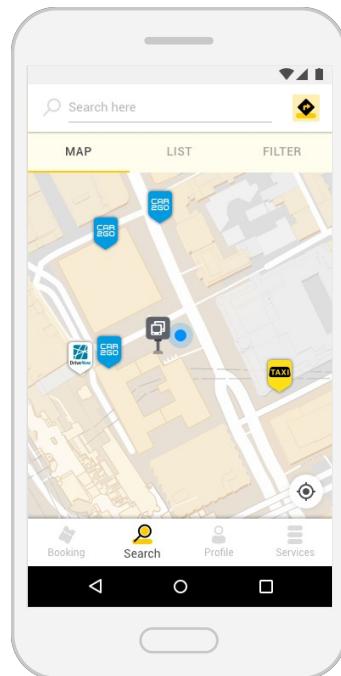


## Fluidtime White-label Service Offering

Personalization	FluidGo		<p><b>End-user frontend</b> The <b>white-label app</b> facing end users and helping them fulfill their mobility needs</p>
Payment	FluidBiz		<p><b>Business operation service</b> Services enabling Mobility Service Providers to quickly start business and operate efficiently. Perfect to manage usage of customers' mobility services incl. payments and invoices.</p>
Integration	FluidHub		<p><b>Mobility platform service</b> providing an intelligent, cloud-based software platform to integrate Transport Service Providers (e.g. metro, bus, tram, train, car-sharing, bike-sharing etc.) – depending on the mobility offers present in each city</p>

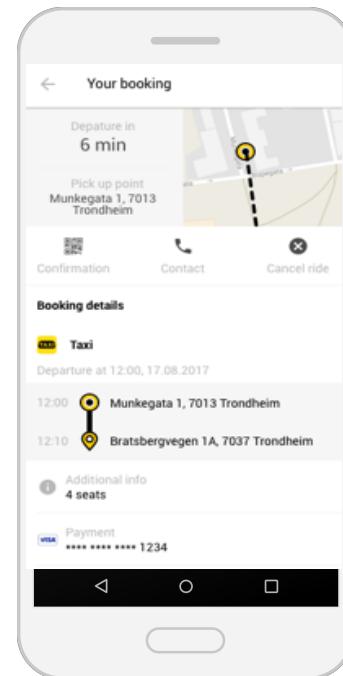


## FluidGo | white label mobility app



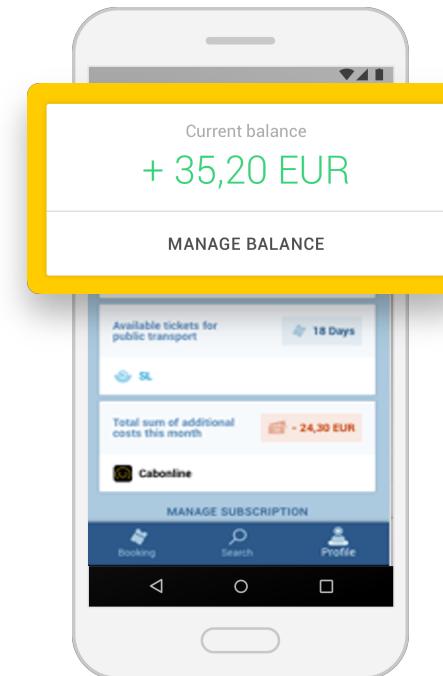
Nearby offerings

- Map view
- List view (sorted by distance)



Routing results and booking confirmation

- Transport mode
- Price and duration



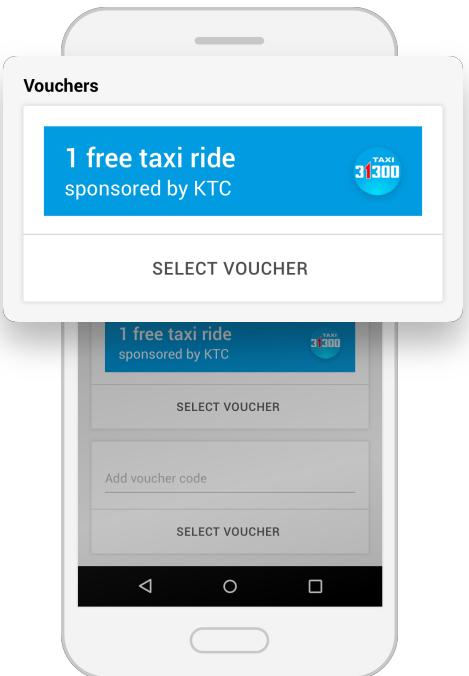
Mobility budget balance

- Always up-to-date budget overview
- Private / business account



Cost transparency & monitoring

- Differentiation private and business trips
- Easy allocation to cost centers



Support of rewards

- Voucher
- Special offers



## Integration layer for a collaborative MaaS ecosystem

### Transportation availability

- For all modes: public transport, car-, bike-, scooter sharing and rental, taxis, parking and charging, etc.
- Comprehensive info about vehicle or station, e.g. station monitor, vehicle state, charge, license plates, etc.

### Meta-Routing

- Allows multiple (also existing) routers to be used, each e.g. tailored to a specific purpose
- Enables seamless intermodal journeys
- Defined routing strategies determine how to best put together intermodal segments

### Booking

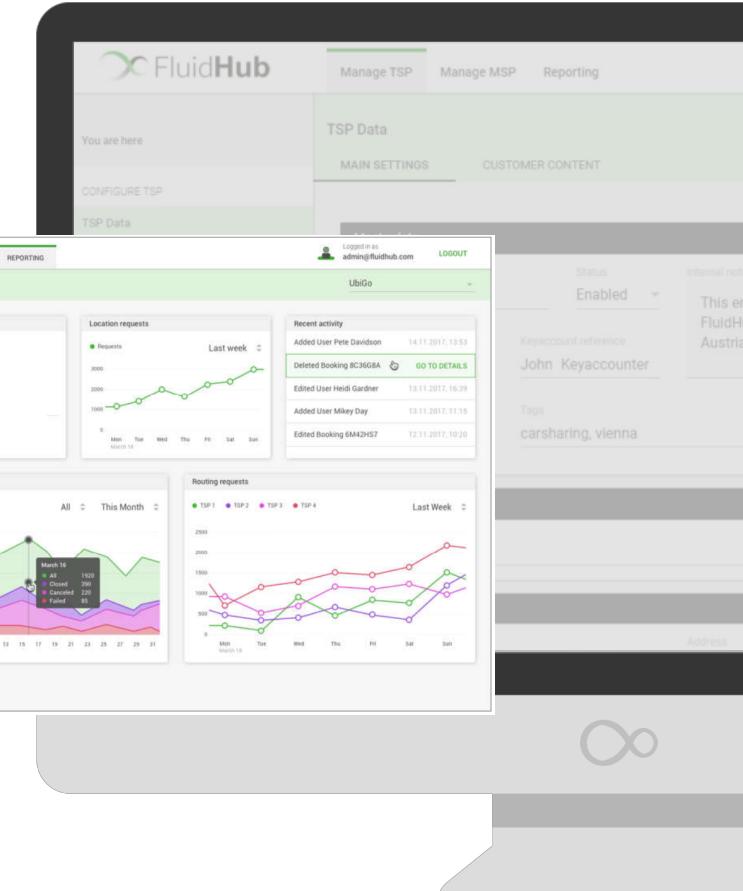
- Seamless booking of any offered mobility product or offering (must also be offered by TSP)
- Multiple booking strategies in place enabling various depths of booking integration

### Reports

- Comprehensive demand/supply data and analysis enabling ecosystem orchestration and transport optimization
- APIs and exports can be used to transfer data to e.g. data warehouses

### Enabling integrations

- Bidirectional integration to EcoTrafiX enabling the flow of multiple key data





Platform Operators use the admin back-office tool to manage TSPs and MSPs

## FluidHub TSP Management

The screenshot shows the FluidHub TSP Management interface under the 'Main settings' tab. It includes sections for Masterdata (with fields for Name, Short name, Timezone, and Status), Manage translations (with a Default Language set to English (default)), API settings (with checkboxes for BOOKING, INFO, LOCATION, and ROUTE), Products and Bookings (with sections for Product provider and Booking provider), and User Interface settings (with a color input set to #00FF2C). A 'SAVE' button is at the top right.

FluidHub | TSP | Main Settings

## FluidHub MSP Management

The screenshot shows the FluidHub MSP Management interface under the 'Transport Service Providers' tab. It includes sections for Adding Transport Service Providers, a list of providers (Drive Now, Zipcar, Car2Go, Public transport vienna), and options for Locations, Routing, Booking, and Information. A 'SHOW INFO' button is available for each provider. A 'SAVE' button is at the bottom right.

FluidHub | MSP | Main Settings



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# FluidHub offers two main touchpoints for MSPs

## FluidHub Mobility Service Provider API

Search... Get a booking

**Get a booking**  
Returns the details of a specified booking.

**AUTHORIZATIONS:** MSP  
**PATH PARAMETERS:**

- mspid **required** string *[a-zA-Z0-9\_]{1,16}* Id selecting the MSP configuration to use.
- identifier **required** string **non-empty** Non-enumerable identifier.

**HEADER PARAMETERS:**

- Accept-Language string *x-excludeInSignature: true* The desired language for response content. RFC 2616
- User-Reference string *x-excludeInSignature: true* Optional, arbitrary reference to relate certain API calls to users. This may be used for reporting and the grouping of bookings (e.g. query bookings by a user).

**Responses**

- 200 Result of the booking.
- 401 Authentication is required, but no credentials were provided.
- 403 Authentication succeeded, but access to the requested resource was refused.
- 404 The requested resource is not available.
- 500 General error.
- 503 Service is temporarily unavailable.

Documentation Powered by ReDoc

GET /{mspid}/bookings/{identifier}

**Response samples**

```
200 401 403 404 500 503
application/json
Copy Expand all Collapse all
```

```
{
  "booking": {
    "billingInfo": "...",
    "bookedProduct": "...",
    "bookingReference": "string",
    "customer": "...",
    "termsOfServiceUrl": "string",
    "sapId": "string",
    "userReference": "string"
  },
  "bookingId": "string",
  "completionReason": "COMPLETED",
  "cancelable": true,
  "createDate": "2019-03-01T10:30:32Z",
  "relevanceDate": "2019-03-01T10:30:32Z",
  "state": "PENDING",
  "updateDate": "2019-03-01T10:30:32Z"
}
```

[https://developer.fluidtime.com/api/msp\\_api.html](https://developer.fluidtime.com/api/msp_api.html)

## Admin back-office for reports and configuration

FluidHub

MANAGE TSP | MANAGE MSP

Hello, UbiGo

CONFIGURE MSP

Main settings

Customer Content

Transport Service Providers

OperatingArea

EDIT OPERATING AREA

Operating Area

The map displays the city of Vienna (Wien) and surrounding areas. It highlights several operating areas with blue shading, including the city center and parts of Leopoldstadt, Donaustadt, and Favoriten. The map also shows major roads and highways, such as A1, A2, A3, A4, S1, and S2, along with local streets and neighborhoods like Floridsdorf, Döbling, Hirschstetten, and Aspern. The Danube river is visible on the right side of the map.



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# FluidHub offers two main touchpoints for TSPs

## FluidHub TSP Connect API

Creates a new booking.

Always called, when the end-user wants to perform a booking at the TSP. The productReference from GET /products is required for this.

**AUTHORIZATIONS:** MSP  
**HEADER PARAMETERS**

→ Accept-Language string  
The desired language for response content. RFC 2616

**REQUEST BODY SCHEMA:** application/json

additionalBookingData object (AdditionalBookingData)  
Additional data for a request object to book a product.

product object (BookingRequestProduct)  
Reference to a bookable product, optionally with add-ons.  
**product** required

**Responses**

- ✓ 200 OK
- ✗ 400 The provided input parameters are not valid.
- ✗ 401 Authentication is required, but no credentials were provided.
- ✗ 403 Authentication succeeded, but access to the requested resource was refused.
- ✗ 404 The requested resource is not available.
- ✗ 409 The provided data is conflicting or would result in a conflict if applied.
- ✗ 500 General error.

POST /bookings

**Request samples**

**Payload**

```
application/json
Copy Expand all Collapse all
{
  - *additionalBookingData: (
    + *customer: ( _ ),
    + *billingInfo: ( _ ),
    *corporateNumber: "string",
    *rateQualifierCode: "string"
  ),
  - *product: (
    *productReference: "string"
  )
}
```

**Response samples**

200 400 401 403 404  
409 500 503

**application/json**

```
Copy Expand all Collapse all
{
  *bookingId: "string",
  *userReference: "string",
  - *customer: (
    + *address: ( _ ),
    *drivingLicense: "string",
    *firstName: "string",
    *lastName: "string",
    *phoneNumber: "string"
  )
}
```

Not public yet.

## Admin back-office for reports and configuration

FluidHub

TSP BACKEND MSP BACKEND

You're here FluidShare

Dashboard

FluidShare 2 LOCATION GROUPS 1365 LOCATIONS TOTAL 153 ROUTING REQUESTS TODAY 6587 ROUTING REQUESTS MONTHLY

**Tags**  
Carsharing freefloating

**Integration levels**  
Level 1 Dynamic Information  
Level 2 Direct booking

CRM Link  
[crm.fluidtime.com/abcd1234](http://crm.fluidtime.com/abcd1234)

Primary contact  
[contact\\_fluidshare.crm.fluidtime.com](mailto:contact_fluidshare.crm.fluidtime.com)

Assigned MSPs  
UbiGo Stockholm



## FluidBiz | Commercial mobility management

### Customer Management

- Permit registration
- User request management
- Managing master-data

### Account Management

- Handling of bookings
- Handling of subscriptions to mobility products
- Bundling of tariffs, benefits and incentives as well as custom pricing
- Information about cost, routing, trip data

### Billing Management

- Preparing & sending invoices

### Payment Management

- Integrate payment as part of wages
- Enabling different payment models
- Performing the transactions through preferred payment channels



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Thank you

Michael Kieslinger

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MaaS – Political agenda or business case?  
May 16-17, 2019, Urania, Vienna

