

Optimising mobility via public-private co-operation, ecosystems and data standards

State of play in NLs so far

MaaS Alliance event with EP and EC

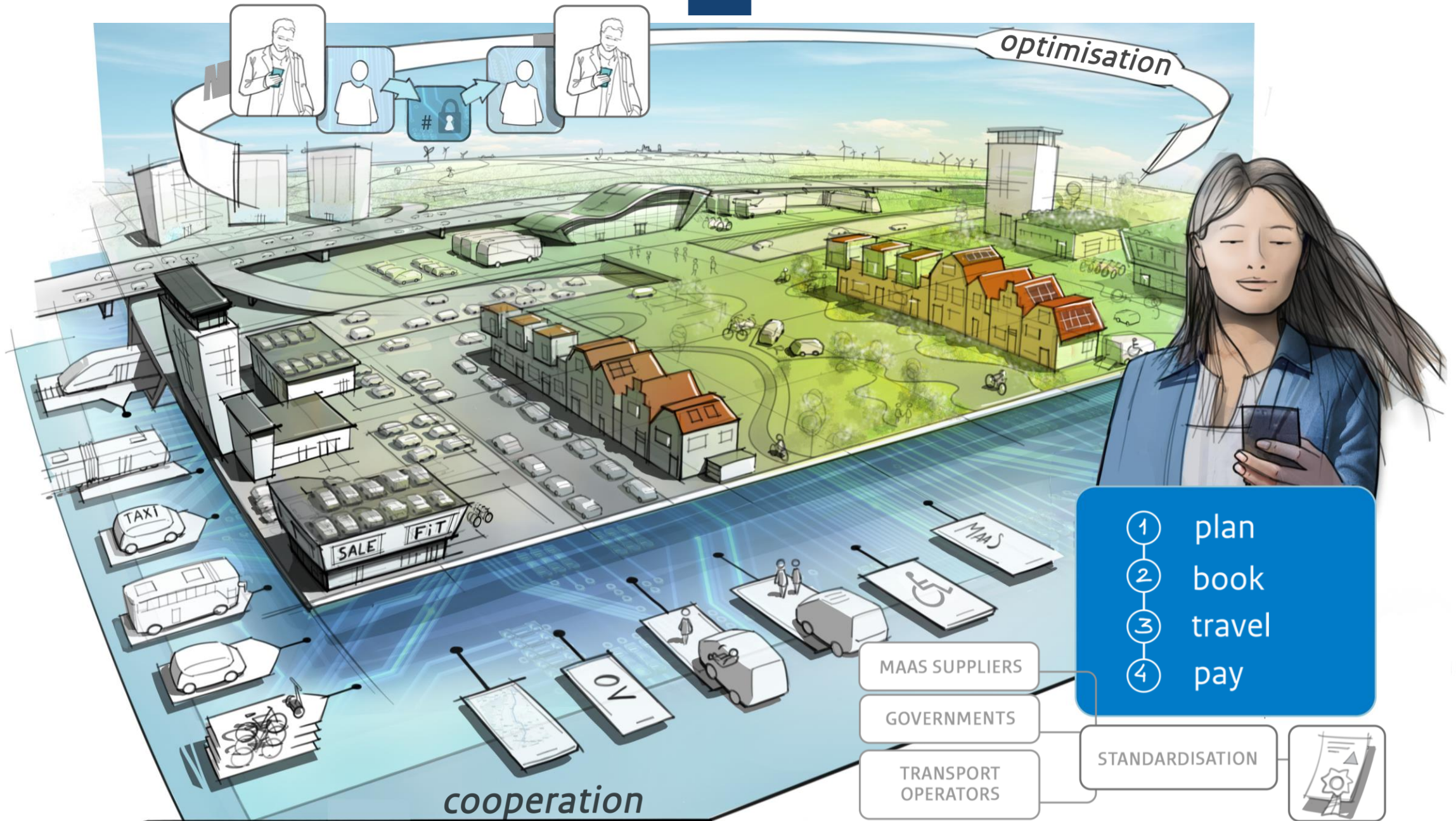
4 February 2021
10:00 – 11:30 CET

Eric Mink

MaaS Program, the Netherlands

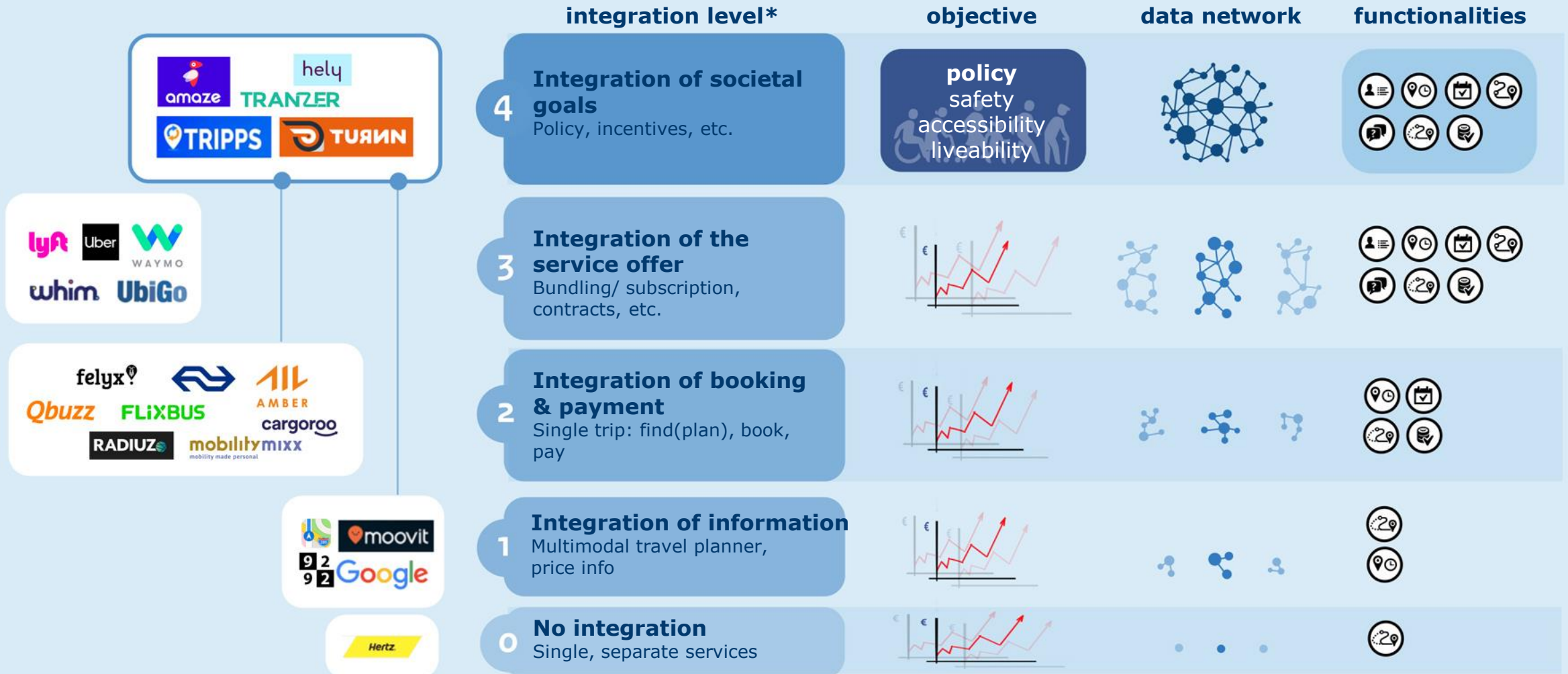
www.maas-programma.nl







Reaching policy objectives with MaaS



* by Sochor et al., Chalmers, 2017



Blueprint for open API standard for (shared) mobility with MaaS-providers

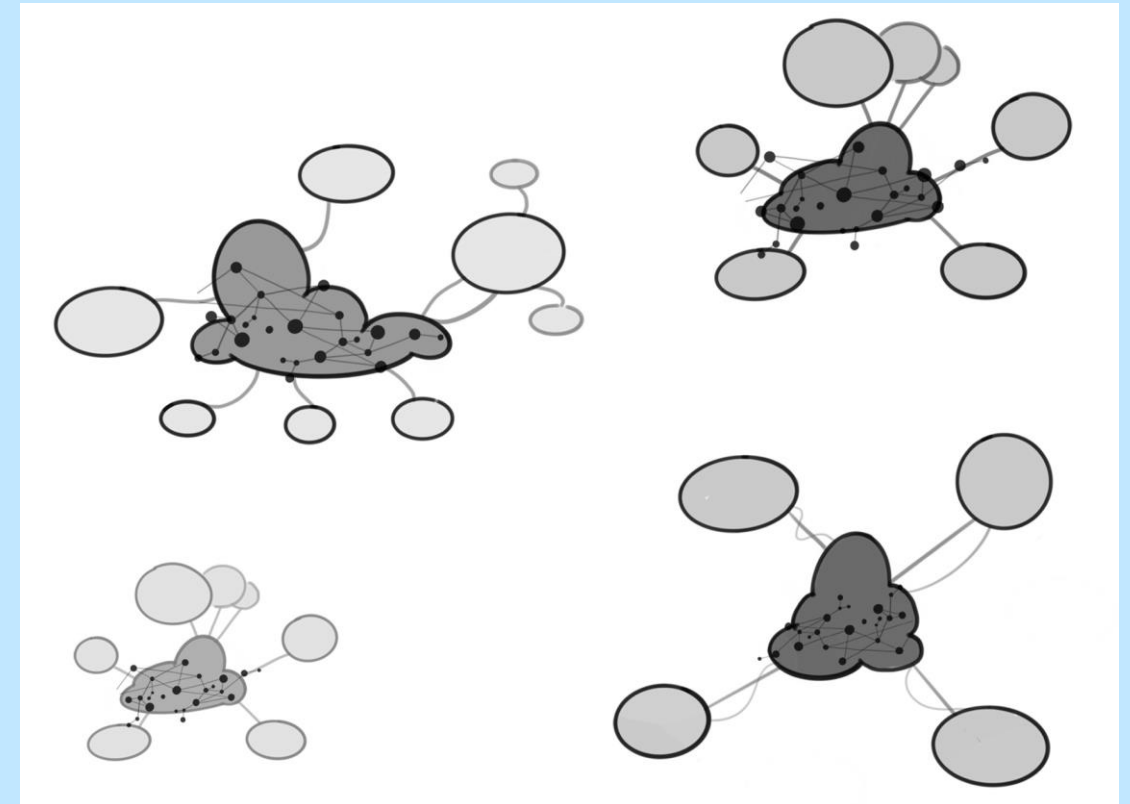
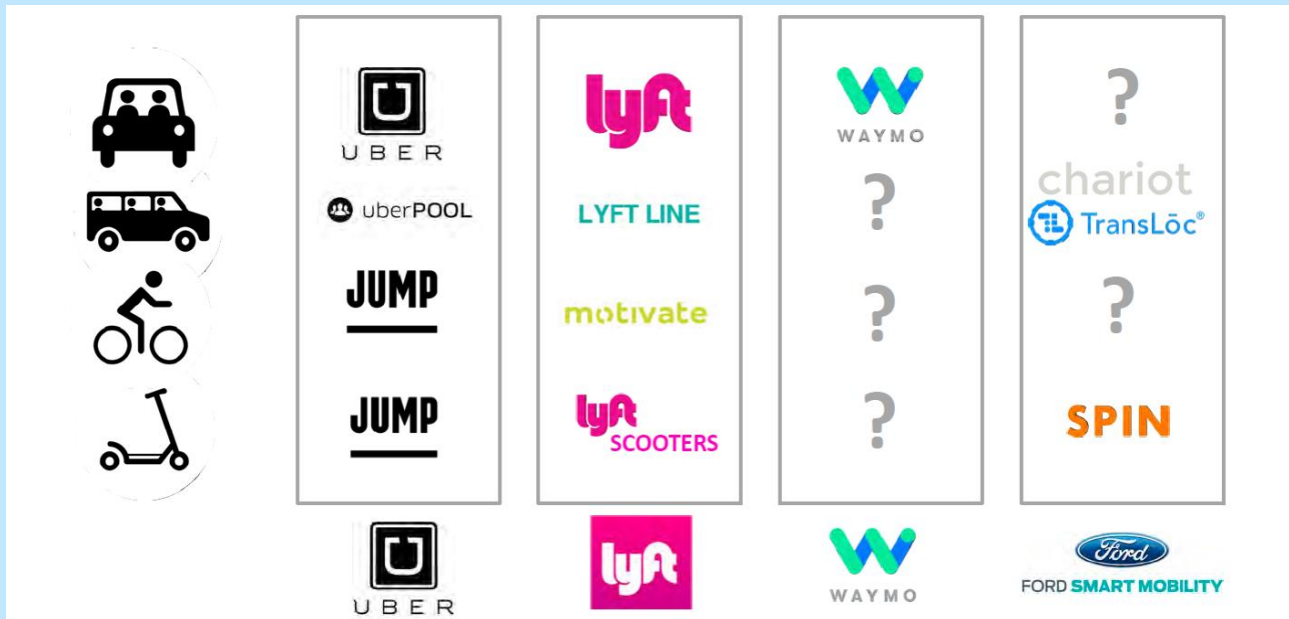
(success of PPP, possibly also standard for international ticketing in public transport, personal data vaults, etc.)

The diagram illustrates a cloud-based API ecosystem for Mobility as a Service (MaaS). A central cloud icon is connected to five circular nodes, each containing an icon representing a different aspect of the system: a user profile, a location pin, a booking icon, a pricing icon, and a system information icon. The background features a Swagger API specification for the 'General Transport Operator API Specification' (version 1.0.2). The specification includes endpoints for system information, asset availability, pricing, bookings, and system information models.

```
1 openapi: 3.0.0
2 # Added by API Auto Mocking Plugin
3 servers:
4   - description: SwaggerHub API Auto Mocking
5     url: https://virtserver.swaggerhub.com/efel85/GBFS/1.0.0
6 info:
7   description: General Transport Operator API Specification
8   version: "1.0.2"
9   title: General Transport Operator API Specification
10  contact:
11    email: edoardo.felici@ndw.nu
12  license:
13    name: Apache 2.0
14    url: 'http://www.apache.org/licenses/LICENSE-2.0.html'
15
16 tags:
17   - name: general information
18     description: general information about the system
19   - name: asset availability
20     description: gives information about the availability of assets
21   - name: pricing
22     description: gives pricing information
23   - name: booking
24     description: gives booking information
25
26 GET /bookings/
27 POST /bookings/
28 GET /bookings/{id}
29
30 POST /bookings/{id}
31
32 security:
33   - oauth2: []
34
35 /information/system_information:
36   get:
37     tags:
38       - general information
39     summary: describes the system
40     description: Describes the system including System operator,
41               contact info, time zone
42
43 responses:
44   200:
45     $ref: '#/components/schemas/system_information'
46   400:
47     description: bad input parameter
48
49 /information/station_information:
50   get:
```

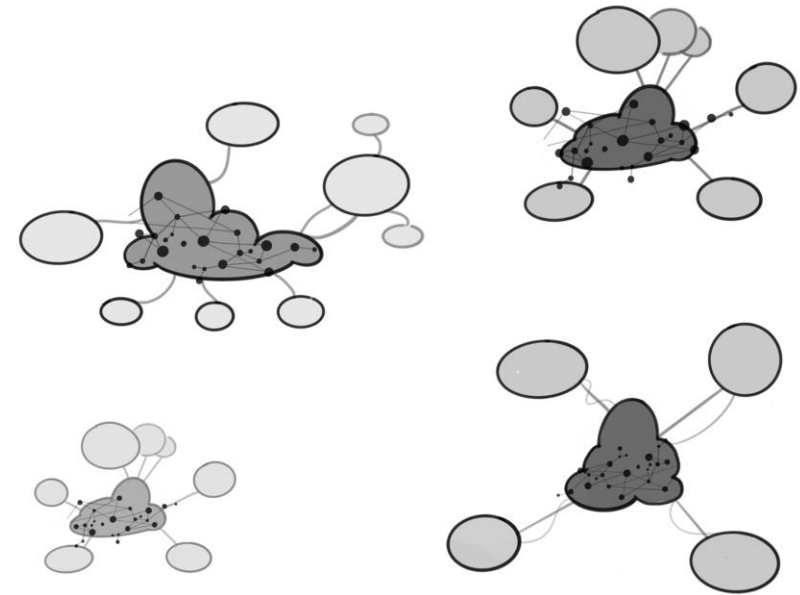
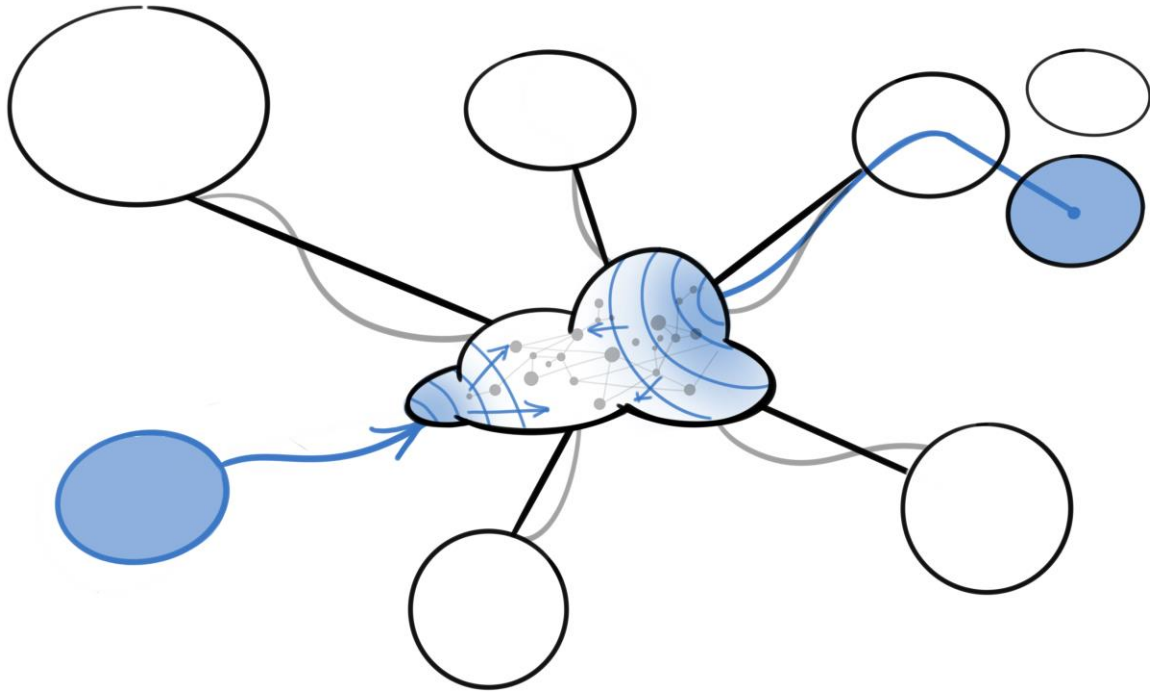


Towards walled gardens?....



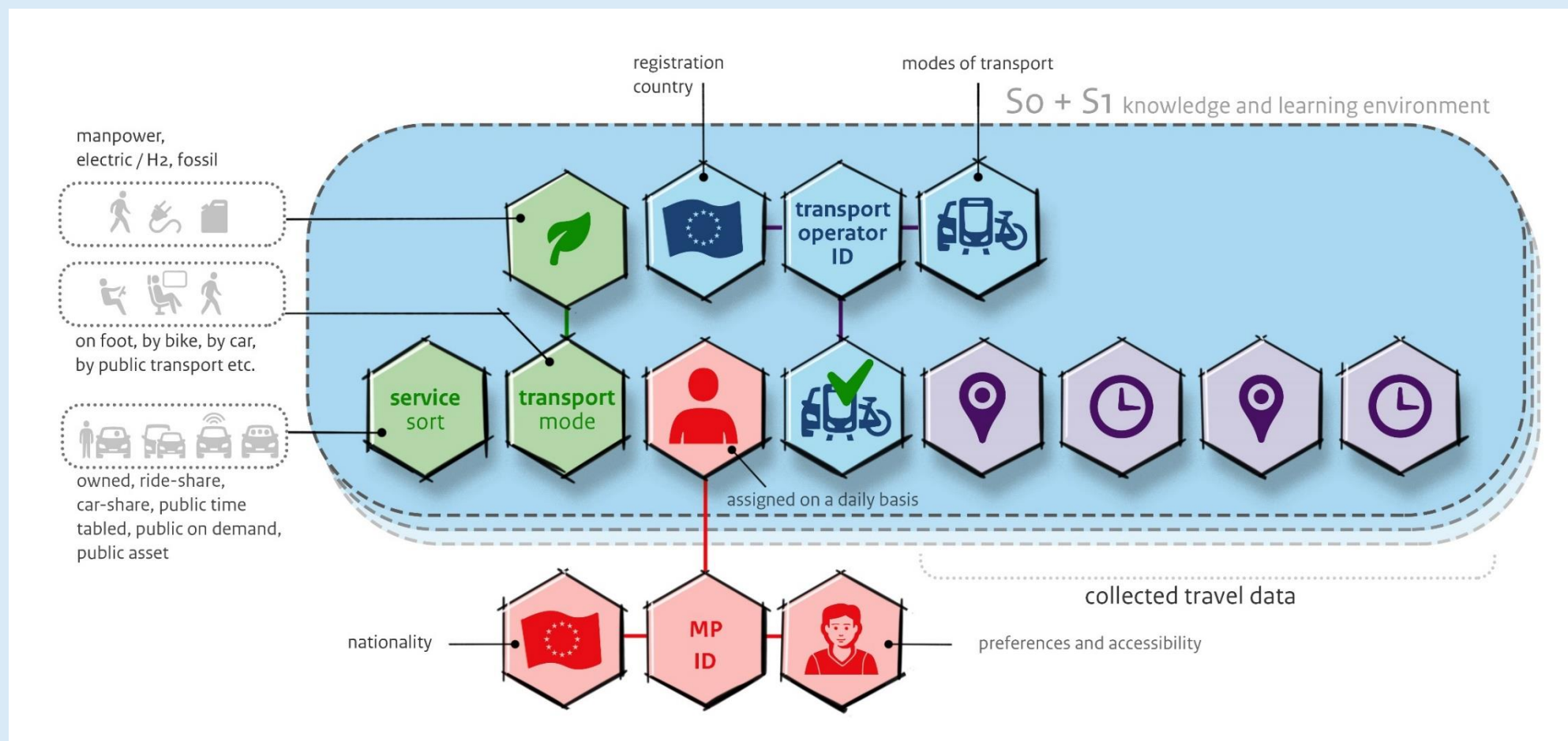


.... Or open ecosystem?





Measuring impact requires insight in data (data string for (realtime) monitoring impact)





Standardisation data flow for data transfer TO-MSP

- Standardised technical interface between **Transport Operator** and **MaaS Provider (TOMP-API)** to describe a MaaS journey
- Open API development in public-private collaboration
- Implemented in national pilots in the Netherlands
- International adoption
- Essential for level-playing-field
- See: <https://github.com/TOMP-WG/TOMP-API> with [Blueprint](#) and [WIKI](#) (FAQ's)

```
1 openapi: 3.0.0
2 info:
3   title: Transport Operator MaaS Provider API
4   description:
5     An API between MaaS providers and transport operators for booking trips and corresponding
6     <p>The documentation (examples, process flows and sequence diagrams) can be found at </p>
7   version: "0.9.0"
8   license:
9     name: Apache 2.0
10    url: "http://www.apache.org/licenses/LICENSE-2.0.html"
11
12 tags:
13   - name: planning
14     description: gives information about transport asset availability and pricing [free_bike_status and system_pricing_plans in GBFS].<p>The endpoints
15
16   - name: booking
17     description: a booking is the main object exchanged between MaaS-API]. <br>See also MaaSGlobal/
18
19   - name: trip execution
20     description: supports the complete trip execution process. It covers the trip from the starting
21
22   - name: general
23     description: general information about the system, stations, opening hours [from GBFS]
24
25   - name: payment
26     description: arranges financial settlements
27
28   - name: support
29     description: support for the user while the leg is ongoing
30
31   - name: TO
32     description: the Transport Operator's endpoints
33
34   - name: HP
35     description: the MaaS Service Provider's endpoints
36
37 # security. Allowed methods basic (in header: Authorization: Basic ZGVtbmQOUldzByZA==),
38 # bearer (in header: Authorization: Bearer <token>),
39 # Api-key (in header: X-API-Key: abcdef12345)
40 # OAuth2 and OpenId are also available
41 # The exact ways to authenticate will be described in a later version
42 security:
```




Maas-compliance for PSO-contracts in the NLs

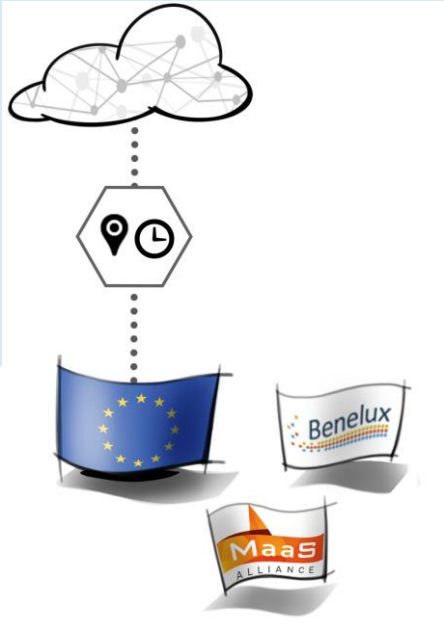
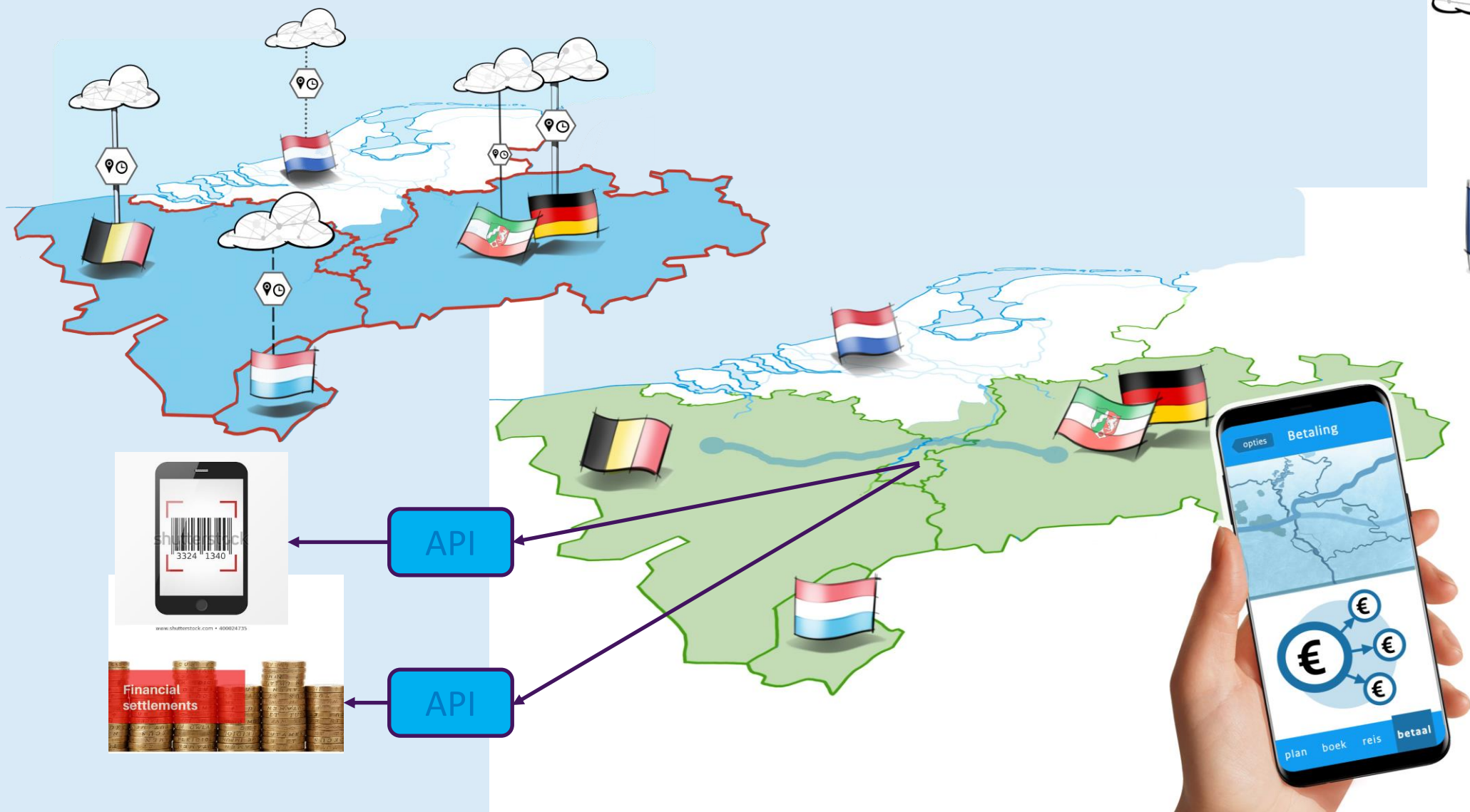
(to be implemented before 1-1-2022)

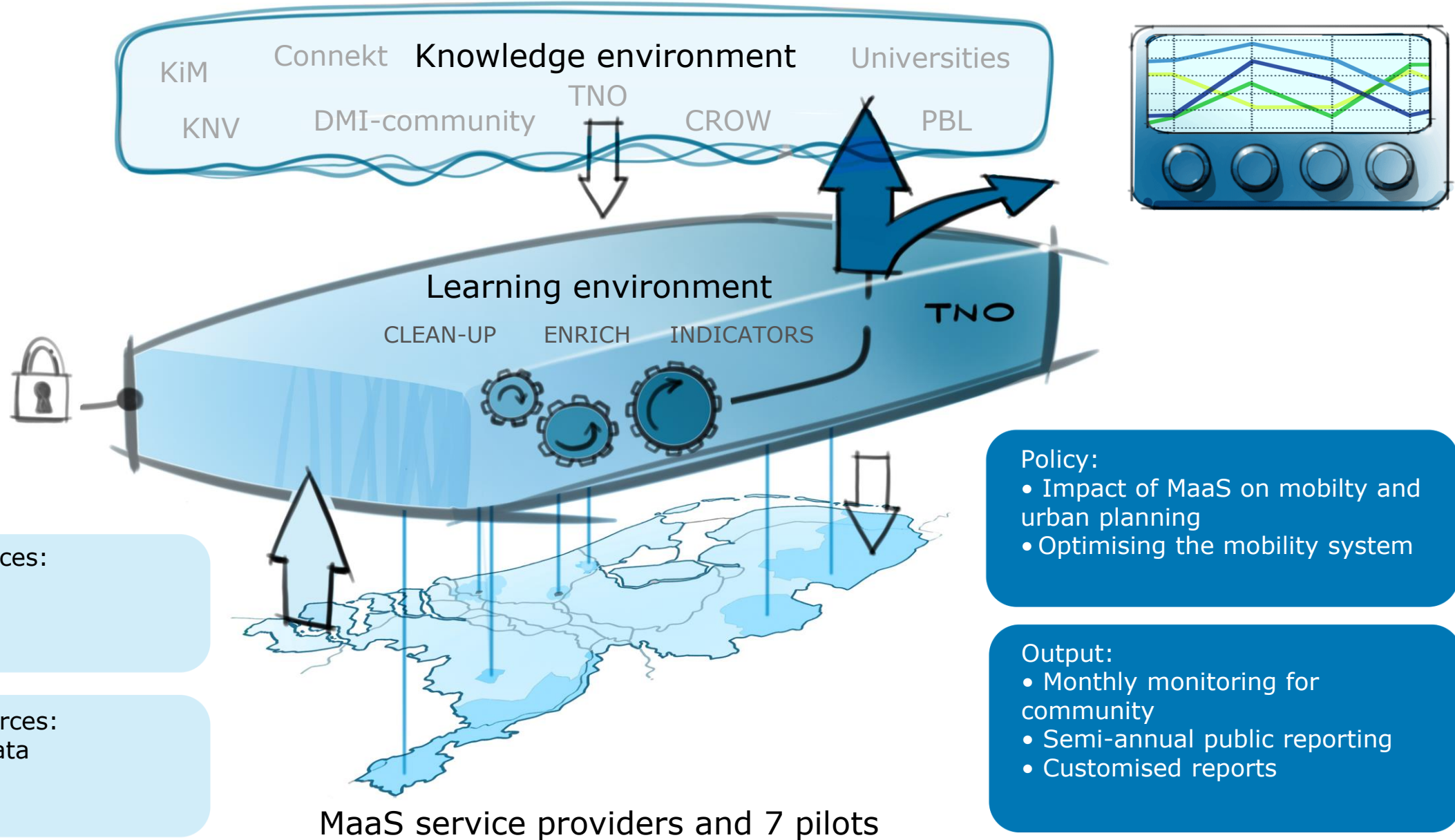
8 MaaS-obligations for PSO-contracts (Public Transport Operators):

1. Access to 3rd party ticket vendors, at least a reference ticket offer, without fee, to be determined by transport authority
2. Acceptance of tickets/services on new (digital) bearers
3. Reasonable tariff for API's
4. Cooperation on data-infrastructure of governments (tariffs, travel services)
5. Transparent conditions for API's
6. Conditions for contract termination
7. Non-discrimination at complaint handling
8. Timely referral of complaints chain-trip to 3rd parties



Cross-border ticketing based on ETC







Discussion

More information?

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www.maas-programma.nl

<https://github.com/TOMP-WG/TOMP-API>