

# travelspirit

## Whitepaper

### TravelSpirit Index of Openness for Mobility as a Service

June 2017

## Summary

TravelSpirit is championing the critical role of “open” in the delivery and development of scalable and sustainable new mobility services. This is necessary for the evolution of Mobility as a Service (MaaS) as a global resource rather than an individualised business.

The MaaS world is moving at a rapid pace and TravelSpirit needs to respond quickly. In our first white paper we set out the rationale for openness in MaaS.

This white paper sets out our Index of Openness for MaaS. Our simple and practical tool helps those developing MaaS systems understand their current position and their potential for developing an open MaaS model. This is an initial approach which we anticipate will be refined over time.

The TravelSpirit Index of Openness has been peer reviewed and we have undertaken an initial analysis of the West Midlands MaaS project. In addition, we have engaged a leading university, University College London, to review the audit the West Midlands assessment and set the challenge to the wider UK transport practitioner community to assess a number of other UK cities and transport companies operating in the UK.

This tool will be updated following the UCL review, and with input from the wider transport practitioner community. We invite contributions to validate and update the original model and identify gaps, with a view to updating the tool in September 2017.

The updated TravelSpirit Index of Openness for Mobility as a Service will be published in late 2017.

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TRAVELSPIRIT UK PROJECT BOARD



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TRAVELSPIRIT

JUNE 2017

# Why are we launching a new index?

As discussed in our recent White Paper: **Open or Closed? The Case for Openness in Mobility as a Service**, TravelSpirit is championing the critical role of “open” in the development and delivery of scalable and sustainable “Mobility as a Service” (MaaS) propositions for cities and transportation companies.

Our role in achieving this is multi-faceted. It includes leading policy debates and setting the agenda for realising the full pro-social and economic potential of MaaS. We are also an independent trusted advisor on addressing institutional and corporate cultural issues surrounding attitudes to innovation and the capability to adapt to disruptive technologies.

A key strength of the TravelSpirit community is the power of an enthusiastic and radical collective, joined together with common values and an appetite for change. Add to this the development of a global technology commons, the open Internet of Mobility, and we believe this is an unstoppable combination.

**By releasing this new Index of Openness for MaaS, we are calling on UK transport practitioners to collaborate with us.**

As a collective, we need to understand where there is the greatest opportunity to deliver open solutions to meet city and transport challenges, and enable the delivery of MaaS. This can be achieved relatively quickly and effectively by applying our Index of Openness assessment framework.

Our approach is technology and solution agnostic, and is about the technology being first and foremost an enabler of Mobility as a Service, growing the overall MaaS market to create sustainable and open revenue models for continued technological evolution.

With our motto of “think global, act local”, we will leverage global technical know-how, while developing local “eco-systems” and “supply-chains” of solution/service providers.

We will do this through working collaboratively on community engagement activities, and building licensing and business support functions to enable these solutions.

In return, our ask of partners – cities, regions, transport operators and advisors - is simple:

1. Work with us in an open and collaborative manner, with a strong willingness to try something new.
2. Join our community, united by our four core values:
  - **Universal Mobility as a Service:** We believe that an integrated, connected, multi-modal MaaS system provides the path to sustainable and equitable transportation for all.
  - **Open Innovation:** We believe in an open innovation model, that rewards sharing of information that serves others, even our competitors, and brings benefits to all.
  - **Global Community:** We believe that by connecting people - such as coders, business professionals and policy-makers - through a global network, we are better equipped to tackle the toughest of mobility and transport challenges
  - **Local Benefit:** We believe that our work must be grounded in its ability to demonstrate positive change by and for local communities and regions.

## PROGRESS SO FAR

The MaaS world is moving at a rapid pace and TravelSpirit needs to respond quickly. As a result TravelSpirit UK Project Board have:

- i. Released our first white paper, that champions the role of “open” in Mobility as a Service market development activity.
- ii. Developed, peer reviewed and published an open assessment framework for the TravelSpirit Index of Openness for MaaS.
- iii. Undertaken an initial analysis of the West Midlands MaaS project (See Case Study).

- iv. Engaged a leading university, University College London, to review the audit the West Midlands assessment and set the challenge to the wider UK transport practitioner community to assess a number of other UK cities and transport companies operating in the UK.

Using this initial work the wider transport practioner community can now:

- i. Validate and update the original model and assessment
- ii. Identify gaps
- iii. Propose practical interventions that TravelSpirit can assist with and document how this would contribute to the wider community
- iv. Assist with the implementation of interventions as invited
- v. Reassess cities following these interventions.

## OUR CALL TO ACTION

To consolidate this UK call to action, we propose that you to work with us on a future research paper to disseminate the results and communicate the benefits of the assessment framework to a global audience.

**We are looking for feedback and case studies of MaaS developments in the UK for this.**

Please contact us: [info@travelspirit.io](mailto:info@travelspirit.io)

# The TravelSpirit Index of Openness for MaaS Assessment Framework

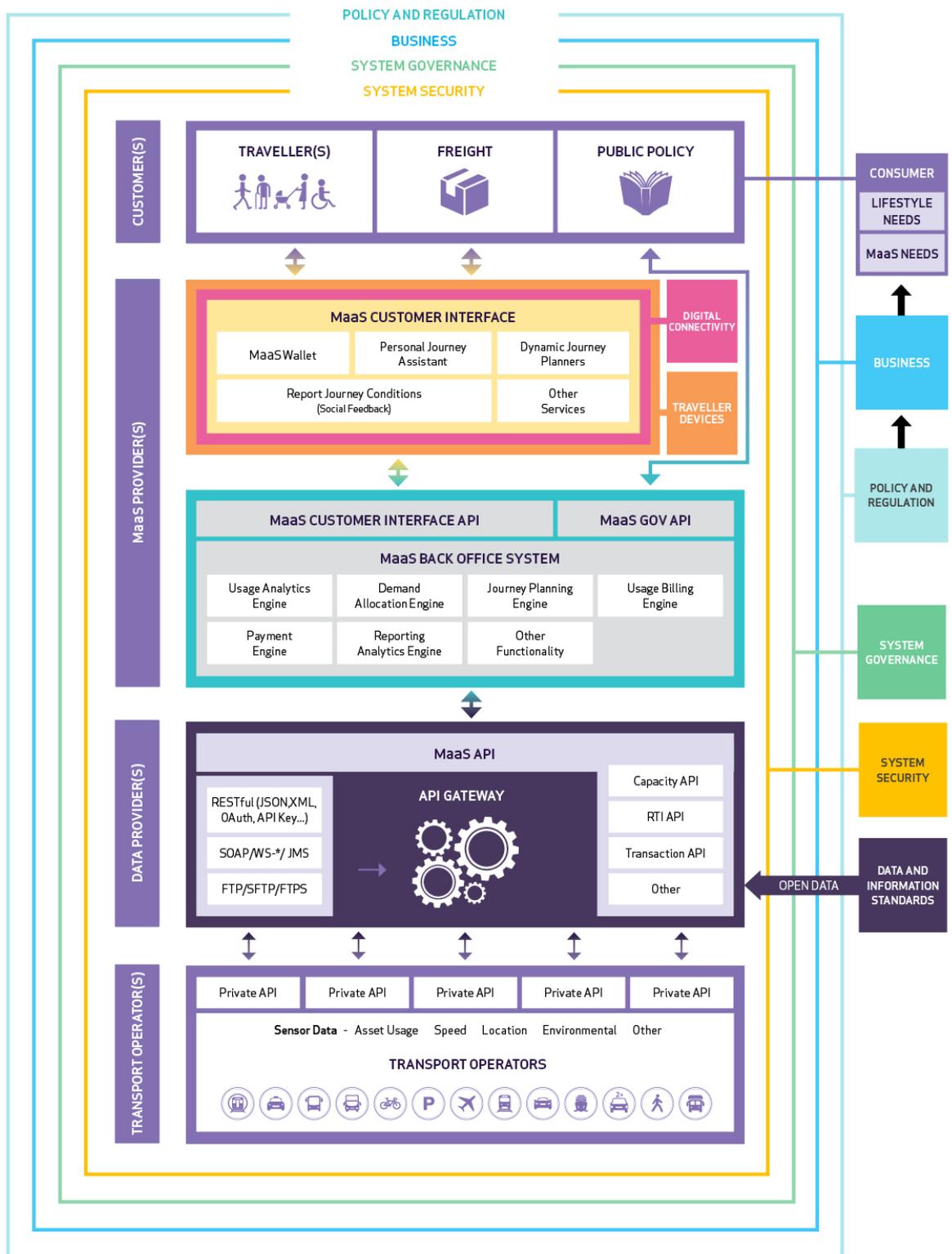
The ethos of TravelSpirit is to create a community that owns, embraces and advocates open collaboration and the building of the open Internet of Mobility for the market growth areas of Mobility as a Service (MaaS) and Connected & Autonomous Vehicles (CAV).

The assessment framework outlined in this technical paper will help cities and transport companies understand their current position and their potential for developing an open MaaS model. It sets out the context for developing policies and business models that ensure that any work undertaken also benefits the wider MaaS community.

## OUR BASELINE REFERENCE FRAMEWORK

The baseline reference framework is built on the open eco-system reference architecture documented by Transport Systems Catapult in their report *Mobility as a Service: Exploring the opportunity for Mobility as a Service in the UK*, July 2016 (shown below).

# Maas reference architecture



Transport Systems Catapult: Mobility as a Service  
 Exploring the Opportunity for Mobility as a service in the UK  
 James Datson, July 2016

## CATEGORIES

From this reference architecture a number of categories may be considered.

### Transport operators

- Location
- Ticketing
- Payments and reconciliation
- Security and rights management

### Data providers

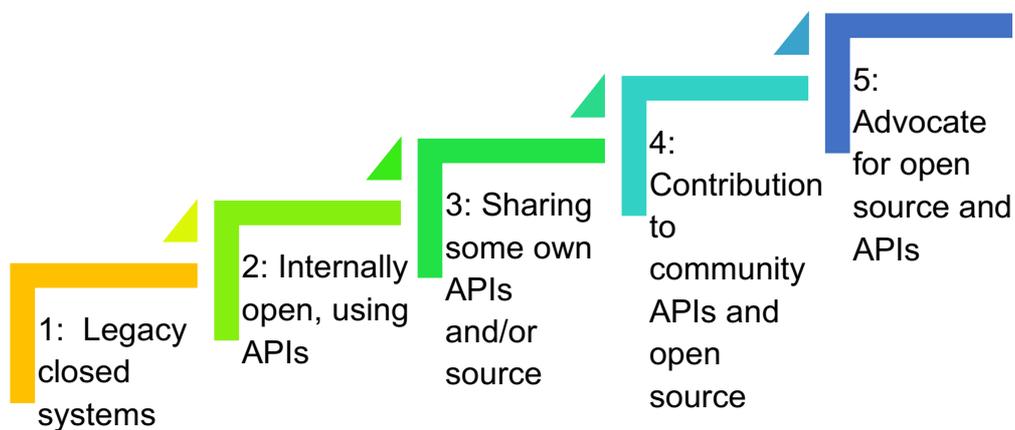
- Capacity
- Real-time locations
- Transactions
- Others
- Security and rights management

### MaaS providers

- Customer interface
- Government/regulation interface
- Usage
- Payments and reconciliation
- Demand allocation
- Journey planning
- Billing
- Reporting, KPIs and metrics
- Security and rights management

### MaaS customers

- Wallet
- Journey planners
- Personal assistant
- Usage
- Feedback
- Social networking
- Security and rights management



## STEPS TOWARDS OPENNESS

Each element and the whole eco-system may be categorised in terms of its MaaS openness maturity. The proposed maturity model is loosely based on systems and open source maturity models adapted to the MaaS eco-system.

**1: Legacy closed systems:** Denial - no open source or APIs everyone working in silos.

**2: Internally open, using APIs:** Organisations make use of open source software internally and utilise their own APIs.

**3: Sharing some own APIs and/or source code:** There is a realization that open source/APIs are a two-way street and that to get the most out when they contribute back to the process, helping to improve the overall quality of the code and making further savings on not having bespoke solutions.

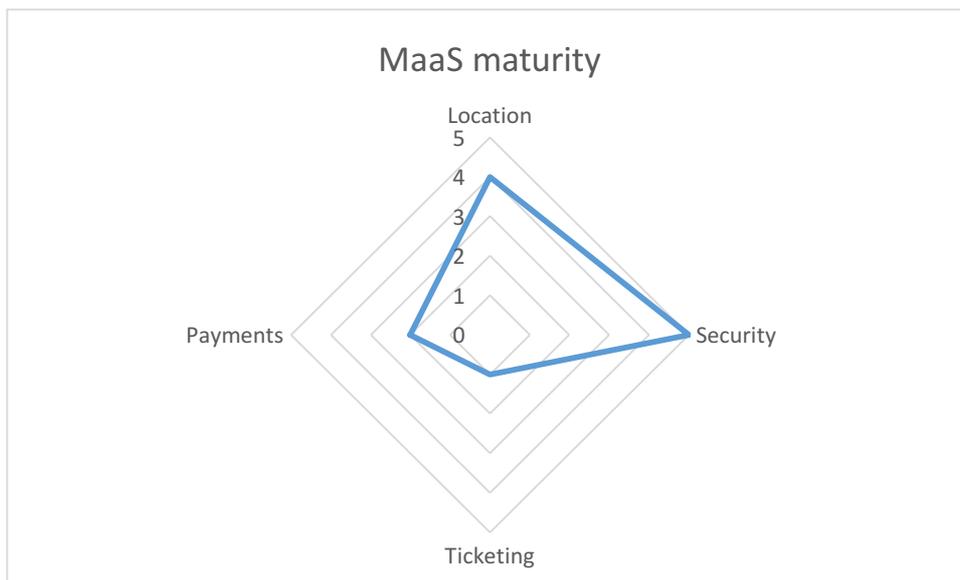
**4: Contribution to community APIs and open source:** Organisations now champion specific projects, and the open source/API approach in general, as it begins to see the full value of collaborating with partners and competitors in developing MaaS.

**5: Advocate for open source and APIs:** Up until now the process has been largely led by engineering. The realization of greater value pushes the organisation over a line to realize that open source/open API engagement needs to be business-led, rather than engineering-led. It begins to engage in multiple projects and realizes the true business benefits of open source engagement.

# Service priorities

## THE TOOLKIT (GAP ANALYSIS)

A number of toolkits are available for understanding the openness of a city. What makes this assessment framework unique is both its focus specifically on enabling Mobility as a Service and its consideration of openness as a collective, and not simply one aspect such as data.



Any MaaS system – for instance a city, platform or transport operator - is assessed for each component that has been implemented or is planned to be implemented against the maturity level and spider maps are then created showing the maturity for:

- The MaaS customer
- The MaaS provider
- The data provider
- Each of the transport operators.

Each strand of the spider map represents one of the sub-criteria. For example for a specific transport operator the strand score might be:

- **Location** – this information is open to anyone using a defined API but the organisation is not yet an advocate for open APIs. This would make them Maturity Level 4

- **Ticketing** – an organisation with a closed legacy system would achieve Maturity Level 1
- **Payments** and reconciliation which use an organisations own APIs but this API is closed to others gives Maturity level 2
- **Security and rights management** – using a publish and open shared standard such as ITSO for Smart Ticketing and contributing to its development – Maturity Level 5

The overall maturity level of the operator is the average of each of these strands so in this case: **Maturity Level 3**. Combining the scores for all elements, transport operators, data providers, MaaS providers and MaaS customers can yield a city level maturity assessment.

The intention of the assessment is to determine which components would benefit the most from being pushed up the maturity curve and in doing so TravelSpirit would assist and advise on how this move could also contribute to the overall MaaS community. In the example **Ticketing** was Maturity Level 0 – therefore assisting the transport operator to develop say an open source mobile ticketing solution would have a number of benefits:

- The transport operator would not be bound to one mobile ticketing solution supplier.
- A number of MaaS providers could utilise the transport operator’s ticketing.
- Other transport operators would be able to adopt the same mobile ticketing software and therefore be ready to be utilised by MaaS providers.
- Customers would get a consistent interface wherever the open standard was used.

## Using the tool

The tool was first used in an assessment of the West Midlands planned MaaS system.

The elements of the system were listed and the relevant categories evaluated to determine which of the 5 steps towards openness it most closely matched, and scores were aggregated. The assessment was peer reviewed by members of the TravelSpirit UK Programme Board.

The accompanying case study describes the process and outcomes in detail.

TravelSpirit is now seeking other systems to index so that we can map openness in the development of MaaS globally.

For further information on using the tool or to submit your assessment of your MaaS project please email [info@travelspirit.io](mailto:info@travelspirit.io).

## Acknowledgements

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