Mobility as a Service: code of practice

Introduction

Thank you for responding to our consultation. Your views will help us to gather further evidence to develop the content of a Mobility as a Service (MaaS) code of practice.

Closing date is Tuesday 3 May 2022.

View all the questions

This survey provides questions based on user choice, a full copy of the questions is available (opens in a new window).

Print or save a copy of your response

When you get to the end of this questionnaire, you will be offered the chance to either print or save a copy of your response for your records. This option appears after you press 'Submit your response'.

Save and continue option

You have an option to 'save and continue' your response at any time. If you do that you will be sent a link via email to allow you to continue your response where you left off.

It's very important that you enter your correct email address if you choose to save and continue. If you make a mistake in the email address you won't receive the link you need to complete your response.

Accessibility statement

Read our accessibility statement for SmartSurvey forms (opens in a new window).

Confidentiality and data protection

This consultation is asking for views to help us to gather evidence to develop the content of a MaaS code of practice.

We are asking for:

- your name and email address, in case we need to ask you follow-up questions about your responses (you do not have to give us this personal information, but if you do provide it, we will use it only for the purpose of asking follow-up questions)

- whether you are representing an organisation or yourself

Additionally for organisation we are asking for the:

- name of your organisation, for identification

- type of work your organisation does, to better understand the relationship between you and the topic

For organisations we are also asking for the type of organisation you are in order to better understand how this strategy will affect your work.

Your consultation response and the processing of personal data that it entails is necessary for the exercise of our functions as a government department. DfT will, under data protection law, be the controller for this information. DfT's privacy policy (opens in new window) has more information about your rights in relation to your personal data, how to complain and how to contact the Data Protection Officer.

Any information you provide will be kept securely and destroyed within 12 months after the closing date. Any information provided through the online questionnaire will be moved to our internal systems within 2 months of the consultation period end date.

Personal details

1. Your (used for contact purposes only):

name Ann Carruthers

email Ann.Carruthers@leics.gov.uk

2. Are you responding: *

- [ ] as an individual? (Go to 'Introduction')
- [ ] on behalf of an organisation?

Organisation details

Name of organisation?

Association of Directors of Environment, Economy, Planning & Transport (ADEPT)

3. Your area of work is?

- [x] Public sector
- [ ] Private sector
- [ ] Third (charity) sector
- [ ] Another area:

Introduction

In response to the increasing availability of data and digital capability in transport we are seeing new business models emerge. These models package different modes and services together into one application or platform simplifying consumer trip:

- planning
- payment

Such innovation has been termed ‘Mobility as a Service’ (MaaS) and we have defined this as:

"the integration of various modes of transport along with information and payment functions into a single mobility service"

We are consulting on the potential contents of a MaaS code of practice.

We believe:

1. A voluntary code of practice will enable us to support MaaS as it grows without introducing regulations at a time that could stifle innovation in this emerging industry.
2. That consulting on a code of practice will provide an opportunity to gather evidence in a structured manner to understand where regulation might need to be brought forward in the future.

The consultation includes the areas of

- data
- multimodal ticketing
- accessibility and inclusion
- consumer protection
- algorithmic bias
- competition issues

MaaS Code of Practice

We propose a MaaS code of practice could:

- provide guidelines for new entrants to the market and incumbent MaaS platform providers to aid navigation around relevant legislation

- support new businesses in the MaaS industry to make decisions in line with our goals of:
  1. Putting users at the heart of the transport system.
  2. Reducing the environmental impacts from transport

- encourage MaaS platform providers to include carbon data for each route offered, helping consumers choose lower carbon journeys

- provide guidelines to MaaS platform providers to ensure that the services they offer are inclusive and accessible to all customers from the outset

- provide best practice examples of MaaS solutions

- assist local authorities in developing or considering MaaS platforms to operate in their areas, developing local solutions that build on nationally agreed standards

For this consultation the terms of:

- commercial MaaS platform providers refers to companies who use MaaS for their business such as Citymapper [opens in a new window], Moovit [opens in a new window] and Whim [opens in a new window]

- local authorities refers to local council authorities within the UK

- sub-national transport bodies refers to established transport bodies such as Transport for London, Midlands Connect and Transport for the North

- transport operators includes suppliers across all transport types such as, road, rail, maritime and aviation for example National Express, LNER and Stagecoach

- transport users refers to those using transporting systems

4. In your view how can we ensure the code of practice is relevant for:

commercial MaaS platform providers?	For Commercial MaaS platform providers, the Code of Practice (COP) should seek to: • define what a MaaS platform is, the obligations of the providers (such as what the COP is and how the COP applies). • identify how data should be shared between local, regional and national government, transport operators and MaaS platforms. • identify the types of data that local and sub-regional transport authorities and transport operators will share and the mechanism for that data sharing to take place. • ensure that government and that transport operator data is provided in a standardised format to ensure the data can more easily be brought into a MaaS platform. • identify an agreed mechanism for calculating the “cost of driving” and carbon impacts of a journey to ensure consistency between platforms. • Identify any data protection requirements and anonymisation requirements for data.
local authorities?	For Local Authorities, the COP should: • identify the data that a local authority would be expected to share with MaaS platforms via Open Data (and possibly live feed) platforms. • identify the types of data that the MaaS platforms could share with local authorities to assist future decision making on policy and network interventions • identify how MaaS operators will be monitored to ensure compliance with the objectives of local transport plans etc
sub-national transport bodies?	The relevance of a MaaS COP for sub-national transport bodies is similar to that for local authorities, except sub-national bodies may also act as the transport operator in some areas.
transport operators?	To be relevant to transport operators, the COP should specify: • the minimum levels of non-commercially sensitive data that need be shared with MaaS platforms – route information, timetables, fares, stop locations etc • How competition considerations will be taken into account. • How data could be shared between MaaS platforms and transport operator, perhaps even on a live basis.
transport users?	For transport users, the COP should seek to: • establish the grounds for fair competition, accessibility and inclusivity within the MaaS space, • set out the rights of users of MaaS platforms (potentially including how compensation is identified when things go wrong) • identify how accessibility and inclusivity will be included in the MaaS platform and the planned journeys, while allowing personalisation of the users needs and requirements.

5. In your view, what issues do you feel would not be appropriate to include in a code of practice for MaaS?

None

Data

MaaS is a digital, data driven business model that relies on the ability to access timely and accurate data relating to:

- service timetables
- routes
- fares
- ticketing

To help users choose lower carbon journeys, we think the inclusion of carbon data for each route offered should be available for MaaS platform providers to access.

For MaaS to work, data sharing arrangements need to be in place between transport operators and MaaS platform providers plus the data shared must be of sufficient quality to provide the user with the most accurate travel information.

We want to understand what role, if any, a code of practice can play in supporting data issues in order to increase MaaS use.

6. What, in your view, if any, should be the role of a code of practice in addressing data:

issues overall to facilitate MaaS?	The COP should seek to standardise the format of data used to facilitate MaaS services (e.g. so that all service timetables, fares and ticketing information can easily be read from different operators). Route information should be plotted along the path taken by the mode and stop locations need to be accurate.
sharing arrangements to facilitate MaaS?	Where data is not commercially sensitive, the COP should seek to establish open data sharing where practicable, and seek to standardise the format of data available to the MaaS platforms. The COP should also identify how data can be shared between MaaS platform, local authorities and transport operators.
quality to facilitate MaaS?	There are various facets to quality in this context: 1. quality of positional data (for example locations of bus stops, possibly live vehicle positioning) - 2. quality of routing data – ideally this should be plotted along roads, routes not crow-fly or by linking stop locations 3. quality of cost data – is fare information available, how old it is etc 4. potential for live data, such as vehicle positions, capacity information etc

7. Do you believe there are benefits to data standardisation for MaaS?

- [x] Yes
- [ ] No (Go to ‘Data’)
- [ ] Don't know? (Go to ‘Data’)

MaaS benefits to data standardisation

8. What benefits?

Standardised data, particularly when it is drawn from various commercial sources will offer existing and new entrants to the MaaS market with a common data source to draw upon, with value added by the MaaS platforms by their operators using this data in novel or unexpected ways.

Standardised data will also allow MaaS platforms to quickly update their services with new (and possibly near live) data to ensure that the information they provide is always up to date. This approach could allow MaaS platforms to utilise live data. For example, this could be used to inform customers where their bus is, or if there is time to buy a coffee before the train arrives at the station.

Such standardisation will also allow all stakeholders to know what data they should provide and in what format. It will also give them confidence that MaaS platforms have the tools to interpret the data.

Data

9. In your view what, if any, challenges to accessing standardised data:

exist now?	Typically, most operators, local authority etc collect and store their raw data in different database or spreadsheet formats. These datasets may not be openly available to the public and contain commercially sensitive details. This means that additional processing and resources may be required to make the datasets publicly available.
will exist in the future?	New and emerging technologies may generate new forms of data in non-standardised formats.

10. How, in your view, should data sharing arrangements between transport operators and MaaS platform providers be managed?

- [x] Contractually
- [ ] Voluntarily
- [ ] Another way? _____

Why?

If the transport operator is sharing data that is not normally freely available (such as passenger numbers, vehicle positions etc) this data should be shared contractually, as there may be a degree of commercial sensitivity to the data. The speed at which data is updated (i.e., time between a change and the data being provided) will be key to the provision of accurate journey planning by the MaaS platforms, and this may require some form of contractual base to ensure information is updated promptly.

It is noted that many of the transport operator data types needed for a MaaS platform are already freely shared (such as timetables, route information, fares etc), but not necessarily in a standardised format.

11. In your view are there any challenges to sharing data?

- [x] Yes
- [ ] No (Go to ‘Data’)
- [ ] Don't know? (Go to ‘Data’)

Data sharing challenges

12. What do you believe are the main challenges to sharing data?

For MaaS platforms to be truly effective, the data needs to be up to date and correct and reflect the travel conditions now. Very often, reasons of commercial confidentiality etc lead to data not being shared “live” and if data is “live” it is often only available inside the app/ web ecosystem of the transport operator. It is these commercial considerations that lead to data sharing challenges, even at local authority level where there can often be a charge for certain types of data. A lack of standardisation and differences in approach are also challenges – for example some smaller bus operators may not even collect the data a MaaS platform may want.

13. What do you think will be the impact of your challenges?

It is some of the more commercially sensitive information (such as passenger levels) that would add the most value to MaaS services, and if this information cannot be made available it would restrict some of the benefits that could be derived from recommending lightly used services to travellers.

Data standardisation is likely to be easier to achieve as it can be made a condition of letting future franchises or services.

Data

14. Do you believe there are there other data issues, beyond data sharing and data standardisation, that our code of practice could address?

- [ ] Yes
- [x] No (Go to ‘Multimodal ticketing’)
- [ ] Don't know? (Go to ‘Multimodal ticketing’)

Other data issues

15. What other data issues?

N/A

Multimodal ticketing

Alongside the ability to plan a journey using multiple modes of transport, MaaS can offer the ability for customers to purchase a ticket for their journey through the MaaS application, using either:

- pay-as-you-go
- subscription models.

For this to work, however, passengers need to be able to receive their tickets in a convenient, digital format, and MaaS providers need to be able to integrate with operator retailing systems.

We want to know how a code of practice can help MaaS platform providers, local authorities and transport operators overcome:

- the challenges to offering ticketing
- integrating with multiple modes

16. In your view, are there any barriers to creating multimodal ticketing schemes?

☑ Yes

Multimodal ticketing challenges

17. What do you believe are the barriers to creating multimodal ticketing schemes?

Presently, the main barriers to multi-modal ticketing typically relate to :

- pricing of the tickets being too high.
- getting operators to sell the product.
- fragmentation of bus market across many operators
- identifying how revenue will be split across operators, particularly in cases where multiple modes and operators share a route.
- fragmentation of ticketing across operators, digital vs paper, daily caps etc

Although such products are available across the country (for example the national rail “plus bus” ticket), the product is not available to buy on the buses. The TfL Oyster Card is a good example of how a multi-modal ticket can be run on a sub-national level, but has led to price differentials between Oyster and National Rail from some London terminals, or to there being a competing smart season ticket for the rail operator, requiring a traveller to use two systems for one journey.

Such barriers could be exacerbated in a MaaS Application which may include a walking or cycling element, particularly if the MaaS application is seeking to give users a “rebate” on the active or lowest carbon parts of their journey.

It is likely that such multi-modal products may become a key part of the future MaaS market and could become a main point of differentiation between different platforms, which could lead to multi-modal deals with parts of some local markets, but not for all modes or journeys.

18. What do you think will be the impact of your challenges?

The risk is the continued fragmentation of ticket offerings by local authority, city region etc which will ultimately make creating fully integrated MaaS platforms more difficult. It is likely to require government interventions to increase the availability of multi-modal tickets.

Multimodal ticketing

19. In your view what role, if any, can the code of practice play in supporting multimodal ticketing?

There are several roles that could be played by the COP:

1. Ensure data sharing arrangements are not made with a single bus operator/ train operator as this has the potential to limit the journeys that can be made within a local area.
2. Identify what modes would be covered by multi-modal tickets (for example, would walking/ cycling stages be included for platforms that offered financial incentives for active travel).
3. Get support for a multi-modal ticket approach from all stakeholders / operators

Accessibility and inclusion

MaaS has the potential to make travel more accessible and inclusive by:

- offering journeys for everyone tailored to individual needs
- taking away the barriers experienced by disabled passengers
- simplifying journey planning
- making travel more:
  - integrated
  - safer
  - comfortable
  - cost efficient

However, multimodal journeys planned and paid for through a MaaS platform could present challenges for users if:

- they do not provide appropriate assistance for passengers transferring between modes

- when planning journeys they do not take into account passenger needs such as step-free access

We want to understand the ways in which a code of practice can help provide guidelines on accessible and inclusive travel.

20. How, in your view, can MaaS platform providers ensure:

their systems are accessible and inclusive to all users?	The COP should expect that the MaaS platforms are designed to be accessible to all users, and could set out guidelines for accessible design processes, and that testing is undertaken by a range of users with different abilities and limitations to ensure that the MaaS Platforms are fully accessible to all potential users. Examples include: • Systems should not assume the level of help a user requires, and should provide options to allow their users to select any limitations that need to be placed within the algorithm when planning a journey (e.g. maximum walk time, ability to cycle, need for step free access, human assistance required etc). • The system should use best practice accessible app/ web design, with design assistance from UI accessibility experts. • Have users with different needs involved in the design, testing and implementation of the MaaS platform to ensure that their needs are considered during development, rather than added as an afterthought • To give consideration how those without a smartphone could use the MaaS service. • To consider a range of payment options, which could include payment by SMS, using Paypoint systems or by invoice to assist those without a bank account.
the journeys they provide are accessible and inclusive to all users?	The COP should expect that systems be designed to allow users to identify what they can and cannot do, the help that they need (within the help available) and identify a bespoke set of journey preferences – for example, this could the user being able to: • set a maximum walking distance (including a zero distance) • identify if they can use a bicycle (not all adults potentially able to use a bicycle can use a bicycle). • need for step free access. • identify where help is required (possibly to board a bus/ train). • trip preferences by weather • preferences for “quieter” journeys This list is not exhaustive, and MaaS Platforms should seek to include the design of these preferences as part of their accessible and inclusive system design. The algorithms should not seek to make assumptions about the level of help needed, as this is not the same for everyone, but should seek to enable anyone needing help to travel.

21. How, if at all, do you think a code of practice can help to ensure that MaaS is inclusive for those who may struggle with access (including examples such as those without a smart phone or access to a bank account)?

The COP should seek to make the best deals and information is available to all users no matter how they pay or what technology they use to access the platform – this could include payment by SMS or in cash, or even a means of post payment using invoices.

22. In your view are there other ways our code of practice can help provide guidelines on accessibility?

- [x] Yes
- [ ] No (Go to 'Inclusivity')
- [ ] Don't know? (Go to 'Inclusivity')

Accessibility assistance

23. How?

The COP should establish that if a journey with assistance is booked via a MaaS platform, that if this assistance is not provided the MaaS platform will be responsible for any additional costs incurred by the customer.

Inclusivity

24. In your view are there other ways our code of practice can help provide guidelines on inclusivity?

- [x] Yes
- [ ] No (Go to ‘Consumer protection’)
- [ ] Don't know? (Go to ‘Consumer protection’)

Inclusivity assistance

25. How?

The Code of Practice should specify means via which those without a smartphone can collect a paper ticket and offer a selection of mechanisms for payment for those without a bank account.

Consumer protection

We want to ensure consumers receive the same level of service and protection when undertaking a multimodal journey purchased through a MaaS platform as when undertaking a single mode journey.

We want to understand if a code of practice could help to:

1. Clarify roles and responsibilities within existing legislation.
2. Offer good practice solutions for tackling the interface between modes when it comes to consumer protection.

26. Do you think the code of practice should play a role in addressing consumer protection needs for multimodal journeys?

- [x] Yes
- [ ] No (Go to ‘Algorithmic bias’)
- [ ] Don't know? (Go to ‘Algorithmic bias’)

Multimodal journeys role

27. What role?

The COP should set out roles and responsibilities and, if necessary, penalties, for failing to provide necessary support for a multi-modal journey. This could include setting a minimum level of help/ compensation that will be provided if part of a multi-modal journey is cancelled or withdrawn once the journey has started.

Algorithmic bias

MaaS platforms use algorithms to determine which journey options are displayed to the user, and in which order they are presented.

Algorithmic bias occurs when these algorithms produce results that are intentionally skewed:

1. Away from consumer or public policy interests.
2. Towards the commercial objectives of one or more providers.

MaaS algorithms can also produce insights that lead to unfair discrimination.

To help meet decarbonisation objectives, we propose the code of practice could encourage MaaS providers to promote:

- active travel such as walking and cycling

- sustainable modes of transport through the inclusion of carbon data for each route offered

We want to understand if a code of practice could encourage MaaS providers to avoid:

1. Algorithmic bias.
2. Unfair discrimination.

28. How, if at all, in your view can MaaS platforms encourage:

sustainable travel options?	Maas platforms could seek to encourage sustainable travel options in various ways, including: 1. presenting sustainable travel options for all appropriate journeys – this should include bus, train and active modes where appropriate. 2. default to ranking options by their sustainability, not speed or cost, although users should be allowed to rank options by various options (total cost, speed, cost per mile etc as well). This approach could help nudge users into travelling by the most sustainable mode of transport. 3. providing a full cost comparison, including the full cost of driving (an agreed method could be established in the COP) 4. providing live information about current locations of a bus/ train and the likely time for arrival at the nearest stop. 5. presenting information on the carbon emissions generated by different modes of transport – all modes appropriate for the selected journey. The above list is not exhaustive, and this could be a space within which the MaaS platforms seek to innovate to encourage sustainable travel.
active travel options (for example walking and cycling)?	Maas platforms could seek to encourage active travel options in various ways, including: 1. putting active mode trips first in the list returned (if it is realistic to make the journey by active modes). 2. by offering nudges or incentives to select a slower active mode trip (for example credit towards future trips by other modes). 3. by offering free training for cyclists to increase their confidence.

Encouragement of such trips within a multi-modal trip will be particularly important, and it is likely that this is where nudges/ incentives will be most effective.

29. What, if any, role, do you think the code of practice should play in addressing algorithmic bias?

As it may be desirable for there to be some 'bias' in the MaaS platforms (for example recommending active/ sustainable journeys above others), the COP should require that MaaS platforms identify in a prominent location the assumptions/ bias in their algorithm. The COP should also seek to establish a requirement for user personalisation their journey preferences and abilities that should be taken into account during route planning.

Competition

The emergence of new monopolies for mobility services could pose a significant threat to realising the potential of MaaS. There are a range of competition issues that may arise including:

- public and private sector monopolies
- data sharing
- the integration of transport operators onto a MaaS platform
- the risk of organisations violating existing competition laws

We want to understand the role a code of practice can play in addressing competition issues that may arise in the MaaS market.

30. What, if any, role do you think the code of practice can play in addressing competition issues that may arise in the MaaS market?

The COP should seek to prevent monopolies forming (for instance, if a MaaS platform has a contractual tie to a specific operator, it should still provide information about travel using other operators).

Other MaaS issues

31. Are you aware of any good practice in relation to:

	Yes	No	Don't know?
data?	☐	☑	☐
multimodal ticketing?	☐	☑	☐
accessibility?	☐	☑	☐
inclusion?	☐	☑	☐
consumer protection?	☐	☑	☐
algorithmic bias?	☐	☑	☐
competition?	☐	☑	☐

Add examples (including which topic):

N/A

32. What, if any, other topics do you think should be addressed through the code of practice?

The COP should set out a principle that MaaS should encourage travel by active and sustainable modes, while providing more information to travellers when travelling by any mode.

The COP should also seek to ensure that transport authorities and operators are able to gain value from sharing their data. For example, MaaS Platforms providers could share information on journeys planned / purchased through their service. This could help with the planning future routes and monitor the success of policy interventions at local, regional, or national levels.

33. What do you think we should be doing to monitor the effectiveness of the code of practice?

This principle could be monitored by:

- comparing the proportions of sustainable, active and other mode trips over time.
- monitoring the willingness of customers to use MaaS platforms
- monitoring the use of MaaS platforms

34. Are there any other ways you think we should support MaaS in the future?

Consideration could be given towards including MaaS and other technology within future franchising agreements and policy. This would help eliminate existing barriers to multi-modal ticketing, particularly across local authority boundaries.

Final comments

35. Any other comments?

N/A