REMAINING CHALLENGES FOR EU-WIDE INTEGRATED TICKETING AND PAYMENT SYSTEMS

Final Report

Written by Simona Frazzani, Igor Taranic, Martin Jensen, Alessandro Zamboni, Kletia Noti, Martina Piantoni.

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Executive Summary

Introduction

Objective and scope of the study

The objective of this Study is to investigate and provide a comprehensive and neutral analysis on the challenges of delivering passengers with EU wide integrated ticketing and payment systems and on the possible actions and initiatives at EU level in pursuance of such goal. The Study includes urban and local transport modes as well as long-distance and covers both public and private transport operators.

Although there is not a unique definition of integrated ticketing, this can be defined as the purchase of a single ticket that allows passengers to travel using different modes of transport provided by one or more operators or as “combining all transport methods in one single ticket” and is considered as the natural partner to multimodal travel information and planning services.

The integrated ticketing value chain

Integrated ticketing is aimed at making multimodal transport more sustainable and attractive for users by promoting a more efficient use of existing infrastructure and services and therefore increasing customer convenience and efficiency of public transport. Ultimately, it can contribute to the achievement of goals such as better air quality, less congestion, greater efficiency of the transport system as a whole, capacity increase, social inclusiveness, promoting jobs and innovation.

The implementation of an integrated ticketing system requires tight integration during the performance of a number of phases of the travel chain, from the user’s search/query for information on the journey to the revenue sharing between the different actors, passing through the booking, payment and clearing, ticket issuance and validation, possible changes of reservation/re-routing in case of errors or delays, and complaints’ management. This implies interoperability basing on common standards (to combine pre-trip and on-trip information, timetables, pricing schemes, regulatory and organisational frameworks, booking and payment systems). It also requires the intervention of various players that shall work together and combine their products, ideally throughout different operating regions and across different services.

It follows that thousands of contracts need to be signed, including not only technical agreements but also business and political agreements, obliging transport operators to circulate ticket prices for all segments.

1. The current situation

To date, there are numerous examples of electronic and smart ticketing, developed as part of EU-funded research projects or provided by different transport operators, start-ups or public-private partnerships. However, a full EU integration allowing to have one single ticket for a seamless journey has not been achieved, meaning that it is not possible to buy a single ticket for a multimodal journey across Europe and thus to ensure an EU-wide door-to-door coverage.

The study gives an overview of the existing context for integrated ticketing and payment systems by analysing the passenger experience; the existing legal

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2 Towards a roadmap for delivering EU-wide multimodal travel information, planning and ticketing services, SWD (2014) 194.
framework both at EU and national level, the non-legislative initiatives and the projects in place. Against this backdrop, the core challenges to the development of EU-wide integrated ticketing and payment systems are identified and a set of recommendations to overcome them is developed.

1.1. Passengers’ panel

A passenger panel was launched in six Member States (Belgium, France, Germany, Italy, Poland and the UK) to assess the passenger experience of integrated ticketing and the availability of existing integrated ticketing schemes in relation to their needs and expectations. The consumer panel’s findings were complemented with in-depth interviews with passengers’ associations and consumer organisations specialising in travelling. The survey has shown that respondents heavily rely on three main means of transport, namely railway transports, cars (whether rented or shared) and airplanes. It has also emerged that there is potential demand on the market for integrated ticketing service. Respondents rated their multi-modal travel experience so far as good and seemed particularly satisfied with the time-saving possibilities offered by the integrated ticketing. However, factors that may improve their experience are: cheaper prices and more promotions, the provision of clearer information about the transport service and the creation of dedicated mobile apps.

1.2. Legislative framework

As part of the study the relevant EU and national legal framework have been analysed, showing that the development and implementation of integrated ticketing schemes is fairly heterogeneous across the European Union. In fact, the level of integration may diverge significantly even throughout the regions of the same country.3

At the EU level, in the last two decades the European Commission has supported the integration of transport modes, ever since the 2001 White Paper on transport policy. After that, several legislative initiatives were undertaken and contributed to shaping the relevant legal framework for integrated ticketing and payment services. The relevant legislation in place at EU level consists, in the first place, in the Directive (EU) 2010/40 (ITS Directive)4 and the Delegated Regulation (EU) 2017/1926 on the provision of EU-wide multimodal travel information services. Additionally, the Directive (EU) 2016/2370 (Rail Directive),5 aiming at improving interoperability, provides for specific rules on common information and through-ticketing schemes. The development of an EU-wide integrated ticketing and payment system necessarily involves public transport operators along with private companies. Consequently, the relevant framework shall also take into account the specific rules for operators running public services (Public Service Obligations). These are laid down in Regulation (EC) 1370/2007,6 Regulation(EEC) 3577/92,7 and Air Services Regulation (EC) 1008/2008.8

3 The use of intermodal transport is for example more pronounced in Italian cities with populations of more than 100.000. In Poland the Warsaw City Card and ticket system is the most advanced (and oldest) system of this type and covers the largest amount of modes of transportation (trams, trains, buses, metro and city bike-sharing program).
Each element of the travel chain requires access to different data in order to perform the service. Therefore, for integrated ticketing and payment system to work, access to data (both static and dynamic) is essential. Another crucial aspect for the development of integrated ticketing and payment systems is the exchange of data. In this respect, relevant EU legislative acts are Directive (EU) 2015/2366 (Payment Service Directive, PSD2), being the EU milestone in the sharing of banking data; the Directive (EU) 2019/1024 on open data and the re-use of public sector information (Open Data Directive); Regulation (EU) 2018/1807 on a framework for the free flow of non-personal data; Regulation (EC) 80/2009 on a Code of Conduct for computerised reservation systems; Directive (EU) 2016/943 (Trade Secrets Directive); and the recently adopted Regulation (EU) 2019/1150 on promoting fairness and transparency for business users of online intermediation services.

Passenger rights in a multimodal context have been addressed in a separate exploratory study.

Along with EU legislation, a legal mapping of current legislative initiatives on integrated ticketing at national level was conducted, showing that governments of a growing number of countries are interested in promoting ticket integration and in some cases a number of specific projects are underway, and a new legislation is being discussed or drafted (Estonia, Hungary and Croatia). Six Member States have already adopted or have submitted legislative proposals covering integrated ticketing. In most cases, this mainly stems from the national implementation of Delegated Regulation (EU) 2017/1926. In particular, a comprehensive legal framework has been adopted in Finland, where the Finnish Act on Transport Services lays down provisions on the opening of interfaces for normally priced single tickets in road and rail traffic. Similarly, a French Bill presented in November 2018 requires the opening of mobility data on a real time basis and accelerates the European timeline for the implementation of Delegated Regulation (EU) 2017/1926 concerning the static traffic and travel data that shall be made available on National Access Points (NAP). A similar Draft Bill was presented in Denmark in December 2018, with the purpose to regroup the functions of the travel card and the travel plan together in one digital mobility service under one company managed by a joint board. Under the Danish Draft Bill, public transport companies shall provide selected static and dynamic transport data to third parties free of charge.

Also non-legislative initiatives have been undertaken in order to help operators, local authorities and scheme administrators to assess compliance of ticketing schemes with competition law. An example is the UK "Public Transport Ticketing Schemes Block

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15 Study contract No. MOVE/B5/SER/ 2016-77/SI2.760997
17 Projet de loi d’orientation des mobilités (LOM), NOR : TRET1821032L/Bleue-2.
18 L 129 Proposal for a law amending the Danish Transport Companies Act and the Railway Act.
Exemptions”, adopted by the Competition and Markets Authority in 2016 in order to clarify, from a competition law perspective, what is allowed in integrated ticketing schemes, especially in terms of sharing price information.

1.3. Existing projects

Eleven projects (including EU-funded projects) with a cross-border scope (all across the EU, except for the BMC project, whose subject-matter are the border regions of Belgium, France, Germany and Luxembourg) were identified and reviewed to lay the groundwork for the Study identifying best practices and positive impacts of integrated ticketing and payment systems.

Additionally, further projects of national dimension were studied. Examples of such projects are in Sweden (with the Resplus system available in the country since 1994) and Netherlands (with the OV-chipkaart travel card launched in 2001), being two forerunners in national multimodal ticketing and smart payments for all transport modes. Other examples are, inter alia, in Germany (with the VDV Core Application), in Denmark (with the electronic travel card Rejsekort), in Belgium (with the MoBIB card, established in 2010), in Ireland (the Leap Card, launched in 2012).

The analysis of the existing projects showed that, while a full cross-border multimodal integrated ticketing scheme does not currently exist, there is a clear interest towards EU-wide integrated ticketing and payment systems. However, already from the study of these projects, some barriers and challenges appear (e.g. price integration, regulatory uncertainties, technological challenges, lack of cooperation). These barriers and challenges are mainly related to data access and cooperation between stakeholders. Based on the examined projects and the initiatives in the sector, no technical show-stoppers to achieving interoperability between travel providers systems emerged.

2. Main challenges to integrated ticketing and payment systems

The results of the study have evidenced some legal and commercial barriers that stem from the implementation of an integrated ticketing and payment system.

2.1. Legal barriers

From a legal point of view, issues mainly related to the (i) lack of comprehensive multimodal legal framework for booking, ticketing and payment services, (ii) public service obligations and compensation, as well as (iii) lack of access to fare data were identified as the most perceived obstacles.

In fact, existing legislation is mainly designed for conventional transport systems, in particular transport modes provided and consumed separately. Since various transport modes and payment systems are involved in integrated ticketing, which are subject to different EU and national provisions, uncertainties exist concerning the applicable legislation especially in cross-border context. Besides, a complex regulatory framework with multiple national and international regulatory layers might hinder the development of new services and cause additional risks for investments in the provision of integrated ticketing models.

As to PSOs and fare data access, the findings of the study show that while transport operators under public service obligations have, to a certain extent, the obligation to

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20 European Travellers Club, FSM, IT²RAIL, MaaS Alliance, MASAI, MobiWallet, Smart Ticketing Alliance, EuTravel, Bonvoyage, BMC, All ways Travelling.
21 All the analysed projects were national or local in scope.
provide data, on the other side, in order to create an efficient system, there is the need to access data from non-PSOs or commercial operators as well. According to some stakeholders, this may be considered an obstacle for the revenue sharing in integrated ticketing because it is difficult to distribute revenue across the value chain while also considering compensation for the part of the journey provided by the PSO operator.

In addition, difficulties for third parties in developing an integrated ticketing product can arise from the fact that PSOs operators, due to confidentiality clauses related to the subsidized fares, may be exempted from providing fare data access.

2.2. Commercial barriers

From a commercial perspective, the main barriers identified are particularly relevant for private actors.

These include for instance the interoperability and ability to invest in technological developments (especially hindering small and medium businesses and transport operators with short public service contracts), the use of different sales and distribution modes, and the licence and distribution agreements which come into play where the technology of existing systems is proprietary and cannot be accessed by other service providers.

Furthermore, the uptake of integrated ticketing and payment systems business models depends on commercial choices of transport operators, vendors and aggregators. Hence, due to the large number of stakeholders, coordination and cooperation between them, commercial freedom and access to the market can be additional hurdles, due to the conflicting interests that they may have.

Another identified obstacle to integration is the fact that ticket vendors/aggregators do not offer assistance to customers, which might affect the reputation of the providers of transport services.

Moreover, finding the right balance in revenue sharing and fare management appears to be an outstanding issue. As noted, integrated ticketing requires all the participants in the scheme to circulate ticket prices for all segments and the parties involved need to agree commissions to be paid for the lead retailer. Accordingly, there is settlement and clearing to be carried out.

For a successful introduction of integrated ticketing systems, easy and attractive payment and validation methods should be offered. In this respect, according to some stakeholders, a further technical and commercial barrier to integrated ticketing is that readers used to check tickets are not able to read tickets in all available formats. Many of them can just read tickets stored in cards, mobile phone and/or as a barcode. There are common standards for readers of contactless payment cards, but these rely on trust between schemes to share security keys.

Finally, in the distribution/sales market, some respondents in the consultation have mentioned transport operators’ refusal to enter into distribution agreements, in certain cases coupled with the market power of the providers of transport services, as a possible barrier. Control of sales interfaces by incumbents as a means of controlling the relationship with the customer has been deemed the reason why such refusals may occur.

3. Conclusions and recommendations

3.1. Main findings

The results of the desk research, interviews and workshop evidenced that integrated ticketing and payment systems require a smooth cooperation of various actors.
However, there are areas where issues remain, such as: the more precise definition of the conditions for data access by third parties; difficult cooperation among stakeholders; complex and lengthy negotiations to obtain licences and distribution agreements; need to develop common standards and common interfaces; the need to find solutions concerning fare revenue sharing also in order to involve payment systems. Nonetheless, despite the legal and commercial difficulties, the study reveals a clear interest towards integrated ticketing and payment systems.

The large number of different local and regional transport operators, each one developing their own programme, leads to higher transaction costs for integrated ticketing providers. In this context, national legislators are already taking initiatives to promote data access for integrated ticketing, moving beyond the basis of the Delegated Regulation (EU) 2017/1926. However, these legislative initiatives may increase fragmentation and barriers across the EU, since they are mainly focused on the national markets.

In addition, it has emerged that the lack of a common legal framework and the heterogeneity of national rules concerning road and rail transport services, especially short distance, are considered a major issue.

From the stakeholders’ consultation which has been carried out it emerged that the majority of respondents are in favour of an EU legislative initiative, at least in order to cover the cross-border aspects of the integration.

In order to address the identified gaps, we recommend a number of possible solutions. However, in our opinion, an in-depth market analysis should be carried out, including a definition of relevant markets, before implementing any of the recommended solutions. They have been combined into three main types of measures: no new measures, non-binding measures and legislative initiatives.

3.2. Potential solutions

3.2.1 No new measures

A first solution is the no new measures approach, which relies on the idea that the monitoring of the provisions already in place, and the intervention of national authorities could improve and promote the access to dynamic fare data and promote the necessary trust level of all the involved parties. This solution will mainly rely on the monitoring of the Delegated Regulation (EU) 2017/1926, implementation of Directive (EU) 2016/2370 on the fourth railway package, which promotes the development of EU-wide through-ticketing system.

This wait and see approach would allow to explore the full potential of the EU legislation already in place. However, it entails the risk of increasing legal fragmentation.

3.2.2 Non-binding EU initiatives

A second recommendation is to adopt non-binding EU initiatives to provide guidance to national authorities and stakeholders when accompanying the development of integrated ticketing and payment services. Non-binding initiatives could cover these three aspects, which resulted as most problematic: (i) a Code of Conduct on data sharing, (ii) Guidelines on data sharing, integrated ticketing and payment systems related to Public Service Obligations, (iii) a clarification of the CJEU case law and competition rules applicable to exchange of information, revenue sharing and abuse of dominant position.

The guidelines would provide clarification and guidance to all the involved stakeholders on how to proceed in data sharing related to integrated ticketing and payment
systems. However, they would not have legally binding force, and therefore, their impact on the evidenced issues may be limited.

3.2.3 Legislative initiative

Finally, a third recommendation considers establishing new rules to bridge the identified gaps, in particular those concerning the conditions for access to fare data and the role of PSOs, while at the same time providing more legal clarity and ensuring consistent application of the legislative framework across the Union, addressing the existing fragmentation.

The third option, concerning new rules, could be carried out by means of either a legislative revision of already existing acts or the enactment of a new initiative.

The revision of the existing legislation shall take into account the fact that the Delegated Regulation (EU) 2017/1926 is a good framework to develop further initiatives and could therefore be amended moving from optional to mandatory access to dynamic data and including minimum standards for access points/interfaces. In addition, a revision of Regulation (EC) 80/2009 could allow opening the computerised reservation systems (CRS) code of conduct to other transport modes. The Regulation provides the basis for integrating other transport services, particularly rails and coaches, in the information and reservation system. However, currently, it applies only to air (and air-rail) travel, but not to rail-only or coach services.

Alternatively, the revision of the Delegated Regulation (EU) 2017/1926 could be replaced by the a new legislative initiative which would cover and expand the minimum set of essential data (including routes, stops, timetables, prices and the availability and accessibility of services) which are necessary to develop integrated ticketing and payment systems, while also focusing on user's rights.

All the public and private providers of mobility services would be requested to open up data about their services in open APIs, which should be in machine readable format. A definition of third-party service provider and its obligations would be included.

Yet, minimum obligations to provide access to fare data to third party service providers would not prevent the transport operators from selling tickets to end-users at lower prices, also including discounts and fidelity program.

According to stakeholders, the new legislative initiative should allow aggregators and distributors to compete in integrated ticketing offering discounts and promotions. In order to allow this, the standards for the interoperability which should be used by the service providers could include the minimum standards already developed for payment systems under the Payment Service Directive, in order to support the account based ticketing.

Finally, according to stakeholders, clear and European-wide legal requirements is necessary also for the (free) opening up and access to Secure Storage (SE) on mobile phones as well as for a fast access to data concerning the tickets stored in mobile phones and on data security and disclosure.

A new legislative initiative would require a complex decisional process at EU level, including the choice of the most appropriate legislative instrument. While delivering responsive legislation and regulation has been raised as necessary by the stakeholders, this must be appropriately designed to avoid that the legislation will prevent future technological developments or will become rapidly obsolete. In our opinion, certain elements of the integrated ticketing, such as the dynamic fare access, can only be addressed by a legislative intervention, while other technological aspects can also left to the market developments, where the best option will emerge.
As we have already mentioned, each option shall be accompanied by a market analysis and a new impact assessment.
Resumé exécutif

Objectif et portée de l’étude

L’objectif de cette étude est d’examiner et de fournir une analyse complète et neutre sur les défis liés à la mise en place de systèmes intégrés de billetterie et de paiement au niveau de l’Union Européenne (ci-après «UE») et sur les actions et initiatives possibles au niveau de l’UE qui pourraient être envisagées pour atteindre cet objectif. L’étude porte sur les modes de transport urbains et locaux ainsi que sur les transports longue distance et couvrent à la fois les opérateurs de transport publics et privés.

Bien qu’il n’existe pas de définition unique de la billetterie intégrée, celle-ci peut être définie comme l’achat d’un billet unique qui permet aux passagers de voyager en utilisant un ou plusieurs modes de transport fournis par plusieurs opérateurs22 ou comme «combinant tous les modes de transport en un seul billet» et qui est considéré comme le partenaire naturel des services multimodaux d’information et de planification de voyages.23

La chaîne de valeur de la billetterie intégrée

La billetterie intégrée vise à rendre le transport multimodal plus durable et plus attrayant pour les usagers en encourageant une utilisation plus efficace des infrastructures et des services existants et, partant, en améliorant la commodité et l’efficacité des transports publics. En fin de compte, elle peut contribuer à la réalisation d’objectifs tels que l’amélioration de la qualité de l’air, la réduction de la congestion routière, une plus grande efficacité du système de transport dans son ensemble, l’augmentation des capacités, l’inclusion sociale, la promotion de l’emploi et de l’innovation.

La mise en œuvre d’un système de billetterie intégré nécessite une intégration étroite au cours de l’exécution d’un certain nombre de phases de la chaîne du voyage, depuis la recherche d’informations sur le voyage par l’utilisateur jusqu’au partage des recettes entre les différents acteurs, en passant par la réservation, le paiement et la compensation, l’émission et la validation des billets, les changements possibles de réservation/réacheminement en cas d’erreurs ou de retards et la gestion des réclamations. Cela implique une interopérabilité fondée sur des normes communes (pour combiner les informations avant et pendant le voyage, les horaires, les schémas tarifaires, les cadres réglementaires et organisationnels, les systèmes de réservation et de paiement). Elle nécessite également l’intervention de différents acteurs qui travailleront ensemble et combineront leurs produits, idéalement dans différentes régions d’opération et à travers différents services.

Il s’ensuit que des milliers de contrats doivent être signés, y compris non seulement des accords techniques, mais aussi des accords commerciaux et politiques, obligeant les opérateurs de transport à faire circuler les prix des billets pour tous les segments.

1. La situation actuelle

À ce jour, il existe de nombreux exemples de billetterie électronique et intelligente, développés dans le cadre de projets de recherche financés par l’UE ou fournis par différents opérateurs de transport, start-ups ou partenariats public-privé. Toutefois, il

23 Vers une feuille de route pour la fourniture de services d’information, de planification et de billetterie sur les transports multimodaux à l’échelle de l’UE, SWD (2014) 194.
n’existe pas d’intégration complète au niveau européen permettant d’avoir un seul billet pour un voyage sans interruption, ce qui signifie qu'il n’est pas possible d’acheter un seul billet pour un voyage multimodal à travers l’Europe et d’assurer ainsi une couverture porte à porte à l’échelle européenne.

L’étude donne un aperçu du contexte actuel des systèmes intégrés de billetterie et de paiement en analysant l’expérience des passagers, le cadre juridique existant tant au niveau communautaire que national, les initiatives non législatives et les projets en place. Dans ce contexte, les principaux défis au développement de systèmes intégrés de billetterie et de paiement à l’échelle de l’UE sont identifiés et une série de recommandations visant à les surmonter est élaborée.

1.1 Panel de passagers

Un panel de passagers a été mis en place dans six États Membres (Belgique, France, Allemagne, Italie, Pologne et Royaume-Uni) afin d’évaluer l’expérience des passagers en matière de billetterie intégrée et la disponibilité des systèmes de billetterie intégrés existants par rapport à leurs besoins et attentes. Les conclusions du panel de consommateurs ont été complétées par des entretiens approfondis avec des associations de passagers et des organisations de consommateurs spécialisées dans les voyages. L’enquête a montré que les personnes interrogées dépendent fortement de trois principaux moyens de transport, à savoir les transports ferroviaires, les voitures (louées ou partagées) et les avions. Il est également apparu qu’il existe une demande potentielle sur le marché pour des services de billetterie intégrés. Les répondants ont jugé bonne leur expérience de voyage multimodal et ils semblaient particulièrement satisfaits par le gain de temps offert par l’achat d’un billet intégré. Cependant, les facteurs susceptibles d’améliorer leur expérience sont : des prix plus bas et davantage de promotions, la fourniture d’informations plus claires sur le service de transport et la création d’applications mobiles dédiées.

1.2 Cadre législatif

Dans le cadre de l’étude, le cadre juridique communautaire et national pertinent a été analysé, ce qui montre que l’élaboration et la mise en œuvre de systèmes de billetterie intégrés sont assez hétérogènes dans l’Union européenne. En fait, le niveau d’intégration peut varier de manière significative, même dans les régions d’un même pays24.

Au niveau européen, au cours des deux dernières décennies, depuis le Livre blanc sur la politique des transports de 2001, la Commission européenne a soutenu l'intégration des modes de transport. Par la suite, plusieurs initiatives législatives ont contribué à façonner le cadre juridique approprié pour les services intégrés de billetterie et de paiement. La législation pertinente en vigueur au niveau de l’UE consiste, en premier lieu, dans la directive 2010/40/UE (directive STI)25 et du règlement délégué (UE) 2017/1926 concernant la fourniture de services d’information multimodale sur les voyages à l’échelle de l'UE. En outre, la directive 2016/2370 (directive ferroviaire)26, qui vise à améliorer l’interopérabilité, prévoit des règles spécifiques sur l’information

24 Le recours au transport intermodal est par exemple plus prononcé dans les villes italiennes de plus de 100.000 habitants. En Pologne, le système de cartes et de tickets de la ville de Varsovie est le système le plus avancé (et le plus ancien) de ce type et couvre le plus grand nombre de modes de transport (tramways, trains, bus, métro et programme de vélo en libre-service en ville).


Parallèlement à la législation de l'UE, une cartographie juridique des initiatives législatives actuelles en matière de billetterie intégrée au niveau national a été réalisée, montrant que les gouvernements d’un nombre croissant de pays sont intéressés par la promotion de l'intégration des billets et, dans certains cas, un certain nombre de projets spécifiques sont en cours, et une nouvelle législation est en discussion ou en préparation (Estonie, Hongrie et Croatie). Six États membres ont déjà adopté ou présenté des propositions législatives concernant la billetterie intégrée. Dans la plupart des cas, cela résulte principalement de la mise en œuvre nationale du règlement délégué (UE) 2017/1926. En particulier, un cadre juridique complet a été réalisé. Les initiatives législatives sont gérées par le Parlement européen, mais leur mise en œuvre est généralement assurée par les gouvernements nationaux. En raison des différences de réglementation, la mise en place de systèmes de billetterie intégrée peut se faire de manière différente dans chaque pays. Les règlements nationaux sont également importants pour garantir que les systèmes de billetterie soient conformes aux exigences législatives.

35 Publication imminente.
36 Contrat d’étude n° MOVE / BS / SER / 2016-77 / SI2.760997
adopté en Finlande, où la loi finlandaise sur les services de transport prévoit des dispositions sur l’ouverture d’interfaces pour les billets aller simple au prix normal dans le trafic routier et ferroviaire. De même, un projet de loi français présenté en novembre 2018 impose l’ouverture des données de mobilité en temps réel et accélère le calendrier européen de mise en œuvre du Règlement Délégué (UE) 2017/1926 concernant les données statiques de trafic et de déplacement qui seront mises à disposition sur les Points d’Accès Nationaux (PAN). Un projet de loi similaire a été présenté au Danemark en décembre 2018, dans le but de regrouper les fonctions de la carte de voyage et du plan de voyage en un seul service de mobilité numérique au sein d’une société gérée par un comité mixte. En vertu du projet de loi danois, les entreprises de transport public doivent fournir gratuitement à des tiers certaines données statiques et dynamiques sur les transports.

Des initiatives non législatives ont également été prises afin d’aider les opérateurs, les autorités locales et les administrateurs de systèmes à évaluer la conformité des systèmes de billetterie au droit de la concurrence. Un exemple en est le “Public Transport Ticketing Schemes Block Exemptions” britannique, adopté par l’Autorité de la concurrence et des marchés en 2016 afin de clarifier, du point de vue du droit de la concurrence, ce qui est autorisé dans les systèmes de billetterie intégrés, notamment en termes de partage des informations tarifaires.

1.3. Projets existants

Onze projets (y compris des projets financés par l’UE) de portée transfrontalière (dans toute l’UE, à l’exception du projet BMC, dont l’objet est les régions frontalières de Belgique, de France, d’Allemagne et du Luxembourg) ont été identifiés et examinés pour jeter les bases de l’étude, identifiant les meilleures pratiques et les impacts positifs de la billettique intégrée.

En outre, d’autres projets de dimension nationale ont été étudiés. On peut citer comme exemples la Suède (avec le système Resplus disponible dans le pays depuis 1994) et les Pays-Bas (avec la carte de voyage OV-chipkaart lancée en 2001), qui sont deux précurseurs en matière de billetterie multimodale nationale et de paiement intelligent pour tous les modes de transport. D’autres exemples sont, entre autres, en Allemagne (avec la VDV Core Application), au Danemark (avec la carte de voyage électronique Rejsekort), en Belgique (avec la carte MoBIB, créée en 2010), en Irlande (la Leap Card, lancée en 2012).

L’analyse des projets existants a montré que, s’il n’existe pas à l’heure actuelle de système de billetterie intégré multimodal transfrontalier complet, l’intérêt pour des systèmes intégrés de billetterie et de paiement à l’échelle européenne est évident. Toutefois, l’étude de ces projets a déjà révélé certains obstacles et défis (p. ex. l’intégration des prix, les incertitudes réglementaires, les défis technologiques, le manque de coopération). Ces obstacles et défis sont principalement liés à l’accès aux données et à la coopération entre les parties prenantes. Sur la base des projets examinés et des initiatives du secteur, aucun obstacle technique à la réalisation de l’interopérabilité entre les systèmes des prestataires de services de voyage n’est apparu.

37 Loi sur les services de transport du 1er juillet 2018 :
38 Projet de loi d’orientation des mobilités (LOM) : NOR : TRET1821032L/Bleue-2.
39 L 129 Proposition de loi modifiant la loi danoise sur les sociétés de transport et la loi sur les chemins de fer.
40 Ordonnance de 1998 sur la concurrence (règlement d’exemption par catégorie relatif aux systèmes de billetterie dans les transports publics).
41 European Travellers Club, FSM, IT²RAIL, MaaS Alliance, MASAI, MobiWallet, Smart Ticketing Alliance, EuTravel, Bonvoyage, BMC, All ways Traveling.
42 Tous les projets analysés avaient une portée nationale ou locale.
2. Principaux défis pour les systèmes intégrés de billetterie et de paiement

Les résultats de l'étude ont mis en évidence certains obstacles juridiques et commerciaux découlant de la mise en œuvre d'un système intégré de billetterie et de paiement.

2.1. Obstacles juridiques

D'un point de vue juridique, les obstacles les plus perçus étaient principalement (i) l'absence d'un cadre juridique multimodal complet pour les services de réservation, de billetterie et de paiement, (ii) les obligations de service public et la compensation, ainsi que (iii) le manque d'accès aux données tarifaires.

En fait, la législation existante est principalement conçue pour les systèmes de transport conventionnels, en particulier les modes de transport fournis et consommés séparément. Étant donné que différents modes de transport et systèmes de paiement sont concernés par la billetterie intégrée, qui sont soumis à des dispositions communautaires et nationales différentes, des incertitudes subsistent quant à la législation applicable, notamment dans un contexte transfrontalier. En outre, un cadre réglementaire complexe comportant de multiples niveaux réglementaires nationaux et internationaux pourrait entraver le développement de nouveaux services et entraîner des risques supplémentaires pour les investissements dans la fourniture de modèles intégrés de billetterie.

En ce qui concerne les OSP et l'accès aux données tarifaires, les conclusions de l'étude montrent que si les opérateurs de transport soumis à des obligations de service public ont, dans une certaine mesure, l'obligation de fournir des données, d'autre part, afin de créer un système efficace, il est nécessaire d'accéder également aux données des opérateurs non OSP ou commerciaux. Selon certaines parties prenantes, cela peut être considéré comme un obstacle au partage des recettes dans la billetterie intégrée car il est difficile de répartir les recettes sur toute la chaîne de valeur tout en envisageant une compensation pour la partie du trajet effectuée par l'opérateur OSP.

En outre, des difficultés pour des tiers dans le développement d'un produit de billetterie intégrée peuvent découler du fait que les opérateurs d'OSP, en raison des clauses de confidentialité liées aux tarifs subventionnés, peuvent être exemptés de fournir l'accès aux données tarifaires.

2.2. Obstacles commerciaux

D'un point de vue commercial, les principaux obstacles identifiés sont particulièrement pertinents pour les acteurs privés. Il s'agit notamment de l'interopérabilité et de la capacité à investir dans les développements technologiques (particulièrement handicapant pour les petites et moyennes entreprises et les opérateurs de transport avec des contrats de service public de courte durée), de l'utilisation de différents modes de vente et de distribution et des accords de licence et de distribution qui entrent en jeu lorsque la technologie des systèmes existants est propriétaire et ne peut être utilisée par d'autres fournisseurs de services.

En outre, l'adoption de modèles économiques de billetterie intégrée dépend des choix commerciaux des opérateurs de transport, des vendeurs et des agrégateurs. Par conséquent, en raison du grand nombre d'acteurs, la coordination et la coopération entre eux ainsi que la liberté commerciale et l'accès au marché peuvent constituer des obstacles supplémentaires, en raison des intérêts contradictoires qu'ils peuvent avoir. Un autre obstacle à l'intégration identifié est le fait que les vendeurs/agrégeateurs de billets n'offrent pas d'assistance aux clients, ce qui pourrait nuire à la réputation des prestataires de services de transport.

De plus, trouver le juste équilibre entre le partage des recettes et la gestion des tarifs semble être une question en suspens. Comme on l'a vu, la billetterie intégrée exige
que tous les participants au système fassent circuler les prix des billets pour tous les segments et que les parties concernées conviennent de commissions à payer pour le détaillant principal. Par conséquent, il y a un règlement et une compensation à effectuer.

Pour une introduction réussie des systèmes de billetterie intégrés, des méthodes de paiement et de validation faciles et attrayantes devraient être proposées. A cet égard, selon certaines parties prenantes, un autre obstacle technique et commercial à l'intégration de la billetterie réside dans le fait que les lecteurs habitués à contrôler les billets ne sont pas en mesure de lire les billets dans tous les formats disponibles. Beaucoup d'entre eux ne peuvent lire que les tickets stockés dans des cartes, les téléphones portables et/ou sous forme de code-barres. Il existe des normes communes pour les lecteurs de cartes de paiement sans contact, mais celles-ci reposent sur la confiance entre les systèmes pour partager les clés de sécurité.

Enfin, sur le marché de la distribution/vente, certains répondants à la consultation ont mentionné, comme un obstacle possible, le refus des opérateurs de transport de conclure des accords de distribution, dans certains cas associé au pouvoir de marché des prestataires de services de transport. Le contrôle des interfaces de vente par les opérateurs historiques en tant que moyen de contrôler la relation avec le client a été considérée comme la raison pour laquelle de tels refus peuvent se produire.

3. Conclusions et recommandations

3.1. Principales conclusions

Les résultats de la recherche documentaire, des entretiens et de l’atelier ont montré que le système intégré de billetterie et de paiement nécessite une coopération harmonieuse entre les différents acteurs. Toutefois, des problèmes subsistent dans certains domaines, tels que: la définition plus précise des conditions d’accès aux données par des tiers; la coopération difficile entre les parties prenantes; les négociations complexes et longues pour obtenir des licences et des accords de distribution; la nécessité de développer des normes communes et des interfaces communes; la nécessité de trouver une solution concernant le partage des recettes tarifaires afin d’impliquer également les systèmes de paiement. Néanmoins, malgré les difficultés juridiques et commerciales, l’étude révèle un intérêt évident pour les systèmes intégrés de billetterie et de paiement.

Le grand nombre d’opérateurs de transport locaux et régionaux différents, chacun développant son propre programme, entraîne des coûts de transaction plus élevés pour les fournisseurs de billets intégrés. Dans ce contexte, les législateurs nationaux prennent déjà des initiatives pour promouvoir l’accès aux données en vue d’une mobilité intégrée, allant au-delà de la base du règlement délégué (UE) 2017/1926. Toutefois, ces initiatives législatives risquent d’accroître la fragmentation et les obstacles dans l'UE, puisqu'elles sont principalement axées sur les marchés nationaux.

En outre, il est apparu que l'absence d'un cadre juridique commun et l'hétérogénéité des règles nationales concernant les services de transport routier et ferroviaire, notamment à courte distance, sont considérés comme un problème majeur.

Il ressort de la consultation des parties prenantes qui a été menée que la majorité des personnes interrogées sont favorables à une initiative législative communautaire, du moins pour couvrir les aspects transfrontaliers de l'intégration.

Afin de combler les lacunes identifiées, nous recommandons un certain nombre de solutions possibles. Toutefois, à notre avis, une analyse approfondie du marché devrait être effectuée, y compris une définition des marchés pertinents, avant de mettre en œuvre l’une ou l’autre des solutions recommandées. Elles ont été
regroupées en trois grands types de mesures : pas de nouvelles mesures, mesures non contraignantes, initiative législative.

3.2. Solutions possibles

3.2.1. Pas de nouvelles mesures

Une première solution est l'approche sans nouvelles mesures, qui repose sur l'idée que le suivi des dispositions déjà en place et l'intervention des autorités nationales pourraient améliorer et promouvoir l'accès à des données tarifaires dynamiques et promouvoir le niveau de confiance nécessaire de toutes les parties concernées. Cette solution reposera principalement sur le suivi de la mise en œuvre du Règlement Délégué (UE) 2017/1926, de la Directive (UE) 2016/2370 sur le quatrième paquet ferroviaire, qui encourage le développement d'un système de billetterie directe à l'échelle européenne.

Cette approche attentiste permettrait d'explorer tout le potentiel de la législation communautaire déjà en place. Toutefois, elle comporte le risque d'une fragmentation juridique croissante.

3.2.2. Mesures non contraignantes

Une deuxième recommandation consiste à adopter des initiatives non contraignantes de l'UE pour fournir des orientations aux autorités nationales et aux parties prenantes lorsqu'elles accompagnent le développement de services intégrés de billetterie et de paiement. Des lignes directrices non contraignantes pourraient couvrir ces trois aspects, qui se sont révélés les plus problématiques : (i) un code de conduite sur le partage des données, (ii) des lignes directrices sur le partage des données, les systèmes intégrés de billetterie et de paiement liés aux obligations de service public, (iii) une clarification de la jurisprudence de la CJUE et des règles de concurrence applicables aux échanges d'informations, au partage des recettes et aux abus de position dominante.

Les lignes directrices fourniraient des éclaircissements et des conseils à tous les intervenants concernés sur la façon de procéder au partage des données relatives aux systèmes intégrés de billetterie et de paiement. Toutefois, elles n'auraient pas force exécutoire et, par conséquent, leur incidence sur les questions mises en évidence pourrait être limitée.

3.2.3. Initiative législative européenne

Enfin, une troisième recommandation envisage d'établir de nouvelles règles pour combler les lacunes identifiées, en particulier celles concernant les conditions d'accès aux données tarifaires et le rôle des OSP, tout en apportant une plus grande clarté juridique et en assurant une application cohérente du cadre législatif dans l'ensemble de l'Union, afin de remédier à la fragmentation existante.

La troisième option, concernant les nouvelles règles, pourrait être mise en œuvre soit par une révision législative des lois déjà existantes, soit par l'adoption d'une nouvelle initiative.

La révision de la législation existante tiendra compte du fait que le règlement délégué 2017/1926 constitue un bon cadre pour développer de nouvelles initiatives et pourrait donc être modifié en passant d'un accès facultatif à un accès obligatoire aux données dynamiques et en incluant des normes minimales pour les points d'accès/interfaces..

En outre, une révision du règlement (CE) n° 80/2009 pourrait permettre d'ouvrir le code de conduite des systèmes informatisés de réservation (SIR) à d'autres modes de transport. Le règlement jette les bases de l'intégration d'autres services de transport, en particulier les chemins de fer et les autocars, dans le système d'information et de réservation. Toutefois, à l'heure actuelle, elle ne s'applique qu'aux voyages en avion.
(et en avion-rail), mais pas aux services exclusivement ferroviaires ou aux services d’autocars.

Alternativement, la révision du règlement délégué 2017/1926 pourrait être remplacée par une nouvelle initiative législative qui couvrirait et élargirait l’ensemble minimal de données essentielles (y compris les itinéraires, les arrêts, les horaires, les prix, la disponibilité et l’accessibilité des services) qui sont nécessaires pour développer des systèmes intégrés de billetterie et de paiement, tout en se concentrant également sur les droits des utilisateurs.

Tous les fournisseurs publics et privés de services de mobilité seraient invités à ouvrir les données relatives à leurs services dans des API ouvertes, et dans un format lisible par machine. Une définition du fournisseur de services tiers et de ses obligations serait incluse.

Toutefois, des obligations minimales de fournir l’accès aux données tarifaires à des fournisseurs de services tiers n’empêcheraient pas les transporteurs de vendre des billets aux utilisateurs finals à des prix inférieurs, y compris des rabais et un programme de fidélisation.

Selon les parties prenantes, la nouvelle initiative législative devrait permettre aux agréateurs et aux distributeurs d’être en mesure de se faire concurrence dans le domaine de la billetterie intégrée offrant des rabais et des promotions. Pour ce faire, les normes d’interopérabilité qui devraient être utilisées par les prestataires de services pourraient inclure les normes minimales déjà élaborées pour les systèmes de paiement dans le cadre de la directive sur les services de paiement, afin de soutenir l’émission de billets sur compte.

Enfin, selon les parties prenantes, des exigences juridiques claires et à l’échelle européenne sont également nécessaires pour l’ouverture (gratuite) et l’accès au stockage sécurisé (SE) sur les téléphones mobiles, ainsi que pour un accès rapide aux données concernant les billets stockés dans les téléphones mobiles et la sécurité et la divulgation des données.

Une nouvelle initiative législative nécessiterait un processus décisionnel complexe à l’âge communautaire y compris le choix de l’instrument législatif le plus approprié. Bien que les parties prenantes aient soulevé la question de l’adoption d’une législation et d’une réglementation adaptées aux besoins, celles-ci doivent être conçues de manière appropriée pour éviter que la législation n’empêche de futurs développements technologiques ou ne devienne rapidement obsolète. À notre avis, certains éléments de la billetterie intégrée, tels que l’accès tarifaire dynamique, ne peuvent être abordés que par une intervention législative, tandis que d’autres aspects technologiques peuvent également être laissés aux développements du marché, où la meilleure option émergera.

Comme nous l’avons déjà mentionné, chaque option devrait être accompagnée d’une analyse de marché et d’une nouvelle analyse d’impact.
Einführung
Ziel und Umfang der Studie
Ziel dieser Studie ist es, die Herausforderungen bei der Bereitstellung von Fahrgästen mit EU-weiten integrierten Ticketing- und Zahlungssystemen sowie die möglichen Aktionen und Initiativen auf EU-Ebene zur Erreichung dieses Ziels zu untersuchen und eine umfassende und neutrale Analyse vorzulegen. Die Studie umfasst städtische und lokale Verkehrsträger sowie den Fernverkehr und umfasst sowohl öffentliche als auch private Verkehrsunternehmen.

Obwohl es keine eindeutige Definition des integrierten Ticketings gibt, kann dies definiert werden als der Kauf eines einzigen Tickets, das es den Fahrgästen ermöglicht, mit verschiedenen Verkehrsmitteln eines oder mehrerer Betreiber zu reisen, oder als "Kombination aller Verkehrsmittel in einem einzigen Ticket" und gilt als der natürliche Partner für multimodale Reiseinformations- und Planungsdienste.

Die integrierte Ticketing-Wertschöpfungskette


Daraus folgt, dass Tausende von Verträgen unterzeichnet werden müssen, darunter nicht nur technische, sondern auch wirtschaftliche und politische Vereinbarungen, die die Verkehrsbetriebe verpflichten, die Ticketpreise für alle Segmente zu verteilen.

1. Die aktuelle Situation
Bislang gibt es zahlreiche Beispiele für elektronisches und intelligentes Ticketing, das im Rahmen von EU-finanzierten Forschungsprojekten entwickelt oder von verschiedenen Verkehrsbetrieben, Start-ups oder öffentlich-privaten Partnerschaften angeboten wird. Eine vollständige EU-Integration, die es ermöglicht, ein einziges

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43 Integriertes Ticketing für Personenfernverkehrsdienste, Studie des Europäischen Parlaments, 2012, Seite 15

44 Auf dem Weg zu einem Fahrplan für die Bereitstellung EU-weiter multimodaler Reiseinformations-, Planungs- und Ticketing-Dienstleistungen, SWD (2014) 194.
Ticket für eine nahtlose Fahrt zu haben, wurde jedoch nicht erreicht, so dass es nicht möglich ist, ein einziges Ticket für eine multimodale Fahrt durch Europa zu kaufen und so eine EU-weite Haus-zu-Haus-Versorgung zu gewährleisten.

Die Studie gibt einen Überblick über den bestehenden Kontext für integrierte Ticketing- und Zahlungssysteme durch Analyse der Fahrgasterfahrungen, den bestehenden Rechtsrahmen sowohl auf EU- als auch auf nationaler Ebene, die nichtlegislativen Initiativen und die laufenden Projekte. Vor diesem Hintergrund werden die zentralen Herausforderungen für die Entwicklung EU-weiter integrierter Ticketing- und Zahlungssysteme identifiziert und eine Reihe von Empfehlungen zu ihrer Überwindung entwickelt.

1.1. Fahrgastpanel

In sechs Mitgliedstaaten (Belgien, Frankreich, Deutschland, Italien, Polen und dem Vereinigten Königreich) wurde ein Fahrgastpanel eingerichtet, um die Erfahrungen der Fahrgäste mit dem integrierten Ticketing und die Verfügbarkeit der bestehenden integrierten Ticketing-Systeme im Hinblick auf ihre Bedürfnisse und Erwartungen zu bewerten. Die Ergebnisse des Verbraucherpanels wurden durch eingehende Interviews mit Fahrgastverbänden und Verbraucherorganisationen, die sich auf Reisen spezialisiert haben, ergänzt. Die Umfrage hat gezeigt, dass die Befragten stark auf drei Hauptverkehrsmittel angewiesen sind, nämlich Schienenverkehr, Autos (gemietet oder gemeinsam genutzt) und Flugzeuge. Es hat sich auch gezeigt, dass auf dem Markt eine potenzielle Nachfrage nach einem integrierten Ticketing-Service besteht. Die Befragten bewerteten ihr multimodales Reiseerlebnis als gut und zeigten sich besonders zufrieden mit den zeitsparenden Möglichkeiten des Tickets. Faktoren, die ihr Erlebnis verbessern können, sind jedoch: günstigere Preise und mehr Werbeaktionen, die Bereitstellung klarerer Informationen über den Verkehrsdienst und die Entwicklung spezieller mobiler Anwendungen.

1.2. Gesetzlicher Rahmen

Im Rahmen der Studie wurden die relevanten EU- und nationalen Rechtsrahmen analysiert, die zeigen, dass die Entwicklung und Umsetzung integrierter Ticketing-Systeme in der Europäischen Union recht heterogen ist. Tatsächlich kann der Grad der Integration sogar in den Regionen desselben Landes erheblich voneinander abweichen.45


45 Die Nutzung des intermodalen Verkehrs ist beispielsweise in italienischen Städten mit mehr als 100.000 Einwohnern stärker ausgeprägt. In Polen ist das Warschauer Stadtkarten- und Ticketsystem das fortschrittlichste (und älteste) System dieser Art und deckt die größte Anzahl von Verkehrsmitteln (Straßenbahnen, Züge, Busse, U-Bahn und City-Bike-Sharing-Programm) ab.

(Eisenbahnrichtlinie)\textsuperscript{47}, die auf die Verbesserung der Interoperabilität abzielt, spezifische Vorschriften für gemeinsame Informations- und Durchfahrtsysteme vor. Die Entwicklung eines EU-weiten integrierten Ticketing- und Zahlungssystems bezieht sowohl die Betreiber öffentlicher Verkehrsmittel als auch private Unternehmen ein. Daher berücksichtigt der einschlägige Rahmen auch die besonderen Regeln für Betreiber, die öffentliche Dienstleistungen erbringen (gemeinwirtschaftliche Verpflichtungen). Diese sind in der Verordnung (EG) 1370/2007\textsuperscript{48}, der Verordnung (EWG) 3577/92\textsuperscript{49} und der Luftverkehrsverordnung (EG) 1008/2008\textsuperscript{50} festgelegt.

Jedes Element der Reisekette benötigt für die Erbringung der Dienstleistung Zugriff auf verschiedene Daten. Damit ein integriertes Ticketing- und Zahlungssystem funktionieren kann, ist der Zugriff auf Daten (sowohl statische als auch dynamische) unerlässlich. Ein weiterer wichtiger Aspekt bei der Entwicklung integrierter Ticketing- und Zahlungssysteme ist der Datenaustausch. In diesem Zusammenhang sind die einschlägigen EU-Rechtsakte die Richtlinie (EU) 2015/2366 (Zahlungsdiensterichtlinie, PSD2)\textsuperscript{51}, die der EU-Meilenstein beim Austausch von Bankdaten ist; die Richtlinie (EU) 2019/1024 über offene Daten und die Weiterverwendung von Informationen des öffentlichen Sektors (Offene Datenrichtlinie)\textsuperscript{52}; die Verordnung (EU) 2018/1807 über einen Rahmen für den freien Verkehr von nicht personenbezogenen Daten\textsuperscript{53}; Verordnung (EG) 80/2009 über einen Verhaltenskodex für computergesteuerte Reservierungssysteme\textsuperscript{54}; Richtlinie (EU) 2016/943 (Geschäftsgeheimnisrichtlinie)\textsuperscript{55};


und die kürzlich verabschiedete Verordnung (EU) 2019/1150 zur Förderung von Fairness und Transparenz für Geschäftskunden von Online-Vermittlungsdiensten 56.

Die Fahrgastrechte im multimoralen Kontext wurden in einer separaten explorativen Studie behandelt 57.


Auch nichtlegislative Initiativen wurden ergriffen, um den Betreibern, lokalen Behörden und Systemadministratoren zu helfen, die Einhaltung der wettbewerbsrechtlichen Vorschriften bei Ticketingsystemen zu bewerten. Ein Beispiel ist das Vereinigte Königreich, mit der "Public Transport Ticketing Schemes Group Exemption" 61, die 2016 von der Wettbewerbsbehörde verabschiedet wurde, um aus wettbewerbsrechtlicher Sicht zu klären, was in integrierten Ticketing-Systemen erlaubt ist, insbesondere im Hinblick auf den Austausch von Preisinformationen.

1.3. Bestehende Projekte


57 Studienvertrag Nr. MOVE/B5/SER/ 2016-77/SI2.760997


59 Mobilitätsorientierungsgesetz (LOM), NOR: TRET1821032L/Bleue-2.

60 L 129 Vorschlag für ein Gesetz zur Änderung des dänischen Transportunternehmensgesetzes und des Eisenbahngesetzes.

Elf Projekte (einschließlich EU-finanzierten Projekte) mit grenzüberschreitendem Charakter (EU-weit, mit Ausnahme des BMC-Projekts, dessen Gegenstand die Grenzregionen Belgien, Frankreich, Deutschland und Luxemburg sind) wurden identifiziert und überprüft, um die Grundlage für die Studie zu schaffen, die bewährte Verfahren und positive Auswirkungen des integrierten Ticketing identifiziert.


2. Wichtigste Herausforderungen für integrierte Ticketing- und Zahlungssysteme

Die Ergebnisse der Studie haben einige rechtliche und kommerzielle Hindernisse aufgezeigt, die sich aus der Implementierung eines integrierten Ticketing- und Zahlungssystems ergeben.

2.1. Rechtliche Barrieren

 Aus rechtlicher Sicht wurden Fragen, die sich hauptsächlich auf das Fehlen eines umfassenden multimodalen Rechtsrahmens für Buchungs-, Ticketing- und Zahlungsdienste, (ii) gemeinwirtschaftliche Verpflichtungen und Ausgleichszahlungen sowie (iii) mangelnden Zugang zu Fahrgelddaten beziehen, als die am häufigsten wahrgenommenen Hindernisse identifiziert.

Tatsächlich sind die bestehenden Rechtsvorschriften hauptsächlich für konventionelle Verkehrssysteme konzipiert, insbesondere für Verkehrsträger, die separat angeboten und genutzt werden. Da verschiedene Verkehrsträger und Zahlungssysteme am integrierten Ticketing beteiligt sind, die unterschiedlichen EU- und nationalen Vorschriften unterliegen, bestehen Unsicherheiten hinsichtlich der geltenden Gesetzgebung, insbesondere im grenzüberschreitenden Kontext. Darüber hinaus könnte ein komplexer regulatorischer Rahmen mit mehreren nationalen und internationalen Regulierungsebenen die Entwicklung neuer Dienste behindern und zusätzliche Risiken für Investitionen in die Bereitstellung integrierter Ticketing-Modelle bergen.

62 European Travellers Club, FSM, IT²RAIL, MaaS Alliance, MASAI, MobiWallet, Smart Ticketing Alliance, EuTravel, Bonvoyage, BMC, All ways Travelling.

63 Alle analysierten Projekte waren national oder lokal angelegt.
Was die PSOs und den Zugang zu Fahrpreisdaten betrifft, so zeigen die Ergebnisse der Studie, dass die Verkehrsunternehmen, die im Rahmen der gemeinwirtschaftlichen Verpflichtungen verpflichtet sind, zwar in gewissem Maße verpflichtet sind, Daten zur Verfügung zu stellen, um ein effizientes System zu schaffen, dass aber auch der Zugang zu Daten von Nicht-PSOs oder kommerziellen Betreibern erforderlich ist. Nach Ansicht einiger Interessenvertreter kann dies als Hindernis für die Aufteilung der Einnahmen im integrierten Ticketing angesehen werden, da es schwierig ist, die Einnahmen über die gesamte Wertschöpfungskette zu verteilen und gleichzeitig eine Kompensation für den vom PSO-Betreiber bereitgestellten Teil der Reise in Betracht zu ziehen.

Darüber hinaus können Schwierigkeiten für Dritte bei der Entwicklung eines integrierten Ticketingsystems dadurch entstehen, dass die Betreiber von PSOs aufgrund von Vertraulichkeitsklauseln in Bezug auf die subventionierten Tarife von der Bereitstellung des Zugangs zu Fahrgelddaten ausgenommen werden können.

2.2. Kommerzielle Barrieren

Aus kommerzieller Sicht sind die identifizierten Haupthindernisse für private Akteure besonders relevant.

Dazu gehören beispielsweise die Interoperabilität und die Fähigkeit, in technologische Entwicklungen zu investieren (insbesondere die Behinderung kleiner und mittlerer Unternehmen und Verkehrsuntemehmen mit kurzen öffentlichen Dienstleistungsaufträgen), die Nutzung verschiedener Vertriebsformen sowie die Lizenz- und Vertriebsvereinbarungen, die ins Spiel kommen, wenn die Technologie bestehender Systeme proprietär ist und für andere Dienstleister nicht zugänglich ist.

Darüber hinaus hängt die Einführung integrierter Ticket-Geschäftsmodele von der kommerziellen Wahl der Verkehrsbetreiber, Verkäufer und Aggregatoren ab. Aufgrund der großen Zahl von Interessengruppen können die Koordinierung und Zusammenarbeit zwischen ihnen, die kommerzielle Freiheit und der Marktzugang aufgrund der gegensätzlichen Interessen, die sie haben können, weitere Hindernisse darstellen.

Ein weiteres identifiziertes Integrationshemmnis ist die Tatsache, dass Ticketverkäufer/Aggregatoren den Kunden keine Unterstützung anbieten, was den Ruf der Anbieter von Verkehrsdienstleistungen beeinträchtigen könnte.

Darüber hinaus scheint es noch offen zu sein, die richtige Balance zwischen Ertragssteuerung und Fahrgeldmanagement zu finden. Wie bereits erwähnt, verlangt das integrierte Ticketing, dass alle Teilnehmer des Systems die Ticketpreise für alle Segmente verteilen, und die beteiligten Parteien müssen sich auf die Provisionen einigen, die für den Lead Retailer zu zahlen sind. Dementsprechend ist eine Abrechnung und ein Ausgleich durchzuführen.


von Verkehrsdienstleistungen, als mögliches Hindernis genannt. Die Kontrolle der Verkaufsschnittstellen durch die etablierten Betreiber zur Kontrolle der Beziehung zum Kunden wurde als Grund für die Ablehnung dieser Maßnahmen angesehen.

3. Schlussfolgerungen und Empfehlungen

3.1. Wichtigste Ergebnisse

Die Ergebnisse der Desk-Recherche, Interviews und des Workshops zeigten, dass integrierte Ticketing- und Zahlungssysteme eine reibungslose Zusammenarbeit verschiedener Akteure erfordern. Es gibt jedoch Bereiche, in denen noch Fragen offen sind, wie z.B.: die genauere Festlegung der Bedingungen für den Datenzugang durch Dritte; die schwierige Zusammenarbeit zwischen den Beteiligten; komplexe und langwierige Verhandlungen über Lizenzen und Vertriebsvereinbarungen; die Notwendigkeit der Entwicklung gemeinsamer Normen und gemeinsamer Schnittstellen; die Notwendigkeit, eine Lösung für die Aufteilung der Fahrpreise auch unter Einbeziehung der Zahlungssysteme zu finden. Dennoch zeigt die Studie trotz der rechtlichen und wirtschaftlichen Schwierigkeiten ein deutliches Interesse an integrierten Ticketing- und Zahlungssystemen.

Die Vielzahl der verschiedenen lokalen und regionalen Verkehrsbetriebe, die jeweils ein eigenes Programm entwickeln, führt zu höheren Transaktionskosten für integrierte Ticketing-Anbieter. In diesem Zusammenhang ergreifen die nationalen Gesetzgeber bereits Initiativen zur Förderung des Datenzugangs für die integrierte Mobilität und gehen damit über die Grundlage der delegierten Verordnung (EU) 2017/1926 hinaus. Diese Gesetzesinitiativen können jedoch die Fragmentierung und Barrieren in der gesamten EU verstärken, da sie sich hauptsächlich auf die nationalen Märkte konzentrieren.

Darüber hinaus hat sich gezeigt, dass das Fehlen eines gemeinsamen Rechtsrahmens und der Heterogenität der nationalen Vorschriften für Straßen- und Schienenverkehrsdienste, insbesondere für kurze Strecken, als ein wichtiges Thema angesehen werden.

Aus der durchgeführten Konsultation der Interessengruppen ging hervor, dass die Mehrheit der Befragten für eine EU-Gesetzgebungsinitiative ist, zumindest um die grenzüberschreitenden Aspekte der Integration abzudecken.


3.2. Lösungsansätze

3.2.1 Keine neuen Maßnahmen

Eine erste Lösung ist der Ansatz der Keine neuen Maßnahmen, der sich auf die Idee stützt, dass die Überwachung der bereits bestehenden Bestimmungen und die Intervention der nationalen Behörden den Zugang zu dynamischen Fahrgelddaten verbessern und fördern und das notwendige Vertrauen aller Beteiligten fördern könnten. Diese Lösung wird sich hauptsächlich auf die Überwachung der delegierten Verordnung (EU) 2017/1926, die Umsetzung der Richtlinie (EU) 2016/2370 über das vierte Eisenbahnpaket stützen, das die Entwicklung eines EU-weiten Durchfahrtsystems fördert.
Dieser abwartende Ansatz würde es ermöglichen, das volle Potenzial der bereits bestehenden EU-Rechtsvorschriften zu nutzen. Sie birgt jedoch die Gefahr einer zunehmenden rechtlichen Fragmentierung.

3.2.2 Unverbindliche EU-Initiativen

Eine zweite Empfehlung besteht darin, unverbindliche EU-Initiativen zu verabschieden, die den nationalen Behörden und Interessengruppen Leitlinien für die Begleitung der Entwicklung integrierter Ticketing- und Zahlungsdienste bieten.

Die unverbindlichen Initiativen könnten diese drei Aspekte abdecken, die sich als die problematischsten erwiesen haben: (i) einen Verhaltenskodex für den Datenaustausch, (ii) Leitlinien für den Datenaustausch, integrierte Ticketing- und Zahlungssysteme im Zusammenhang mit gemeinschaftlichen Verpflichtungen, (iii) eine Klarstellung der Rechtsprechung des Europäischen Gerichtshofs und der Wettbewerbsregeln für den Informationsaustausch, die Aufteilung der Einnahmen und den Missbrauch einer beherrschenden Stellung.Die Leitlinien würden allen Beteiligten Klarheit und Leitlinien für das weitere Vorgehen beim Datenaustausch im Zusammenhang mit integrierten Ticketing- und Zahlungssystemen geben. Sie hätten jedoch keine rechtsverbindliche Wirkung, so dass ihre Auswirkungen auf die aufgezeigten Fragen begrenzt sein können.

3.2.3 Gesetzgebungsinitiative

Schließlich erwägt eine dritte Empfehlung die Festlegung neuer Regeln zur Überbrückung der festgestellten Lücken, insbesondere in Bezug auf die Bedingungen für den Zugang zu Fahrgeldaten und die Rolle der PSO, bei gleichzeitiger Schaffung von mehr Rechtsklarheit und Gewährleistung einer kohärenten Anwendung des Rechtsrahmens in der gesamten Union, wobei der bestehenden Fragmentierung Rechnung getragen wird.

Die dritte Option, die neue Vorschriften betrifft, könnte entweder durch eine legislative Überarbeitung bereits bestehender Rechtsakte oder durch den Erlass einer neuen Initiative erfolgen.


Alternativ könnte die Überarbeitung der delegierten Verordnung (EU) 2017/1926 durch eine neue Gesetzesinitiative ersetzt werden, die den Mindestbestand an wesentlichen Daten (einschließlich Strecken, Haltestellen, Fahrplänen, Preisen sowie der Verfügbarkeit und Zugänglichkeit von Diensten) abdeckt und erweitert, die für die Entwicklung integrierter Ticketing- und Zahlungssysteme erforderlich sind, wobei der Schwerpunkt ebenfalls auf den Rechten der Nutzer liegt.

Alle öffentlichen und privaten Anbieter von Mobilitätsdiensten werden aufgefordert, Daten über ihre Dienste in offenen APIs zu öffnen, die in maschinenlesbarer Form vorliegen sollten. Eine Definition des Drittanbieters und seiner Verpflichtungen wäre enthalten.
Mindestverpflichtungen zur Bereitstellung von Fahrpreisdaten für Drittanbieter würden die Verkehrsunternehmen jedoch nicht daran hindern, Fahrkarten zu niedrigeren Preisen an Endverbraucher zu verkaufen, auch einschließlich Rabatte und Treueprogramme.

Nach Ansicht der Beteiligten sollte die neue Gesetzesinitiative es Aggregatoren und Vertriebspartnern ermöglichen, im integrierten Ticketing mit Rabatten und Werbeaktionen zu konkurrieren. Um dies zu ermöglichen, könnten die von den Dienstleistern zu verwendenden Normen für die Interoperabilität auch die Mindestnormen umfassen, die bereits für Zahlungssysteme im Rahmen der Zahlungsdiensterichtlinie entwickelt wurden, um das kontenbasierte Ticketing zu unterstützen.

Schließlich sind nach Ansicht der Beteiligten auch für die (kostenlose) Öffnung und den Zugang zu Secure Storage (SE) auf Mobiltelefonen sowie für einen schnellen Zugriff auf Daten über die in Mobiltelefonen gespeicherten Tickets und für die Datensicherheit und -weitergabe klare und europaweite gesetzliche Anforderungen erforderlich.

Eine neue Gesetzesinitiative würde einen komplexen Entscheidungsprozess auf EU-Ebene erfordern, einschließlich der Wahl der am besten geeigneten Rechtsinstrumente. Die Umsetzung reaktionsschneller Gesetze und Vorschriften wurde von den Interessengruppen bei Bedarf angehoben, muss aber so konzipiert sein, dass vermieden wird, dass die Gesetze künftige technologische Entwicklungen verhindern oder schnell veraltet werden. Unserer Meinung nach können bestimmte Elemente des integrierten Ticketing, wie z.B. der dynamische Tarifzugang, nur durch einen legislativen Eingriff angegangen werden, während andere technologische Aspekte auch den Marktentwicklungen überlassen werden können, wo sich die beste Option ergibt.

Wie wir bereits erwähnt haben, wird jede Option von einer Marktanalyse und einer neuen Folgenabschätzung begleitet.
0. Introduction

0.1. Contents of this report

The Final Report consists of the following Chapters.

Chapter 1 describes the updated methodology and approach, with a focus on the stakeholder consultation which has been carried out.

Chapter 2 provides an introductory background of the study, including integrated ticketing value chain and market definition.

Chapter 3 gives an overview on the existing legislative framework, divided between EU measures which are of relevance for integrated ticketing and national legislative measures.

Chapter 4 provides the review of the selected EU projects and studies.

Chapter 5 describes the legal challenges that may arise from integrated ticketing and which constitute potential barriers to its development.

Chapter 6 examines competition rules applicable to integrated ticketing.

Chapter 7 describes the detected commercial barriers to EU integrated ticketing.

Chapter 8 delivers the results of online consumer panels realized to gather qualitative information about passengers’ experience on the issue of integrated ticketing.

Chapter 9 develops a set of scenarios that recommend how some of the existing barriers and challenges may be overcome.

Chapter 10 contains the bibliography.

This report is also accompanied by annexes. For example, a detailed description of the existing legislative and market framework at national level for all countries is provided in Annex III.
1. Methodology

1.1. Objective and methodological approach

The project is divided into six phases and corresponding tasks:
- Task 0: Inception
- Task 1: Consolidation of Relevant Projects and Studies
- Task 2: Barriers and Challenges of EU-wide Booking and Ticketing
- Task 3: Overview of Fare Data Access
- Task 4: Overview of Relevant Legislation and Initiatives
- Task 5: Recommendations

The main objective for this Study is to provide the Commission with an independent support study investigating and providing a comprehensive and neutral analysis on the challenges of delivering EU-wide integrated ticketing. Additionally, this report identifies possible actions and initiatives foreseen to contribute to that goal. Information for this study was gathered through three data collection and analysis tools: stakeholder consultation, Rapid Evidence Assessment\textsuperscript{64}, and a passenger panel\textsuperscript{65}.

1.2. Stakeholder consultation

The process of stakeholder consultation involves the circulation of various surveys and interviews, namely, exploratory interviews, targeted interviews and legal and online surveys.

This study utilized a combination of four different stakeholder consultation techniques: an open survey (SurveyGizmo), target interviews, legal surveys and a users’ panel.

All four survey techniques were used to supplement the desk research for Task 2 and Task 3. The techniques will also be used to inform Task 4, which will be completed as a subsequent step.

All questions were approved by the Commission during the inception phase.

1.2.1. Online survey

The online survey collected contributions from stakeholders and organisations from various transport modes. The targeted stakeholders varied from national

\textsuperscript{64} Rapid evidence assessment follows the same iterations as structured or systematic literature reviews, but with the narrower scope of identifying and reviewing limited number of research and grey literature available to answer the research question. Based on the scale and scope of individual study, review strategy may be customized to include defining the types of research to be searched, where to find the research, and in what language and within what date limits. Quick scan such as rapid evidence assessment is a resource-efficient way to identify and summarise the general characteristics, issues, data and knowledge gaps surrounding a problem. These scans depend on a carefully constructed abstract conceptual framework identifying the aspects that are later taken into account for the search, defined on the basis of desk research and refined through insights and information from key informants. The framework serves to identify a limited number of key resources to review, that enable researchers to concentrate on the most relevant sources. Rapid evidence assessment is often conducted to collect information on: the analysis of the issues and challenges; the range of impacts considered and methods for measuring and/or estimating them; the contents, quality, coverage and relevance of data sources; the models and parameters that have been estimated (and the conclusions drawn); and the scope, context and findings of related impact assessments and evaluations.

\textsuperscript{65} A passenger panel can be defined as a group of selected research participants who have agreed to provide pre-designated information at regular specified intervals over an extended period of time. This research was conducted in compliance with the ESOMAR guidelines on online market research.
representatives and associations to companies and start-ups operating in integrated e-ticketing systems.

On 30 June 2018, the survey was launched electronically through the online survey software tool, SurveyGizmo. The survey ran for 15 weeks, ending 13 October 2018. In total, 87 stakeholders (27 fully completed responses and 60 partial responses\textsuperscript{66}) took part in the public consultation (see Figure 1 below).

The survey link was disclosed to the stakeholders via email. The first email was sent three days after the survey was launched, on 3 July 2018, to 150 stakeholders. By 31 August 2018, 72 respondents answered the survey, with 16 complete and 56 partial responses. In order to increase the response rate, a survey reminder was sent to the previously contacted stakeholders on 4 September 2018, resulting in the final number of 86 respondents.

\textbf{Figure 1 Number of responses to the online survey}

![Number of responses to the online survey]

<table>
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<th></th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
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<tr>
<td>Totals</td>
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</tr>
</tbody>
</table>

The responses were collected from stakeholders in 19 Member States. The largest amount of responses were collected from respondents in Croatia (25%) and Estonia (14%).

\textsuperscript{66} However, out of the partial responses only six respondents provided satisfactory information for the purposes of the study.
Taking part in the online survey were stakeholders operating in different transport sectors, consisting of (multiple choices were available):

Figure 3 Sectors of stakeholders’ main activity

1.2.2. Targeted interviews

The targeted interviews were carried out with selected and qualified experts within public authorities, companies offering transport services, their associations and other organizations familiar with issues relating to the transport of passengers.

67 ‘All others’ include: Austria, Hungary, Ireland, Italy, the Netherlands, Poland, Portugal, Spain and The United Kingdom
The objective of the target interviews was to gain in-depth insight to the barriers that hinder integrated ticketing, as well as viewpoints on possible policy measures to promote integrated ticketing.

40 interviews were carried out.

The following types of stakeholders were interviewed:

- Ministries and transport authorities in all Member States;
- National competition authorities in all Member States;
- Transport operators;
- Start-ups;
- Travel agencies; and
- Transport experts (such as NGOs and research institutes).

The information provided by each respondent reflects the company or service’s understanding of the applicable regulation at the national or local level and the legal and financial challenges to delivering integrated ticketing.

1.2.3 Legal interviews

The legal interviews were conducted with the intent to integrate the desk research for Task 2 and to gain a better understanding of the legal challenges (both real and perceived) to the integrating ticketing. We gathered 23 replies.

1.2.4 Assessing passengers’ experiences

To address the passengers’ experiences with integrated ticketing and to assess the availability of existing integrated ticketing schemes in relation to their needs and expectations, our research team recruited 520 passengers through an online consumer panel. The selection of passengers was based on the following three selection criteria: (i) being above 18 years of age; (ii) being a resident of the European Union; and (iii) having used a transport service at least once in the last 12 months. Data collection took place over a 2-day period, from 3 August to 4 August 2018.

Typically, passenger experience includes a complete set of activities from booking to arrival at the final destination. For the purposes of this report, passenger experience is limited to all passenger activities and interactions involved in the booking process. Normally, the following factors influence passengers’ pre-travel experience:

- Searching for transport information and routes: this usually entails finding the shortest possible route (the route with the fewest stops) to the destination;
- Checking for prices and possible promotions: this involves the possibility of choosing the lowest affordable fare to a destination;
- Ease of booking and travel change management: this implies that passengers can choose the most convenient way of booking, including fast transactions and secure payment methods;
- Customer service: this includes, among other aspects, availability, ease of access and speed of issue resolution.

For the purposes of this study, multi-modal travel is a journey that involves more than one means of transportation to reach the final destination. A multi-mode travel
includes both more traditional transportation modes (trains, planes, coaches and ships), as well as shared/rented cars, carpooling, ridesharing and bikes. The latter are increasingly available in many cities as inexpensive and eco-friendly transportation.

The findings of the consumer panel were complemented by conducting in-depth interviews with passengers’ associations and consumer organisations that specialise in travelling. These types of associations and organizations exist in many Member States.

1.3. Tasks

1.3.1. Task 1 – Consolidation of relevant projects and studies

The data collection tool we proposed was the Rapid Evidence Assessment method. This method follows the methodological principles of a qualitative systematic review, but facilitates a more rapid synthesis of the evidence. For this study, the Rapid Evidence Assessment method was particularly useful, as the involved literature contains a mixture of quantitative and qualitative data. Review of the studies focuses on three key elements:

- state of play of fare data access;
- analysis of the main barriers to integrated ticketing; and
- analysis of the main solutions and measures that enable integrated ticketing schemes.

In addition, the team analysed and evaluated ten projects relevant to integrated ticketing. These projects were analysed vis-à-vis the aims of this study, i.e., the evaluation of the projects with regard to the objectives of:

- achieving integrated ticketing;
- fare data access;
- ways to eliminate main barriers; and
- ways to foster cooperation between different market players, etc.

The methodology of the project analysis was a triangulation of desk research results and targeted interviews with project coordinators. The desk research was conducted through review of the project materials and deliverables, most of which could be found on the projects’ websites.

Following the desk research results, the team prepared tailored questionnaires for each project, requesting validation of our information and conclusions, and additional data to fill in information gaps. The interview results were incorporated in the project evaluation presented in Annex IV.

1.3.2. Task 2 – Barriers and challenges of EU-wide booking and ticketing

The desk research for Task 2 was based on:

- Existing studies and projects analysed in Task 1. Existing documentation was mapped in the inception phase of the project. We therefore built on Task 1 with the specific aim of finding and assessing the current legal and commercial barriers to EU-wide ticketing and payment systems.
- Legal literature, mainly academic works on the topic and the official documents issued by the national authorities.

Preliminary findings from the earlier phases of this study were elaborated and discussed during the interviews. This allowed for the triangulation of information
gathered through desk research and assessment of the extent to which involved stakeholders perceive identified issues as concrete barriers.

However, further desk research was necessary in the follow up of the interviews, in order to review and analyse the information collected during the targeted interviews and legal survey.

The list of reviewed studies and literature is presented in Annex II.

1.3.3. Task 3 – Overview of fare data access

For Task 3, the analysis was built on:

- Results obtained in Task 2 to better understand the extent to which access to fare data limits the availability of integrated ticketing;
- Additional online desk research;
- Interviews with stakeholders in Member States; and
- Online surveys.

The additional online desk research collected data on Member States’ practices regarding fare data access, including the following:

- **National legislation on fare data access** – the desk research concentrated on the transposition of the ITS Directive 2010/40/EU, as well as any other national legislation affecting transport services and access to fare data.
- **Agreements between private operators** – research involved information on agreements and cooperation between private transport operators on fare data access in different transport modes.
- **Industry initiatives and programmes supporting fare data access** – the study team researched industry initiatives and programmes, supported either by the European Commission or nationally active in the Member States.

The collected information was subsequently verified by carrying out interviews with stakeholders. Country records were produced for Member States where relevant stakeholders were interviewed to verify information.

1.3.4. Task 4 – Overview of relevant initiatives and legislation

Under Task 4, we have analysed the current legislative framework, existing at national level, which enables and promotes the use of integrated ticketing and access to data, including fares. The methodology is mainly based on desk research, as well as interviews with the relevant stakeholders. In addition, the desk research focused on the legal analysis of certain barriers raised by the stakeholders in the context of the consultation. In particular, the barriers include competition issues (refusal to supply and price fixing), public services obligations (PSO) and subsidisation of the service.

1.3.5. Task 5 – Recommendations

To tackle the identified challenges, some solutions are proposed at EU level, consisting of self-regulation, soft law, hard law and a combination of both soft and hard law. The recommendations are mainly directed at tackling the cross-border issues and moving forward with data collection and data sharing for multi-journey travel planning to full integrated ticketing.
2. Background

2.1. Introduction

Integrated ticketing is defined as the purchase of a single ticket that allows passengers to travel by using several modes of transportation provided by one or more operator(s) or as “combining all transport methods on a single ticket.” Integrated ticketing is considered the natural partner to providing the full availability of multimodal travel information and planning services.

The scope of integrated ticketing is to make a multimodal transport more attractive for users and promote more efficient use of existing infrastructure and services. It is a prerequisite for seamless multimodal door-to-door journeys.

This definition is not generally shared by all stakeholders: other selling modalities, such as combined tickets to provide a connected journey, are another option. This could solve some of the problems with integrated ticketing, in particular the liability of various transport operators.

Pursuant to Regulation (EC) No 1370/2007, integrated public passenger transport services are interconnected transport services, within a determined geographical area, and with a single information service, ticketing scheme and timetable.

Within the concept of integrated ticketing is the overarching idea that a number of operators shall work together and combine their products on a single ticket/fare, ideally throughout different operating regions and across different services.

Integrated ticketing could contribute to the achievement of integrated modality and intelligent transport systems. These include better air quality, less congestion, achievement of climate goals/decarbonisation, increased efficiency of the transport system as a whole, increased capacity, social inclusivity, the promotion of jobs and innovation. Ultimately, integrated ticketing can contribute to more sustainable transport by providing alternatives to private modes of transport.

Further, integrated ticketing should increase customer convenience and the efficiency of public transport.

Integrated ticketing between different operators and modes of transport implies the close integration of pre-trip and on-trip information, timetables, pricing schemes, regulatory and organisational frameworks, and booking and payment systems. The implementation of an integrated ticketing system requires the synchronisation of heterogeneous actors, such as public transport operators and authorities, financial service providers, as well as actors in the tourism sector. It follows that one thousand contracts must be signed in order to implement an initiative that integrates all transport modes in a country.

The scope of this study is to investigate and provide a comprehensive and neutral analysis on the challenges of delivering EU-wide integrated ticketing and to propose possible actions and initiatives foreseen to contribute to that goal.

In order to better perform the analysis, we have focused on specific areas of the ticket integration:

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69 Towards a roadmap for delivering EU-wide multimodal travel information, planning and ticketing services, SWD (2014) 194.
• Legal requirements, including concession rights, subsidy systems, division of fare income, and liability of the carrier.
• Geographical dimension: long distance and short distance integrated ticketing. The separation responds to the consumer demand and the structure of the local market, with a public company managing the transport network service in the relevant area, under PSOs and specific mobility policies.
• State of the art analyses of pricing and ticketing.

2.2. Scope of the study

The study covers the integrated ticketing and payment systems from the supply side. In particular, this includes the challenges of delivering passengers with a single ticket for a seamless journey. The focus of this study is the involved parties’ challenges in finding solutions for integrated ticketing.

The Study covers the single ticket as a result of: (i) an agreement between two or more carriers to offer a multimodal product, in which one of the carriers acts as the single contracting party towards the passenger; or (ii) a single contract consisting of a product, offered by a third party/intermediary, which includes transport services by all carriers involved.

In addition, a single ticket can cover journeys that are: a) single-mode, involving different transport operators providing the same transport mode (i.e., rail); or b) multimodal, involving different transport operators providing different transport modes.

The Study includes urban, local and long-distance transport modes and both public and private transport operators.

2.3. The integrated ticketing value chain

Ticketing requires the performance of a number of phases/functions as well as the intervention of various players to guarantee the lifecycle of the travel chain:

• Search/query: the user is searching for information concerning the journey, timetable, price, and/or best option/combination. This may additionally include travel planners to find the right route, means of access, and the simultaneous ordering of the ticket for this route.
• Booking/preliminary reservation: the user has selected the offer(s) he/she needs and has submitted a reservation.
• Payment and Clearing: the journey is paid and the payment is cleared.
• Ticket issuance: the ticket is handed over.
• Validation: the validity of the ticket is confirmed during the trip.
• Change of reservation: re-routing or changes in case of errors or delays.
• Complaints’ management: a single point of contact to manage passengers’ complaints.

70 The involved parties include transport authorities, public and private transport operators, intermediaries, and payment service providers.
- **Revenue sharing**: the revenue is distributed between the different actors of the transport chain.

There are two options to organise ticketing for a cross-network or multi-modal journey:
- to offer the customer one single ticket for the entire journey; or
- to offer separate tickets for each segment on a single support.

The single-ticket offer is complex and costly to implement, as it includes not only technical agreements, but also business and political agreements. It requires transport operators to circulate ticket prices for all segments. Additionally, it necessitates the development of a common ticketing scheme, with common processes to fulfil and control tickets, either at gates or on board. The parties involved must agree on commissions to be paid to the lead retailer. Further, the parties must conduct settlement and clearing.

Each element of the travel chain requires access to different data in order to perform the service. Therefore, for integrated ticketing and payment systems to be implemented successfully, access to data (both static and dynamic) is essential.

### 2.4. The role of third-party as ticket seller or aggregator

As mentioned above, tickets may be sold by one operator of the transport chain or by a third party or intermediary. There are various channels for ticket sales. The sale of tickets may be administered by the transport provider directly or outsourced. Another channel is to sell tickets through a proprietary mobile ticket platform, developed by the transport operator or a third-party independent service provider. Between the various ticket distribution models, the role of distributors and ticket aggregators vary.

A ticket aggregator is "Any site which aggregates ticket prices from other reseller sites, but does not conduct any ticket sales on their own site."\(^71\)

Independent and third-party service providers, including distributors and aggregators, are interested in entering into agreements with transport operators in order to develop integrated ticketing and payment products. In general, their revenues stem from commissions or service fees paid by the transport authorities or transport operators.

However, as explained by some interviewed stakeholders, the outsourcing of ticket sales may be inconvenient where the price of the transport service is lower than the production costs. Therefore, the authorities and operators may have little incentive to outsource the sale service.

### 2.5. Some definitions

#### 2.5.1. Long- and short- distance passenger transport

Provisions of transport services are, in general, characterised by high barriers to entry, such as capital investments, the need to comply with a strict regulation, and a strong market share of incumbent operators. Typically, the transport market is non-contestable.

In 2016, the total multimodal market was estimated at approximately 65.7 million passengers of the total 10.6 billion passengers. On a yearly basis, 12 million travel in the EU by air and rail. The passenger air-rail market segment represents 65% of the multimodal market (around 43 million passengers) and around 7% of the total international air traffic in 13 Member States.

Passengers using single contracts represent only 5% of these 65.7 million passengers of the multimodal market, with slightly greater than 3.3 million passengers per year. Additionally, 95% of the multimodal market is accounted for combined, i.e., multimodal journeys using separate contracts.72

The results of the research, including the practical examples, demonstrate that integrated ticketing is currently operated on long distance transport (such as rail-air-shipping integrated transport) or at the local level (integrated ticketing in metropolitan areas). Empirical evaluation seems to suggest that long-distance and local/urban integrated ticketing do not cooperate effectively.

As indicated by a previous study,73 countries across Europe have different definitions of long-distance trips. The definitional variance makes it challenging to provide a precise overview of the main characteristics and size of this market. For instance, long-distance journeys are characterized as those that exceed 100km in some larger countries (such as Germany, Sweden or France), 24km in the UK, and 50 km in the Netherlands. Further, in some countries, such as Switzerland, long-distance trips are classified as those involving an overnight stay or the crossing of the regional transport authorities’ borders.

Additionally, there is no common definition of long and short-distance transport in the EU acquis. In the European Transport White Paper 2011,74 as well as in a study on the EU Road Transport Market of European Commission’s DG for Mobility and Transport,75 the Commission considers three major transport segments, namely medium distances, long distances and urban transport. The studies define distances under 200 km as short and medium. According to Commission Staff Working Document Accompanying the White Paper,76 “short distance” is not longer than 100 km. Conversely, Eurostat considers “short distance” passenger transport between 0 and 299 km, "medium distance" between 300 and 999 km and “long distance” above 1000 km.

At the legislative level, Regulation (EU) No 181/2011 on the rights of passengers in bus and coach transport,77 considers as long-distance services as those consisting of a distance over 250 km and short-distance as those where the scheduled distance of the service is shorter than 250 km. However, the Regulation does not provide a precise definition.

### 2.5.2. Public passenger transport and Public service obligation

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72 Exploratory Study on passenger rights in the multimodal context, Draft Executive Summary, February 2019
74 COM (2011) 144 final, Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system
75 European Commission DG for Mobility and Transport Unit C.1 - Road transport May 2017, "An Overview of the EU Road Transport Market in 2015"
76 SEC (2011) 391 final, Commission Staff Working Document Accompanying the White Paper - Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system
Pursuant to Regulation (EC) No 1370/2007 on public passenger transport services by rail and by road,\textsuperscript{78} public passenger transport is defined as “\textit{any passenger transport services of general economic interest provided to the public on a non-discriminatory and continuous basis.}” According to the Regulation, a public service obligation (PSO) is a requirement defined or determined by a competent authority in order to “\textit{ensure public passenger transport services in the general interest that an operator, if it were considering its own commercial interests, would not assume or would not assume to the same extent or under the same conditions without reward.}”

\textbf{2.5.3 Integrated public passenger transport services}

As mentioned above, Regulation (EC) No 1370/2007 defines the integrated public passenger transport services as interconnected transport services within a determined geographical area, and with a single information service, ticketing scheme and timetable.

\textsuperscript{78} Regulation (Ec) No 1370/2007 of 23 October 2007 on public passenger transport services by rail and by road and repealing Council Regulations (EEC) Nos 1191/69 and 1107/70.
3. Legislative framework

3.1. EU Policy and Legal framework

At the EU level, since the 2001 White Paper on transport policy, the European Commission has supported the integration of transport modes. Subsequently, the European Commission undertook several legislative initiatives and contributed to shaping the relevant legal framework for integrated ticketing and payment services.

The 2011 transport White Paper fostered the goal of establishing the framework for a European multimodal transport information, management and payment system by 2020.

As noted by the 2014 roadmap for delivering EU-wide multimodal travel information, planning and ticketing services, integrated ticketing (i.e., the combining of all transport methods on a single ticket) is the natural partner to offering the full availability of multimodal travel information and planning services. Creating interoperable ticketing systems across transport modes and countries has been identified as one of the key prerequisites for a seamless transport system. “Tickets should be integrated for urban areas and regions and also cover long-distance travellers who may cross borders during their journeys. This would require the standardisation, interoperability and cross-border acceptance of applications and the carrier medium (chips, GSM).” The Staff Working Document recognizes that the areas of intervention should include, among others, offering fair and equal access to multimodal travel and traffic data; improving the availability of good quality multimodal travel and traffic data; creating an interoperable system; harmonising data formats and data exchange protocols; promoting the interconnection of existing services; and facilitating efficient cooperation between stakeholders.

In 2015, as a reaction to the 2014 Roadmap, the European Parliament urged the European Commission, “with regard to multimodal integrated ticketing services, to take the measures necessary to create a clear framework, supporting and facilitating the efforts being made by the stakeholders and the competent authorities, the agreements they have already concluded and the innovative nature of the products and services on offer and in the event that no significant progress in creating integrated, interoperable multimodal, cross-border ticketing systems is made by 2020 calls on the Commission, building on the progress already made and the voluntary initiatives already introduced, to take legislative action by introducing minimum rules and a timetable.”

The relevant legislation in place at the EU level consists in the following acts.

3.1.1. Directive (EU) 2010/40 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport (ITS Directive)

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The ITS Directive\(^{81}\) aims to accelerate the coordinated deployment and use of intelligent transport systems in road transport (and interfaces with other modes) across Europe.

Article 2 of the Directive identifies four priority areas: optimal use of road, traffic and travel data; continuity of traffic and freight management ITS services; ITS road safety and security applications; and linking the vehicle with the transport infrastructure. In addition, the Directive identifies priority actions and priority areas including the provision of EU-wide multimodal travel information services.

Five delegated acts were adopted after the implementation of the ITS Directive. Among them is Regulation (EU) 2017/1926 on the provision of EU-wide multimodal travel information services (see below).

In addition, along with the adoption of the ITS Directive, a working programme\(^{82}\) for the implementation of the Directive was adopted on 15 February 2011.

In the 2018 revised Working Programme, the Commission expressed the intention to look at technical, legal and commercial barriers and challenges of EU-wide multimodal booking and ticketing (priority area II of the ITS Directive)\(^{83}\) in 2019.

In 2018, the European Commission launched an evaluation of Directive (EU) 2010/40. The purpose of the evaluation was to provide an up-to-date overview of the implementation of the Directive and the benefits and costs generated. The evaluation additionally assessed whether the current scope was still relevant and in conformity with technological developments and other EU policy.

The ITS Directive is particularly important for the development of EU integrated ticketing and payment system because, under its Article 7, the Commission is empowered to adopt delegated acts in accordance with Article 290 TFEU. Further, the Article regards specifications for each of the priority actions. This Article is the legal basis of the Delegated Regulation (EU) 2017/1926\(^{84}\) of 31 May 2017 with regard to the provision of EU-wide multimodal travel information services.


The Delegated Regulation (EU) 2017/1926 of 31 May 2017 provides the necessary specification to ensure that EU-wide multimodal travel information services are accurate and available to ITS users across borders.

The Regulation applies to the entire transport network of the Union. It requires Member States to set up a single national point of access for users, at least including the static travel and traffic data and historic traffic data of different transport modes (Article 3). Hence, the Regulation contains an obligation to provide static data and leaves the decision on dynamic data to the Member States. Requirements regarding

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\(^{82}\) Working Programme C (2011) 289.


the static and dynamic travel and traffic data of different transport modes apply to the data that is actually collected and available in machine readable format.

Stakeholders are currently not required to collect data that is not already available in machine readable format. However, Member States are encouraged to implement cost-effective ways, that are appropriate for their needs, to digitise existing static and dynamic data of different transport modes.

The Regulation also regulates accessibility, exchange and reuse of static and dynamic travel and traffic data provided by transport authorities, operators, and on demand service providers (Article 4 and 5). Further, it regulates their reuse within the Union (Article 8). Standards and technical specifications are provided for each of the transport modes (Article 9).

Different kinds of data are concerned by the Regulation at issue:

Static travel and traffic data means data relating to different transport modes that does not change at all, does not change often, or does not change on a regular basis.\(^{85}\) It is non-volatile data, which changes relatively infrequently and so may be exchange by periodic updates rather than continuously.

Dynamic travel and traffic data means data relating to different transport modes that changes often or on a regular basis.\(^{86}\) This data changes very frequently and typically represents the state of dynamic travel and traffic at a precise moment in time, including the availability of seating on a planned journey, real-time bus arrival predictions, or unplanned disruptions. Such data requires the continuous updating of a live data service—either a push service or an API to fetch data as needed.

Data describing the tariff structures of a network, including fare structures, fare products, conditions of purchase and of use, user types, and prices of a transport system. The fare structure describes the basis and scope (origin destination pairs, zones, etc.) and accesses rights (single, multiple travel, class of use, etc.). The fare products assemble these as permitted combinations with specific usage and commercial conditions attached and assign a monetary cost. Fare distribution channels and payment methods may also be described in data describing the tariff structures of a network. Some aspects, such as prices or availability of seats may be dynamic. Other aspects, such as the zones and routes, classes of use, available fare products, etc., may be static.

The specifications set out in the Regulation should apply to all transport modes, such as schedule-based (air, rail including high speed rail, conventional rail and light rail, long-distance coach, maritime including ferry, metro, tram, bus, trolley-bus, cableways), transport on demand (shuttle bus, shuttle ferry, taxi, ride-share, car-share, car-pool, car-hire, bike-share, bike-hire, dial-a-ride) and personal-based (car, motorcycle, bicycle, walking).

Therefore, the Regulation is the main piece of legislation on which to establish integrated ticketing, since it already provides for data access (at least for static travel and traffic data in machine-readable format), which can be re-used to develop new services.

### 3.1.3. Public Service Obligations (PSOs)

The development of an EU-wide integrated ticketing and payment system necessarily involves public transport operators along with private companies. Consequently, the

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\(^{85}\) Article 2(8) Delegated Regulation (EU) 2017/1926

\(^{86}\) Article 2(7) Delegated Regulation (EU) 2017/1926
relevant framework shall take into account the specific rules for operators of public services.

PSO means a "requirement defined or determined by a competent authority in order to ensure public passenger transport services in the general interest that an operator, if it were considering its own commercial interests, would not assume or would not assume to the same extent or under the same conditions without reward." 87

PSOs are established by competent authorities in Member States. However, Article 14 of the TFEU and Protocol No 26 on services of general interest annexed to the TFEU sets out the general principles of how Member States define and provide services of general economic interest.

The EU has therefore adopted various measures laying out the procedures and conditions that Member States should apply to the definition, establishment and execution of PSOs, and on the award of PSO/public service contracts. Additionally, the EU is developing legislation to avoid disparities in the procedures and conditions that apply to the execution of PSOs among Member States.

The main scope of such legislation is to provide transport services on routes for which private operators have no commercial interests, yet are essential for the development of the areas or for other reasons, such as for instance accessibility. The PSO rules complement public procurements and set conditions under which compensation payments are deemed compatible with internal market and State aid rules.

EU PSO regulations slightly differ between the different forms of transport and take the specific features of each transport means into account, including its operational characteristics.

For road and rail transport, public service contracts are awarded according to the rules prescribed by in Regulation (EC) 1370/2007. 88 Such Regulation defines the conditions based on the competent authorities (public authority or authorities with the power to intervene in public passenger transport within a given geographic area) that may intervene in issues involving public rail and road passenger transport to guarantee the provision of services of general interest. However, with reference to the award of certain passenger transport services by bus or tram, the procedures of Directives (EU) 2014/25 and 2014/24 apply.

The core of the discipline of PSOs for road and rail transport is enshrined in Articles 4 through 6 of the Regulation. These Articles describe respectively the mandatory content of public service contracts and general rules (Article 4), the award of public service contracts (Article 5) and the public service compensation (Article 6 as well as the Annex).

PSOs for maritime transport services (known as maritime cabotage) are included in Regulation (EEC) 3577/92. 89 These aim at ensuring that, within EU countries, shipping companies or nationals based in other EU countries have the right to offer services, provided that they comply with all the conditions for carrying out cabotage within that country.

Air Services Regulation (EC) 1008/2008, sets common rules for the operation of air transport services in the EU. It includes the licensing of EU air carriers and price transparency, and lays down the conditions for Member States to impose PSOs to maintain appropriate scheduled air services on routes vital to the economic development of the region they serve.

In particular, Articles 16, 17, and 18 respectively lay down general principles for public service obligations (Article 16), regulate the public tender procedure for public service obligations (Article 17) and provide for the examination of public service obligations (Article 18).


The objective of the PSI Directive on the re-use of public sector information was to ensure that the data held or financed by the public sector is readily available for re-use by third parties (i.e., parties outside of the public sector). However, the rules of the Directive only applied to those entities within the public sector which can be described as ‘public sector bodies’ in line with Article 2(1) and 2(2). The consequence of such definition were that many entities were exempt from applying the rules of the Directive, even when predominantly funded or controlled by the public authorities (this is typically the case for public undertakings).

In 2013, the PSI was amended to introduce a genuine right to reuse by making reusable all content that can be accessed under national access to documents laws. In addition, it lowered the ceiling for charges on reuse applicable in standard cases to marginal costs, i.e., the costs incurred by the individual request for reuse (reproduction, provision and dissemination costs), with exceptions for a limited number of cases. Finally, it expanded the scope of application of the PSI Directive to certain cultural institutions.

A study, carried out in 2018 on the evaluation of the PSI Directive, showed that the PSI Directive had a very positive impact for the development of a data economy within the EU but areas for improvement remained with particular reference to the need to extend reusability to more data if possible.

One of the evidenced issues, which has been addressed by the new Open Data Directive was that insufficient reusability was the consequence of the lack of technical infrastructures (APIs). It emerged that the full potential of public dynamic and real-time information had not been exploited as not all public sector bodies dispose of APIs or other technical means for making these data available.

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91 OJ L 172, 26.6.2019
92 Deloitte and others, Study to support the review of Directive 2003/98/EC on the re-use of public sector information.
In April 2018, the European Commission adopted a proposal for revision of the PSI Directive. This was presented as part of a set of measures aiming to facilitate the creation of a common data space in the EU.

The proposal aimed at filling in the gap in the regulations and to overcome the barriers that were identified and which prevent the full re-use of public sector information. Also, it aims at increasing the availability of data by bringing new types of public and publicly funded data within its scope.

The new Open Data Directive is very relevant for the purpose of this Study since it increases the availability of the public data and it will foster the increase of data available to develop integrated ticketing and payment systems.

Once fully transposed on the national level, the new rules will:

- Stimulate the publishing of dynamic data and the uptake of Application Programme Interfaces (APIs).
- Limit the exceptions which currently allow public bodies to charge more than the marginal costs of dissemination for the re-use of their data.
- Enlarge the scope of the Directive to:
  - data held by public undertakings, under a specific set of rules. In principle, the Directive will only apply to data which the undertakings make available for re-use. Charges for the re-use of such data can be above marginal costs for dissemination;
  - research data resulting from public funding – Member States will be asked to develop policies for open access to publicly funded research data. New rules will also facilitate the re-usability of research data that is already contained in open repositories.
  - Strengthen the transparency requirements for public–private agreements involving public sector information, avoiding exclusive arrangements.

Concerning databases, the Open Data Directive clarifies that the public sector bodies cannot use the *sui generis* right to prevent or restrict the re-use of documents. In addition, the Open Data Directive requires the adoption by the Commission (via a future implementing act) of a list of high-value datasets to be provided free of charge.

These datasets, to be identified within a thematic range described in the Annex to the Directive, have a high commercial potential and can speed up the emergence of value-added EU-wide information products. They will also serve as key data sources for the development of Artificial Intelligence.


EU rail transport policy is geared towards the creation of a Single European Railway Area. Following the introduction of the railway sector to competition in 2001, three packages and a recast were adopted within. In 2016 a fourth package was adopted to complete the Single European Railway Area and improve interoperability. The last package was made up by a ‘technical pillar,’ a ‘political pillar’ and a ‘market pillar.’

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In December 2016, Directive (EU) 2016/2370 on the opening of the market for domestic passenger transport services by rail and the governance of the railway infrastructure was adopted, as part of the market pillar.

The Directive is relevant to integrated ticketing since Article 13a of the Directive provides for specific rules on common information and through-ticketing schemes. This allows Member States to require railway undertakings, operating domestic passenger services, to participate in a common information and integrated ticketing scheme for the supply of tickets, through-tickets and reservations or to give the power to competent authorities to establish such a scheme.

According to the provision, Member States are required to ensure that such scheme does not create market distortion or discriminate between railway undertakings. Additionally, they must ensure that it is managed by a public or private legal entity, or an association of all railway undertakings operating passenger services.

3.1.6. Regulation (EU) 2018/1807 on a framework for the free flow of non-personal data

The Regulation, which is applicable in all EU Member States as of May 2019, regulates a framework for the free flow of electronic non-personal data in the EU. It provides a definition of non-personal data: Non-personal data refers to machine-generated data or commercial data, which are either non-personal in nature or anonymous.

Under the Regulation, data localisation requirements are prohibited unless they are justified on the grounds of public security in compliance with the principle of proportionality. Member States shall repeal any existing data localisation requirements within a year from the date of application or notify the Commission of such requirements, including a justification. Furthermore, all Member States are required to make national data localisation requirements available on a single online information point, so that such information is readily available for users and service providers.

It additionally encourages and facilitates the development of self-regulatory codes of conduct at the Union level, to contribute to a competitive data economy based on the principles of transparency and interoperability and taking due account of open standards.

The regulation is relevant for this study because it facilitates the transfer of non-personal data in machine readable format. It makes it easier for businesses to operate across borders in the EU by eliminating the duplication of data storage facilities.

3.1.7. Directive (EU) 2015/2366 on payment services in the internal market (PSD2)

The Payment Service Directive, revised in 2015 (PSD2), provides EU-wide harmonisation of payment services and aims to increase the security for payment transactions and account information, create a level playing field to enhance competition, and open the payment services to new non-bank providers. It provides
new payment systems which can be integrated in ticketing, which is an important EU milestone in the sharing of banking data. Therefore, it could represent a possible model for further initiatives on data sharing.

The PSD2 is a data and technology driven Directive that aims to drive increased competition, innovation and transparency across the European payments market, while also enhancing the security of internet payments and account access. It is relevant in the context of this Study because integrated ticketing requires interoperable systems between payment service providers and transport operators/transport authority to allow passengers to purchase tickets electronically, including contactless cards and payment apps.

The PSD2 introduces the Third-Party Provider (TPP) definition to regulate new payment services. Two new types of TPPs are introduced, namely Account Information Service Providers (‘AISPs’) and Payment Initiation Service Providers (‘PISPs’). Both AISPs and PISPs must comply with the regulatory requirements under PSD2. At the core of PSD2 is the requirement for banks to open up their IT infrastructure (Open APIs). This facilitates data sharing concerning bank transactions (mortgages, credit cards, subscriptions, any other payment including transport services paid via credit card or debit cards) with TPPs which intend to use the data to create new products. The data transfer requires the authorisation of account holders.

This ‘Access to Account’ (XS2A) rule mandates banks or other account-holding PSPs to facilitate secure access via APIs to their customer accounts and data with the account holder’s consent. To provide this access to accounts, banks must allow for customer identity verification and authentication via APIs.

The PSD2 has left technical details of APIs for the market to define. One example is the Berlin Group, consisting of 40 banks, payments associations and Payment Service Providers (PSPs). The Berlin Group was established to define a common API standard called NextGenPSD2.

In addition, the European Banking Authority (EBA) mandated by the PSD2 to specify the requirements of common and open standards of communication to be implemented by all account servicing payment service providers that allow for the provision of online payment services. This means that those open standards should ensure the interoperability of different technological communication solutions.

The Regulatory Technical Standards (RTS), adopted in 2018, specify the requirements of the strong customer authentication (SCA), the exemptions from the application of SCA, the requirements with which security measures have to comply in order to protect the confidentiality and the integrity of the payment service users’ personalised security credentials, and the requirements for common and secure open standards of communication (CSC) between account servicing payment service providers, payment initiation service providers, account information service providers, payers, payees and other payment service providers (PSPs). Implementation of the RTS will begin in September 2019, allowing 18 months for the payment industry to prepare for this new state of play.


The Computerised Reservation Systems (CRSs - also known today as Global Distribution Systems – GDSs) act as technical intermediaries between the airlines and the travel agents. They provide their subscribers with instantaneous information about the availability of air transport services and the fares for such services. Additionally, the systems permit travel agents to make immediate confirmed reservations on behalf of the consumer. Regulation 80/2009\textsuperscript{98} ensures that CRS present the information on air fares to travel agencies in a non-discriminatory manner. Regulation 80/2009 also particularises and complements the EU data protection rules with regard to the activities of a CRS.

Notably, the Regulation also provides the basis for integrating other transport services, particularly rails and coaches, in the information and reservation system. In fact, the Regulation also applies to rail services when incorporated alongside air-transport products into the principal display of a CRS when offered for use or used in the Community. In addition, Recital 15 of the Regulation provides, “information on bus services for air-transport products or rail-transport products incorporated alongside air transport products should, in the future, be featured in the principal display of CRSs.”

The significance of the Regulation is that it helps ensure a level playing field among CRS participants and contributes to the development of the CRSs. In addition, it simultaneously increases transparency and enhances consumer confidence. The transparency and non-discriminatory principles of the CRS code of conduct are useful and valid in the new world of mobility platforms.

It is interesting to note that this piece of legislation is currently being evaluated.\textsuperscript{99}

In the public consultation, EPF expressed: The cross-modal potential of CRSs has to be fully exploited. Currently the CRS Regulation applies only to air (and air-rail) travel, but not to rail-only or coach services. The Code of Conduct should serve as a model for multimodal Computerised Reservation Systems (and other online channels that enable passengers to compare and book their travel).\textsuperscript{100}

**3.1.9. Directive (EU) 2016/943 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure (Trade secrets Directive)**

The opening of essential data, which is at the root of integrated ticketing, must be framed within specific rules, in order to prevent the unlawful disclosure of trade secrets and/or a violation of intellectual property rights.

For this purpose, the Trade Secrets Protection Directive\textsuperscript{101} was adopted in June 2016. The Directive appears relevant, as it covers a wide range of information that extends beyond technological knowledge to commercial data. For example, information on customers and suppliers, business plans and market research and strategies.

The Directive was adopted in response to the great diversity of systems and definitions existing in Member States in regards to the treatment and the protection of trade secrets. Further, it standardised the varying national laws against the unlawful acquisition, disclosure and use of trade secrets. The Directive was to be transposed into national law by June 2018.


\textsuperscript{99} \url{https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2017-4870475_en}

\textsuperscript{100} \url{http://www.epf.eu/wp/wp-content/uploads/2019/03/19_01_EPF_Position_CRS_COC.pdf}

For data to qualify as a "trade secret" under the Directive, measures must be taken to protect the secrecy of information, which represents the "intellectual capital of the company." In particular, “trade secret” means information which meets all of the following requirements: (a) it is secret, namely it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; (b) it has commercial value because it is secret; and (c) it has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.102

It stems from these definitions that not all relevant data for the purposes of integrated ticketing constitute trade secrets. For example, some raw machine generated data, which can be both static and dynamic (and which do qualify as non-personal data103) may not reach the threshold to constitute trade secrets within the meaning of the Trade Secrets Protection Directive.

When this is the case, while they may not be legally protected by GDPR or ePrivacy Directive nor IP law (such as copyright), collections of data and databases may exceptionally be protected under the Database Directive either by copyright (Article 3 of the Database Directive) or the sui generis database right (Article 7 of the Database Directive.). For this to apply, it must be proven that “substantial investment” was made in the creation and verification of the database.104

3.1.10. Regulation (EU) 2019/1150 on promoting fairness and transparency for business users of Online Intermediation Services

Multimodal journey tickets are usually bought through an intermediary rather than directly from the carriers. Therefore, online intermediaries play a central role in the development of integrated ticketing.

The increasing dependence of businesses on online platforms to sell their goods and services to consumers has allowed for a number of harmful trading practices against which no redress was possible. For example, the ranking of websites by providers of online search engines or price comparison platforms have a crucial impact on consumer choice. Even in the absence of a contractual relationship, providers of online search engines could effectively act unilaterally, in a way that is unfair and may be harmful to the legitimate interests of corporate website users and, indirectly, also of consumers in the Union.

In June 2019, the co-legislators adopted a regulation on promoting fairness and transparency for business users of online intermediation services.105 The Regulation was underpinned by extensive fact finding, including a study on certain terms and conditions, which place small businesses who interact with online platforms at a competitive disadvantage106. It addresses a number of problematic practices by online

102 Id.
106 Ernst and Young, Study on contractual relationships between online platforms and their professional users FWC JUST/2015/PR/01/0003/Lot1-02 Final Report, 23 April 2018.
platforms and search engines by focusing on high level transparency requirements. These requirements provide clear principles on implementing changes to terms and conditions, the grounds for suspension or termination of a platform, ranking parameters (including the use of any mechanisms that allow business users to influence their prominence in search results against remuneration), any preferential treatment of a platform’s or search engine’s own products or services, and access to personal and other data and the use of most favoured nation (MFN) clauses. It also provides business users with improved internal, external and judicial redress options. Finally, the Commission set up an EU Observatory in 2018 to monitor the online platform economy, assess current and newly emerging issues and advise the Commission on further steps in that area.

The Regulation will enter into force in August 2019. It will apply 12 months later, i.e., beginning in August 2020.

3.1.11. Passenger’s rights

Passenger’s rights have been the subject of another study commissioned by DG MOVE.

3.2. National legal framework

Under this section, the Study examines national legislation that aims to develop integrated ticketing at a national level, particularly, in regard to the cooperation among the relevant national stakeholders, access to data and development of common standards. The desk research and interviews demonstrated that a number of initiatives have been discussed or adopted at national level. We aim to identify the purposes and most relevant elements of these initiatives.

3.2.1. Finland

In Finland, the Finnish Act on Transport Service (hereinafter “the Act”), which is aimed at creating the pre-conditions for the digitalisation of transport, entered into force on 1 July 2018. The introduction of intelligent transport systems linked to the ITS Directive have already been introduced on 1 October 2017; however, most parts of the Act, such as, inter alia, the provisions on the interoperability of data and information systems, have applied since 1 January 2018.

The objective of data regulation, included in the Act on Transport Services, is to focus on the users of services. Therefore, the objective is to enable the creation of uniform trip chains from door to door. The new law requires opening an API (Application Programming Interface) for public and private service providers. This will result in integration, resulting in one seamless travel chain that can be paid for by one mobile system and the integration of transport modes into one holistic system. The first part of the Act on Transport Services contains provisions on the opening of interfaces for normally priced single tickets in road and rail traffic. The Act on Transport Services introduces a new concept: “acting on another’s behalf.” This concept would create preconditions for easier use of mobility services.

The objective of newly introduced data regulation is to enable the creation of uniform trip chains from door to door, focusing on the transport service users.

Another purpose of the new Act is to impose cooperation among all the actors of the transport service.
The Finnish Transport Agency is in charge of monitoring the supply and demand of mobility services and coordinating the development of mobility services. In addition, the Agency produces statistics and studies from the data obtained.

Open access data

Together with the Act on Transport Services, a Government Decree on essential data concerning mobility services has been adopted. The Decree provides for essential data on mobility services to be made available through an open interface in a standard, easy to edit, and computer-readable format.

In particular, service providers and mobility service operators shall provide to third party service providers access to information and data systems. In addition, they shall provide access to support services, software, licences and other services required under fair, reasonable and non-discriminating terms and conditions. It is a basic obligation, which means that the service provider cannot impose further requirements for opening access to the interface in addition to those indicated in the Act.

In particular, Section 2 establishes that “Providers of road and rail passenger transport services, providers of brokering and dispatch services, or actors managing a ticket or payment system on behalf of these shall give mobility service providers and providers of integrated mobility services access to the sales interface of their ticket and payment systems, through which it is possible to:

1) purchase a ticket product at a basic price that, at minimum, entitles the passenger to a single trip; the travel right based on this ticket shall be easily verifiable using generally applied technology; or

2) reserve a single trip or a transportation, the exact price of which is unknown when the service begins or which for some other reason will be paid by mutual agreement after the service has been provided.”

The obligation to conclude contracts only applies to the minimum products defined in the Act.

Terms and conditions restricting the use of the interface are impermissible. However, it can be stated that, in general, the obligation to take into account the opening up of interfaces, as defined in the Act on Transport Services, requires a well-justified reason for any refusal to conclude a contract or cooperation regarding products defined in the act.

The obligation to cooperate involves an obligation to negotiate over contracts and other practical arrangements. For example, tickets or other digital wallets sold by a MaaS operator, as part of minimum products, must be validated on the vehicle.

Furthermore, in order to generate and offer a travel chain, it is necessary that the involved parties agree on how different actors of the travel chain fulfil their rights and obligations set out in imperative legal provisions.

In addition, Section 3 is directed at promoting interoperability in public procurements, mandating that when procuring mobility services or ticket or payments systems associated with them, the competent authority shall verify that the service provider has complied with the requirements on interoperability. This must be approved by the authority.

Lippu-Project

To ensure the effective implementation of integrated ticketing, a support project for interoperability of ticket and payment systems (Lippu-project) was launched. Lippu interface includes API definitions and specifications to boost the creation of open API’s for data exchange between transport service operators.
The use of the Lippu interface specification is not mandatory, however, if the implementation of the interface includes similar information, it may be deemed to fulfil legal requirements regarding data content.

The Finnish Communication Regulatory Authority published guidelines on contractual practices for travel chains defined in the Act on Transport Services. It includes recommendations for good practices in agreements and cooperation between service providers. The report is a checklist of matters that providers of mobility services must consider or should consider when preparing agreements.\(^{107}\)

### 3.2.2. France

A Draft Bill, proposed in November 2018 following the Macron-law and the Regulation (EU) 2017/1926, introduces new standards for open access data for multimodal transport services.

The Bill was adopted at first reading on 18 June after a long debate.\(^{109}\) It requires the opening of mobility data on a real time basis, implementing the Regulation (EU) 2017/1926 concerning the static traffic and travel data that shall be made available by National Access Points (NAP).

Financial compensation may be requested to the data user when the volume of data transmitted exceeds a threshold that will be defined by a decree of the Council of State.

The Bill entrusts the regions and cities to facilitate the process of opening up and transmitting such data to the NAP single digital interface which will record all of the mobility data.

Article 9 also assigns the Regulatory Authority for Rail and Road Activities new missions of monitoring, dispute settlement and sanctioning. This ensures the proper implementation of data access.

Article 10 requires the production of certain transport accessibility data for persons with disabilities and reduced mobility. This concerns accessibility data for all regular public transport services (road and rail). The data also enables the development of mobility assistance services for people with disabilities.

Article 11 provides that the regional organizing authorities and Île-de-France Mobilités shall ensure that users have an information service on all modes of travel within their territory. In addition, this article specifies that any multimodal digital sales or reservation service shall be endowed with different travel solutions in a transparent manner to users.

Further, the article offers the possibility to any person, whether public or private, to constitute a multimodal service of sale of transport or parking services having an agreement with or organized by the public power, by right of access to the digital

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\(^{109}\) The draft law, already approved by the French Senate, was adopted by the deputies after more than 130 hours of debate - in both the plenary and the committee - and with nearly 3,000 amendments, by 372 votes to 40 with 144 abstentions. As of today, a joint committee is expected to meet to try to find a compromise on the text. If this fails, and after a final shuttle, the French Assembly will have the final say.
services of sale and reservation of concerned parties. The financial conditions will be contractually defined reasonably on the basis of objective and relevant criteria.

3.2.3. Denmark

In December 2018, a legislative proposal\[^{110}\] was presented by the Minister of Transport, Building and Housing to the Danish Parliament. Its purpose is to promote increased data sharing and third party resale of tickets from the public transport sector.

It proposes to combine the functions of the travel cards and the travel plans in one digital mobility service under one company with one joint board. Therefore, the joint company must work for the integration of the travel plans and the travel cards as products and services. This is to ensure a targeted and common strategy for a total digital service and total prioritization of development initiatives for both products. The pursued goal is to improve knowledge, competencies and managerial capacity, as well as to ensure a higher degree of synergy and coherence in the adopted decisions.

The Draft Bill will lay out some conditions for general framework for the company, as well as tasks aimed at promoting modern public transport and the development of mobility services. The implementation of the company's development tasks is determined by the Board of Directors. It is set in a business plan that must contain a strategy and timetable for the relevant implementation. Besides the proposal for a business plan, consideration is given to the fact that not all of the company's development tasks can be expected to be implemented from the date of entry into force of the Act. Consequently, the business plan creates room for the company's purpose to be developed on a commercial basis in line with technological and digital development.

Under the Danish Draft Bill, public transport companies shall provide selected static and dynamic transport data to third parties free of charge. Transport data mainly refers to information relating to the means of transport, including, among other things, the capacity and location of means of transport. This allows for the development of digital mobility services where the user can search, plan, book and pay for the entire journey. Under the Draft Bill person-related information is not shared, including sensitive personal data, travel patterns or location of the traveller's position. Moreover, the publicly-based mobility service and any new, privately-initiated mobility services will be subject to the provisions of the Data Protection Regulation and of the Data Protection Act.

3.2.4. United Kingdom

In the UK, the Transport Act 2000 and the Local Transport Act 2008 have created a regulatory framework that allows for the creation of integrated tickets. However, the Department for Transport (DfT) made it clear that legislative and administrative burdens must be kept to an absolute minimum level: the role of National Governments is to enable and encourage the development and deployment of effective solutions to transport challenges.

The Competition and Market Authority (CMA), following the 2011 investigation in the bus sector, recognized the importance of increasing “the number of effective multi-operator ticketing schemes, by giving LTAs additional powers to introduce and reform

\[^{110}\] L 129 Proposal for a law amending the Danish Transport Companies Act and the Railway Act.
schemes on terms that make them effective and attractive to passengers.”"111 In this context, updated Ticketing Block Exemptions were introduced in 2016.

The Public Transport Ticketing Schemes Block Exemptions were published in order to clarify allowances in integrated ticketing under competition law point of view, especially in terms of sharing price information. Their purpose is to help operators, local authorities and scheme administrators to assess ticketing schemes in order to determine whether their multi-operator schemes fall within the scope of the block exemption.

As clarified by the CMA, agreements must satisfy certain conditions which are laid out under Section 9(1): "Broadly, the agreement must contribute clear efficiency benefits. Second, it must provide a fair share of the resulting benefits to consumers. Third, the restrictions on competition that it provides for must be no more than the minimum that is necessary to enable consumers to gain these benefits. Fourth, it must not give companies the opportunity to eliminate competition from a substantial part of the relevant market."112

Importantly, the CMA defines the ticketing schemes as unwritten agreements between public transport operators and may include local authorities allowing for passengers to purchase tickets that can be used on the services of more than one of the participating operators, including the electronic format.

The Block Exemption provides five categories of ticketing schemes that are likely to satisfy the section 9(1) conditions and that are exempt, provided they meet certain conditions.

Common price agreements are allowed in cases of Multi Operators Travel Cards (MTC), provided that certain conditions are met.

MTCs entitle ticket holders to make multiple journeys on different operators’ services (which may include different kinds of scheduled public transport services such as bus, rail, coach, tram, metro and local ferries) across a number of different routes, where “these routes are not substantially the same.” The block exemption allows operators offering an MTC to agree on a common price for tickets, but the tickets “must relate to travel on three or more routes, where these routes are ‘not substantially the same.’”

For example, if a city is served by several operators with largely different networks, an MTC could allow passengers to travel across the whole city with just one ticket. Types of MTCs include daily and monthly travel cards, carnets, and other time-limited tickets.

The requirement that the routes “are not substantially the same,” the purpose of this requirement is in place to ensure that MTC schemes provide access to a genuine network of complementary routes, rather than, for example, a single route. The combination of routes included in the MTC scheme should therefore offer passengers substantially different journeys and should not be very similar routes with only minor variations, even if they are by different modes of transport.

The CMA clarifies that operators must only confirm that the MTC scheme covers at least three different (i.e., not substantially the same) routes. If an MTC scheme covers a larger network – one of more than three routes – the CMA considers it highly likely that it will meet this criterion and no detailed assessment would be necessary, unless most routes overlap substantially. Where a scheme covers a small number of routes,

112 See above, para 2.9.
operators should assess their scheme on a route-by-route basis to confirm whether the second criterion is met.

With regard to the condition of the routes “in practice, not substantially used by passengers,” the CMA clarifies that it refers to the passengers using a single overlap route of two or more operators within the scheme. In this case, it would not be considered an MTC scheme within the meaning of the block exemption and would not be able to benefit from the ability to set a fixed price for tickets.

**3.2.5. Other Member States**

In Germany, railway undertakings are committed to working together, under § 12 (1) no. 2 General Railway Act (AEG).

In many regional transport associations (network of local and regional public transport operators), integrated ticketing is requested by competent authorities as well. Public transport associations (Vekehrsverbund) exist under mandate to develop (a) a single fare system for all modes and companies; (b) a uniform ticketing system; (c) timetable coordination; and (d) unified passenger information system. Cooperation can be achieved by setting up a company or through a union owned by the authorities, with responsibility for marketing, service development, fares, sales, etc. Associations exist at the metropolitan or regional level. Urban authorities remain responsible for urban transport financing and organization.

In the Netherlands, both Wp 2000 (the Transport Act) and the Bp 2000 include rules requiring transport operators to participate in a common information scheme. Article 30c of the amended Wp 2000 makes it possible to establish rules for PSO operators to publish certain data in order to develop integrated ticketing schemes.

Most European countries do not have specific legislation in place mandating or enabling access to fare data and integrated ticketing schemes. Where transport integration exists, it mainly involves public transport operators or it is mostly achieved by means of private agreement between transport operators.

In some cases, the lack of a legal framework is due to the federal structure of the country. This makes it difficult to develop a national legislation promoting integrated ticketing. For instance, in Austria, federal law only operates at a federal level and the government cannot mandate provinces and local transport operators to provide integrated services on a legal basis. Nevertheless, the government is working on different solutions to further improve transport integration. The solutions are currently based on non-legislative initiatives, such as the provision of incentives for transport providers that participate in voluntary transport schemes, or the conclusion of agreements with neighbouring countries to extend integration to a cross-border level. Similarly, in Belgium, where decisional powers are shared between the federal authority and the three regions, each public transport operator depends on a different Minister, and a local integrated ticketing scheme is achieved by means of private agreement, rather than by law.

Yet, it seems that the governments of a growing number of countries are interested in promoting tickets integration. In some cases, specific projects are underway and new legislation is being discussed or drafted (e.g., in France, Estonia, Hungary, Croatia). Even in countries where transport integration is lagging, governmental Policy or Strategic Papers on Transport for the upcoming years set the development of integrated ticketing schemes among the targets to be met. As an example, in Croatia, the Ministry of the Sea, Transport and Infrastructure developed a Transport Development Strategy for the years 2017 – 2030. It planned to introduce, in the
second quarter of 2020, a law on Integrated public transport service that will extend to ticket regulation.

Similarly, in Malta, the Integrated Transport Strategy Directorate at Transport has developed the 2016 National Transport Strategy for 2050 and a Transport Master Plan for 2025. These cover all relevant transport modes for the short, medium and long term. Among the goals set in the Strategy is the improvement to the journey planner, synchronisation of timetables and possible incorporation of multimodal ticketing (to cater for all modes of transport). In addition, they cover some form of integrated travel card and ticketing, in order to provide an improved and seamless intermodal experience. To this end, according to Paragraph 158 of the Strategy, “Development in Malta Journey planning services could be facilitated by requiring the operators to provide the information about their services in an open-data format, suitable for data aggregation by developers of such journey planners.”

A general overview of legislative framework in the countries where relevant laws currently exist is provided hereinafter. Additionally, a more detailed description of the existing legislative and market framework at national level for all countries is provided in Annex II.
4. Review of relevant projects and studies

The purpose of this task was to create a starting point for the study, based on review of the relevant completed reports and studies commissioned by the European Institutions in the domain of EU-wide ticketing and payment schemes. In addition, the Study analyses and evaluates eleven projects with relevance to integrated ticketing that provided a foundation for the study and identified best practices and positive impacts of integrated ticketing.

Finally, with desk research and the interviews with the relevant stakeholders, we have identified projects of national dimension.

4.1. EU Selected relevant projects and studies

<table>
<thead>
<tr>
<th>Project/Initiative (in alphabetical order)</th>
<th>Description</th>
</tr>
</thead>
</table>
| All ways Travelling                      | About the project:  
The project explores how services and information can be combined to overcome the obstacles faced by passengers in booking and undertaking journeys across Europe.  

Main findings and lessons learned:  
There are no technical show-stoppers to achieving interoperability between travel provider systems through an architecture that enables MMITS solutions (MultiModal Information and Ticketing Systems), although, clearly, there are specific technological challenges. |
| BMC                                      | About the project:  
As ticketing operator in Belgium, BMC tries to provide seamless ticketing for commuters with a special focus on short distance cross-border commuting  

Main findings and lessons learned:  
Belgium is divided in 3 regions. There are four Ministers of Mobility and four operators. The common aspect in Belgium is the commuting card. Around Brussels, you can be in a situation where in 10 km, you have to pay 3 passes. The main problem is not the total price but the split of the total price. One way to solve this problem is to have a "supra"-national authority that deals with cross-border price integration. This authority should be also in charge of redistributing revenues according to service provided. |
| Bonvoyage                                | About the project:  
The project aims at developing a platform optimising door-to-door transport of passengers and goods. The platform provides travel information, including planning and ticketing services, by analysing data from heterogeneous databases. Information from road, railways and urban transport systems is included in the platform.  

Main findings and lessons learned:  
The project has finished in April 2018; however, the developed database is still not in use. The EU intervention would be necessary to encourage the NAPs to synchronise the systems they use and then share the collected data into a European-wide platform. |

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113 Annex 1 provides detailed analysis of the presented projects
114 http://bonvoyage2020.eu/
<table>
<thead>
<tr>
<th>EuTravel</th>
<th>About the project:</th>
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<tbody>
<tr>
<td>The EuTravel planner is a European/cross-border multimodal journey planner that is distinct from other journey planners in the functionalities offered for both the planning and booking phases. The backbone of the EuTravel ecosystem is a Super Travel API which provides the capability to bridge between different travel services and systems.115</td>
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| Main findings and lessons learned:               |
| All the involved stakeholders in the travel industry should consider the extent to which a Code of Conduct will be required to govern “neutral” displays driven by the travellers’ failure, reluctance or decision not to complete their profile. Giving equal opportunities to all transport means it verifies the user’s freedom of choice and ensures a well-protected operational environment. |

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<tr>
<th>European Travellers Club</th>
<th>About the project:</th>
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<tr>
<td>The European Travellers Club is an initiative of several European e-Ticketing Schemes in Public Transport and the Open Ticketing Institute (OTI). It is supported by several industry partners. The aim of this initiative is to ensure that all travellers in Europe can use trusted, easy and seamless Account-Based Ticketing across Europe, integrated with journey planning and travel information.</td>
<td>The initiative includes several types of transportation, including rail, bus, tram and metro116.</td>
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| Main findings and lessons learned:               |
| The main factor that has contributed to a successful pilot was the main idea of the project. The project itself did not try to change already existing systems used by the providers, authorities and the operators. Instead, the project has created an ‘add-on’, not interfering with different systems and payment methods in the Member States. |

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<tr>
<th>FSM (Full Service Model)</th>
<th>About the project:</th>
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<tr>
<td>The FSM initiative, founded in 2013, aims at facilitating online distribution services to the benefit of the travellers and can contribute to offering door-to-door travel solutions. To this end, ticket vendors and railways have developed an Open-IT-framework that can be integrated in already existing IT-distribution systems. When implemented, FSM can be used like an adapter and enable data exchange between different distribution systems.</td>
<td>FSM brings together key players in the rail and distribution sector who are committed to delivering better IT solutions for B2B distributions, with the overall objective of improving experience for consumers. The FSM initiative has developed IT specifications that make rail distribution systems interoperable (API) and more efficient.</td>
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| Main findings and lessons learned:               |
| FSM compliance allows the rail companies to cooperate towards seamless rail travel. Implementation of FSM is estimated to be about 15-20% of the costs which would occur by replacing fully the distribution system. While being a technical solution, FSM requires distribution agreements between players. In addition, FSM could be potentially used in the future by operators of other than rail transport operators. |

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<tr>
<th>IT²RAIL</th>
<th>About the project:</th>
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<tr>
<td>The &quot;Information Technologies for Shift to rail&quot; aims at providing a new seamless travel approach, giving access to a complete multimodal travel offer, which connects the first and the last mile to long distance journeys. The project encompasses distinct modes of transportation, combining air, rail, coach and others117.</td>
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116 http://www.europeantravellersclub.eu/
117 https://cordis.europa.eu/project/rcn/193373_es.html
### Main findings and lessons learned:

A significant obstacle, within the technology domain, is the high cost of interoperability between links in the supply chains i.e. the heterogeneous formats and protocols for the dissemination of timetables, availability and pricing data, from different modes/operators, results in very few (if any) one-stop shops, because of the very high cost of implementing and managing this heterogeneity. And this is the case, even if there were facilitating public transport policies or strategies of transport service providers favouring the distribution of transport products to third-party retailing operations.

**Solution:** The application of a semantics technology approach to achieving interoperability in the transport sector, as introduced by IT2Rail, is a major innovation, and promises to significantly remove the technology cost barriers for consolidating and aggregating content.

### MaaS Alliance

**About the project:**

Mobility as a Service (MaaS) is the integration of various forms of transport services into a single mobility service accessible on demand.

The core function of MaaS ecosystem is to catalyse an open and dynamic market for the delivery of a user-centric mobility services portfolio through a unique interface. It is an ecosystem made of many different partners, sharing a common principle of delivering a door-to-door seamless mobility experience.

In the MaaS ecosystem, the mobile phone or application will be the remote control and command centre for personalized mobility, replacing tickets and cash as unnecessary elements in the operations.  

**Main findings and lessons learned:**

Development of the MaaS market will rely on access and openness of data, open APIs (Application Programming Interface) and more flexible transport and mobility regulations.

The competitiveness and attractiveness of MaaS services relies heavily on availability of high-quality data. The first step towards a digital transport system is harmonization of data, supported by appropriate regulation and standards. Similarly, important is to enforce safe and secure real-time access to data, as well as ensure clarity regarding liabilities of parties with principal control over the data.

### MASAI

**About the project:**

MASAI is focused on seamless travel and tries to build up a community of stakeholders, progressively contributing with adequate evolutions and improvements for the development of the core elements of a digital concierge, allowed by an ever-accelerating progress of technology.

The project enables door-to-door information through users’ and service providers’ data.

**Main findings and lessons learned:**

The promotion of seamless travel requires a closer cooperation between a large variety of industry and policy makers in order to design services as integrated ticketing/pricing and infrastructure responding to the needs of all travellers. Multi stakeholder governance models require the alignment in a multi stakeholder environment (authorities, citizens, private sector) and a supported implementation based on a suitable standard as a major driver for innovation and making travel more comfortable efficient and sustainable.

Partnerships between the private and public sector beyond the boundaries of today will be a critical factor for success.

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118 https://maas-alliance.eu/homepage/what-is-maas/
| **MobiWallet** | **About the project:**
MobiWallet is focused on offering seamless intermodal mobility to entire cities and regions. The goal of this European project is to develop a unified payment platform for any urban transportation mode, public or private, which will allow users not only to pay via any smartphone but also access special offers, discounts and other customized services in real time.

**Main findings and lessons learned:**
The unified payment collection and management platform developed by the project will integrate the various schemes used by different transport operators, facilitating the mobile payment of bus, subway, taxi and streetcar fares, the hire of public bicycles, and even public parking lot and controlled parking zones fees for motorists. |
| **Smart Ticketing Alliance (STA)** | **About the project:**
The project was founded in 2015 by the national smartcard schemes in France, Germany and the UK to improve interoperability between regional and national electronic ticketing systems for public transport.¹²⁰

**Main findings and lessons learned:**
Among the main challenges are differences between the national legislations and legislations which hinder cross border multimodal transport. These could include laws which do not concern transport directly, such as competition laws, which create barriers. |

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### 4.2. National-wide integrated ticketing projects

As to national-wide integrated ticketing projects, which have been reported by the stakeholders and emerged from desk research, the **Netherlands** is a pioneer country in integrated ticketing and smart payments for all transport modes. The OV-chipkaart was launched in 2001, and is a contactless smart card for public transport that can be used on any bus, train, tram and subway within the Netherlands. It is managed by Translink, a consortium among the largest transport operators in the Netherlands. A trial started in 2019 to switch to direct use of contactless credit cards for ticket payment.

Similarly, **Sweden** has been a forerunner in national multimodal ticketing of long-distance rail services and public transport services. Multimodal ticketing has been available in the country since 1994 under the name of “Resplus.” A considerable number of actors are able to sell multimodal trips to end-customers, with all the necessary information on the same ticket. The system is managed by the company Samtrafiken, instructed by the Swedish Transport Agency to manage the common traffic information database. All public transport companies are required, by law, to submit data on their supply (timetables, lines including stations and stops) to the database. Through Resplus, traffic data, stops and lines are collected by a national database that is linked to national sales system. In addition, all passengers have a “reach your destination warranty”, where the carriers jointly guarantee that passengers will reach their final destination, even if traffic disturbances occur, with no extra charge applied.

For many years, interoperability has been crucial for **German** ticketing as well. Central to the German transport system is the zoning, which is the foundation upon which ticket charges are based. Since 2003, the Association of German Transport

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¹²⁰ [http://www.smart-ticketing.org/who-we-are/](http://www.smart-ticketing.org/who-we-are/)
Companies (VDV), together with partners from industry and transport operators, have taken action and created a nationwide, standardised electronic fare management system, and kicked off the VDV Core Application. As a result, the whole system is integrated in Germany. Each transit company operates within an alliance (Verkehrsverbund) that sets pricing and ticket types and they must offer and accept the same types of tickets across the network. Therefore, within each of these integrated public transit alliances, buses, trams and trains operate seamlessly within the network, functioning under the same tariff rules.

**Austria** has a similar system. Despite the lack of a specific legal framework, local transport integration is achieved by virtue of private law voluntary agreements between public transport operators (as well as private bus operators) who agreed to exchange data. Integrated transport ‘verkehrsverbunds’ offers joint tickets at a discounted ‘network’ rate, under application of a uniform tariff system. While, for the time being, integration in Austria only exists at a national level, a project of cross-border cooperation (also based on agreement) with neighbouring countries (such as **Czech Republic**) regarding exchange of transport information kicked off in 2018. It is currently in the development stage.

Another example of a cross-border project underway exists between **Finland** and **Estonia** (city of Tallin). The governments are currently seeking agreement on transport links and digital cooperation, as well as cross-border data exchange, pricing and division of ticket revenues.

An integrated ticketing national project exists in **Denmark** as well, where the vast majority of tickets sold for public transport allow access to the bus, train and metro. Only one ticket is required for a single journey. The parties cooperate on the electronic travel card, Rejsekort. The system was developed by DSB, HUR, and Ørestadsselskabet, together with various regional bus companies. It replaced the old zone ticket system, and allows fares to be calculated from the beginning of the journey to the end.

Likewise, the **Belgian** ticketing system is card-based. In the federal context, transport competences are shared among four entities. There is no regulation requiring transport operators of domestic passenger services to participate in common information and integrated ticketing schemes for the supply of integrated tickets; however, the four public transport operators entered into an agreement to develop a common card, i.e., the MoBIB card, and related exchange mechanisms. The card is managed by a private company (Belgian Mobility Card) established in 2010, and owned by the four public transport operators.

A further example is the integrated ticketing scheme for public transport launched in Dublin. Implemented in 2012 (following nine years of preparation), it subsequently extended nationwide in **Ireland**, in the form of the Leap Card. The scheme is operated and maintained by the NTA and allows travellers to switch between Dublin Bus, Luas, Dart, Irish Rail DART and commuter rail services as well as certain Bus Éireann services and Wexfordbus services with one card. However, although it has been implemented in the majority of public transports services in Ireland cities, the Leap Card is not typically used for longer distance (inter-city) bus and rail services. Additionally, some privately owned bus companies that operate purely commercial services (non-PSO) do not currently participate in the Leap Card integrated ticketing 121

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121 Estonia and Finland are, in fact, among the most interconnected European countries, being Finland the first labour market for Estonians outside of their home country, and Finland one of the most popular travel destinations for Finns. The number of people and goods moving between the two countries has grown steadily in recent years.
scheme. By law, NTA may, at its discretion, require those companies to participate in the Leap Card scheme, but for various reasons (e.g., cost and possible revenue liability implications) it has not invoked this requirement.

**Slovenia** began the roll-out of a national multimodal public transport ticketing scheme, IPPT, in 2016. The scheme is supervised by the Ministry of Infrastructure and led by Slovenian Railways. It is designed to integrate all public transportation providers in the country under a unified ticketing and fare collection system. Tickets are uploaded onto a smart card, available free of charge at any ticket office in the IPPT sales network that spans across the entire country. The technical aspects required the establishment of a management organisation to support automated fare collection and electronic data management.

Other countries, such as **Hungary**, are presently working on the development of similar systems. In 2017, the Hungarian Government voted to approve a plan paving the way for a nationally interoperable electronic ticketing system, combined with information and traffic management system, called RIGO. The project is to be set by BKK (Centre of Budapest Transport), which is owned by the Municipality of Budapest. It is scheduled to be operational by December 2019.  

The scheme aims to make travelling easier, as well as coordinate various timetables through the introduction of the automated fare collection (AFC) scheme. It will encompass national, regional and local passenger services and affect the aviation sector (as fees will be merged and reduced).

On a separate note, **Luxembourg** provides an example of a stand-alone system. In 2014, the mKaart was launched as a contactless smart card using RFID (Radio Frequency IDentification). It serves as a support for all occasional tickets and subscriptions on the five public transport networks in Luxembourg. Therefore, it is valid throughout all national public transport networks and financed by the State on Luxembourg territory. Its implementation is supervised by the Luxembourg State. However, in 2018, the government planned the introduction of total free public transport by the first quarter of 2020. With the implementation of the free transport bill, the mKaart will continue to provide access to park and ride facilities, mBoxes and the network of charging stations for Chargy electric cars, but will no longer function as a ticket integration card for public transport.

A more comprehensive overview on existing integrated ticketing projects at a local level for each country is provided in the Country Reports in Annex II.

### 4.3. Main findings

The studies show an interest in EU-wide integrated ticketing among the stakeholders and some challenges and barriers that need to be addressed to develop an EU-wide multimodal journey planning service. Overall, the barriers and challenges involve access to data and cooperation between stakeholders. The key findings are presented below.

**Main barriers to integrated ticketing and payment system**

One of the main challenges for integrated ticketing is ensuring fair and equal access to multimodal travel and traffic data, including dynamic and fare data. Private companies

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122 However, the target date has already been delayed more than once, due to complications encountered and challenges which are being faced relating e.g. to high prices, changes to the legislation, inappropriate preparation.

123 In addition, mKaart is used as an access card for self-service bicycle services, secure bicycle parking and the national network of charging stations for electric cars.
are reluctant to open up access to their dynamic and fare data due to commercial interests. Delegated Regulation (EU) 2017/1926 is very important for this purpose but covers access to static data leaving Member States to decide concerning dynamic data. The next step should be ensuring fair and equal access to dynamic data. It requires not only legislative intervention, but also cooperation between commercial operators.

**Main solutions and enablers**

The above mentioned challenges could be solved with a mixture of legal, commercial and technological actions.

According to the MaaS Alliance, in order to create an open ecosystem, ticketing and payment system interfaces should be accessible for other service providers. The establishment of an open ecosystem can be encouraged by public procurement rules, requiring the interoperability of ticketing and payment systems with other similar systems.

Creation of a “code of conduct” could incite the interest of transport operators. The most widespread practice among private companies is to participate in cooperation schemes that are based on bilateral agreements.

The FSM initiative, one of the reviewed projects, presents an interesting solution. The initiative combines technology and cooperation between rail transport stakeholders. Founded in 2013, it aims at facilitating online distribution services to benefit travellers and could contribute to the goal of offering door-to-door travel solutions. To this end, ticket vendors and railways have developed an Open-IT-framework that can be integrated into existing IT-distribution systems. When implemented, FSM may be used as an adapter and enables data exchange between different distribution systems.

According to some operators, public administration plays an important role, both at the local and national level. Some public authorities are already moving beyond their traditional role as infrastructure providers by enabling and promoting the mobility services of new entry-level players. Finally, the promotion of seamless travel, through the design of services such as integrated ticketing/pricing and infrastructures that respond to all travellers’ needs, requires closer cooperation between a wide variety of industry and policy makers (authorities, citizens, private sector). Although it may seem an obvious conclusion, partnership between the private and public sectors is considered a critical element for success.

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125 See Annex I for detailed analysis.
5. Legal barriers

5.1. Objective

One of the purposes of the Study is to identify the legal challenges, constituting potential barriers to development, that may arise from integrated ticketing.

The identified barriers stem from the implementation of an integrated ticketing scheme, a complex process that requires that heterogeneous actors synchronize their activities. The results of the desk research, interviews and workshop evidenced that there are areas where issues remain. For example, the more precise definition of the conditions for data access by third parties, the allocation of responsibility for data reliability, the question of liability in case of erroneous information by third parties that would entail financial claims from travellers, and the technological developments which are necessary for interoperability and integration.

5.2. Lack of (comprehensive) (EU) multimodal legal framework for booking, ticketing and payment services

With a few exceptions, there is no comprehensive legal framework promoting integrated ticketing at the EU or national level. As mentioned above, legislative interventions operate regarding access to data and cooperation among stakeholders on certain aspects (data, price fixing). However, no provisions that cover all the elements of the integrated ticketing were discovered.

Applicable legislation is mainly designed for conventional transport systems, in particular, transport modes provided and consumed separately.

On the other hand, a complex regulatory framework with multiple national and international regulatory layers might hinder the development of new services and cause additional risks for investments in the provisions of the integrated ticketing models.

Fragmentation

According to the results of the stakeholders’ interview, it emerged that it is necessary to introduce some regulations at the EU level in order to avoid national fragmentation and ensure a fair, level playing field for online ticket vendors. National level measures would not be able to remove cross-border challenges.

Legal fragmentation also results in overregulation, i.e., the necessity to comply with too many different legal requirements in order to set up an integrated ticketing scheme. This increases both the complexity and costs.

Currently, a truly cross-border integrated ticketing scheme does not exist. In many Member States, initiatives are fragmented and managed by operators or organising authorities.

Exclusion of non-scheduled public passengers transport services from EU transport legislation

It is also important to strengthen the link between long distance travel and “the first and last mile” in order for passengers to be able to use their tickets from their point of origin to the final destination. A seamless door-to-door service via integrated ticketing must include the local scheduled and non-scheduled passengers transport services (public local transport taxis and hire cars with driver). While Delegated Regulation (EU) 2017/1926 covers all transport modes, from the survey it emerged that there is
still a lack of access to data concerning The non-scheduled public passengers’ transport. Therefore, it is difficult for platforms and service providers to offer the last mile component of a multimodal, cross-border journey.

**Data protection**

Data protection is indicated as an additional relevant legal barrier. According to some stakeholders, the GDPR compliance and privacy rules may increase the number of complexities, given that extensive personal information is needed in order to issue tickets and proceed to the payment.

### 5.3. PSO and compensation

According to literature and the results of the survey, a prominent issue facing integrated ticketing relates to the subsidization of tickets for public transport.\(^{126}\) From the stakeholder’s interviews, the issue of PSOs emerged as one of the main concerns of the potential participants in integrated ticketing. In particular, the concerns were with reference to the revenue sharing among PSOs and commercial operators.

As indicated in previous studies, some sectors including the bus and rail, perceive a difference between publicly subsidised operations and solely commercially operated routes.\(^{127}\) From the ticket distribution perspective, the subsidisation of the operations has an impact on how transport operators are allowed to sell their tickets. In addition, PSO operators may be exempted by fare data collection and release, which may increase difficulties for third parties in developing an integrated ticketing product.

Regulation 1370/2007\(^{128}\) is the frame regulation for PSO. The Regulation lays out the conditions for the PSOs and the mechanism for the calculation of the compensation.

Article 1(e) of Regulation (EC) 1370/2007 defines PSO as “a requirement defined or determined by a competent authority in order to ensure public passenger transport services in the general interest that an operator, if it were considering its own commercial interests, would not assume or would not assume to the same extent or under the same conditions without reward.”

Based on Regulation (EC) 1370/2007, Member States are free to organise the PSOs according to public service contracts in a non-discriminatory manner.

According to the Regulation, the competent authority shall conclude a public service contract with the operator to which it grants an exclusive right and/or compensation in exchange for discharging PSO.

As mentioned above, the Regulation lays out the conditions for the compensation, including the criteria for the calculation, the parameters, the exclusive rights, the means of distribution of the costs linked to service supply and the means of distributing income from the sale of transport tickets between the operator and the competent authority.

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If the public authorities use a third party, rather than an internal operator, they must award public service contracts upon transparent and non-discriminatory competitive procedures. These may be subject to negotiation.

There is no universal model for defining or contracting for PSOs. Literature notes that there is a tendency to gradually reduce the PSOs to suburban and regional transport, but it is the markets’ openness to competition that mainly determines PSO models.

With reference to the revenue sharing between operators and public authorities, the majority of the approaches to risk sharing set in public service contracts are those of: a) “net contracts”, where the revenues from ticket sales go to the provider of the service as part of the payment for its services by the public authority; and b) the “gross contracts”, where the revenue from ticket sales entirely go entirely to the public authority who then pays the operator in order for the latter to provide transport service.

The choice between the two models mainly depends on the allocation of responsibilities and risks between the authority and the transport operator. In the first case, the risks related to operations and sales fall predominantly upon the operator; in the second case, the public authority takes the majority of risks related to the execution of the public service contract and has responsibility for the services.

In the context of gross contract, the organising authority will assume most of the financial risk associated with the operation; therefore, it has larger control on how the service shall be organised and provided.

According to public transport authorities who were interviewed for this Study, when the level of compensation is part of the selection procedure organised by public transport authority, as in the case of a net cost contract, it has little incidence on how integrated ticketing is organised and on the sharing of revenues. In this situation, there are less barriers to integrated ticketing.

However, many stakeholders insisted on the difficulty of integrating state subsidized mobility services and commercially viable services, in order to combine them with integrated mobility solutions. This is essentially due to revenue-sharing issues. The issues arise because it is difficult to distribute revenue across the value chain while also considering compensation for the part of the journey provided by the PSO operator.

In addition, when an integrated ticketing system is developed between PSO transport providers and public authorities, non-PSO undertakings need access to these transport services to be active on the ticketing market. However, this access is still limited and the ticketing market remains partially closed-off.

It must be noted that some of the successful examples of integrated ticketing, at the local or regional level, include operators under PSOs organised by the contracting authority as mediator. For example the Dutch OV-chipkaartsysteem, KORRIGO and ATOUMOD in France.

Integration is considered expensive for the contracting authority, especially in gross contracts. This is due to the fact that the contracting authority bares the financial risks.

129 According to Article 5, the obligation to instigate competitive procedures does not apply in some specific cases (namely, to low level contracts, the average annual value of which is estimated at less than Eur 1 million or which supply less than 300 000 km of public passenger transport services; where emergency measures are taken or contracts are imposed in response to actual or potential service interruptions; to rail transport).
Within the Warsaw metropolitan area, tickets valid for 24 hours or longer, issued by the Warsaw Transport Authority and previously validated in city buses, trams, metro or Fast Urban Rail, are accepted in all regular trains of Masovian Railways (Koleje Mazowieckie). Masovian Railways is the regional rail operator in the Masovian Voivodeship of Poland. The original motivation for the introduction of an integrated public transport ticket, including urban public transport, local, and regional rail connections, was to increase urban rail mobility. Masovian Railways trains operate with high frequency, particularly on the cross-town railway line, representing an attractive way of traveling within the city.

The functioning of such common ticketing is based on financing sections of railway lines by individual municipalities. This causes certain instability in its functioning. During a given budget year, a municipality may decide to withdraw funds from the common ticket budget. As a result, integrated ticketing is not available on a certain section of the line.

The system is attractive to passengers, but expensive for the local authorities, due to loss of budget refunds from discounted ticket fares and tripled operating costs.  

5.4. Numerous Taxes, fares and charges

Various stakeholders, especially in air transport, have highlighted several issues, including taxes, fares and charges (TFC).

For example, concerning air transport, stakeholders reported that there are currently over 8000 different TFCs in the system. Therefore, issuing integrated ticketing, which includes air transport journeys, shall quote and collect the correct TFCs for that journey.

In addition, according to some stakeholders, it may be complicated for airlines to enter into integrated ticketing agreements. This complication arises from the fact that airports charge the operating airline, not the non-air multi modal vendor that issued the original ticket. Therefore, the charging system can add complexities, especially in the case of travel connections and stopovers.

5.5. Fare Data Access

Three kinds of information should be available to create real EU-wide integrated booking, ticketing and payment systems: schedules, fares, and seat availability.

Delegated Regulation (EU) 2017/1926 covers, among other elements, the schedules and certain minimum standards for interoperability and data access; however, it does not cover dynamic fare data.

Sharing fare data (static and dynamic) is essential for the success of EU-wide integrated ticketing.

As mentioned above at para 3.1.2, static fare data are defined as fare data which do not change, or do not change often. Dynamic fare data refers to how the fare (or ticket price) is calculated in real time, depending on a set of variables that determine the price of a ticket in real time.

130 World Bank, Removing Barriers to Public Transport Fare Integration in Poland: Key Directions of Change. 2016.
According to the analysis carried out, while the static fare data is often open to the public and other transport operators, real time fare data is not.

Delegated Regulation (EU) 2017/1926 already covers the accessibility of standard static fare data, including minimum standards for access exchange and reuse. In addition, it provides that when Member States decide to mandate access to dynamic travel and traffic data of different transport modes through the national access point (NAP), transport authorities, transport operators, infrastructure managers or transport on demand service providers shall use the standard indicated in the Regulation.\textsuperscript{131} However, the ability to mandate access to dynamic data does not encompass the fare data.

Member States have not set legal obligations for access to fare data.

One of the only exceptions applies to Finland, where the Act on Transport Services requires that all the operators offering passenger transport services must be able to provide the essential information on routes, stops, timetables, prices and accessibility related to their services. In particular, the Act provides that essential, up-to-date data on the transport service shall be freely available through an information system (open interface) in a standard, easily edited, and computer-readable format.

In this context, the Finnish Transport Act advances the Delegated Regulation (EU) 1926/2017. The Act requires all the transport providers, public and private, and irrespective of the transport mode to make an essential set of data, including fares, freely available on an open interface. In addition, the last paragraph of Section 2 provides that “A service provider obligated to open a ticket and payment system interface pursuant to subsection 1 and a mobility and integrated mobility services provider that utilises the interface shall work in co-operation to facilitate the necessary practical arrangements.”

An interesting example comes from the Flemish region of Belgium, where the Flemish Decree of 26 March 2004, relating to access to government information, mandates that the public agencies share their fare data to an open data platform.\textsuperscript{132}

In other Member States, much of the static fare data is currently shared. Some elements of fare data are shared on a voluntary basis, where data, such as prices and schedules, are available to everyone. For example, prices are considered public information in most of the Member States and are open to the public and third parties. This applies to Luxembourg, France, Slovakia, the Czech Republic, Flanders and Austria.

In Austria, ARGE OVV, the umbrella organisation of Austrian public transport associations, collects and aligns travel schedules and information across the regional transport associations.

However, the process does not usually apply to private operators. The private operators mostly share their fare data on a voluntary basis or based on agreements with other private operators and/or the national authorities. Private operators share their fare data as a result of agreements or the development of common standards on fare data at a national level.

The lack of common rules regarding fare dynamic data access and use for both public and private operators increases the complexity and reduces opportunities for integrated ticketing and payment systems to be developed.

\textsuperscript{131} Article 5 Regulation (EU) 2017/1926.
\textsuperscript{132} https://www.tienen.be/decreet-openbaarheid-van-bestuurpdf
In addition, in the absence of common rules and standards, fare data is collected and
made available in different formats based on the choice of the parties to the
commercial agreement.

Furthermore, the lack of a legal framework for fare data access going beyond
Delegated Regulation (EU) 2017/1926 increases uncertainties concerning the use of
the data in non-abusive manners. Dynamic fare data access must be subject to terms
and conditions of use in order to avoid any undesirable exploitation.

Finally, dynamic fare data is sensitive information and the exchange of it may raise
competition law concerns.

Stakeholders confirmed that missing legal framework for dynamic fare data is one of
the main obstacles to the development of the integrated ticketing.

5.6. Conclusions

Desk research evidenced some legal challenges.

From a legal point of view, issues related to subsidisation and dynamic fare data
access remain the most widely perceived obstacles.

The lack of common rules regarding fare dynamic data access and use for both public
and private operators increases the complexity and reduces opportunities for
integrated ticketing and payment systems to be developed.

While transport operators under public service obligations (PSO) have, to a certain
extent, the obligation to provide data, in order to create an efficient system, there
must be access to data for non-PSOs or commercial operators.

According to some stakeholders, PSOs are considered an obstacle for revenue sharing
in integrated ticketing. The combining of the integration of state subsidized mobility
services and commercially viable services with integrated mobility solutions can be
difficult. The difficulty arises because the subsidisation of the operations has an impact
on how transport operators are allowed to sell their tickets.

In addition, complications for third parties in developing an integrated ticketing
product can arise from the fact that PSOs operators may be exempted from providing
fare data access. The exemption arises under clauses related to the subsidized fares.

In order to address the issue, the Finnish Act on Transport mandates that public
service providers under PSO comply with the interoperability. This ensures the
existence of integrated ticketing and payment services.

Following the Finnish approach, it could be argued that PSOs may represent a
potential solution rather than a barrier. Incentives for the contracting authorities in
including fare data access for integrated ticketing may be included in the contractual
conditions with the transport operators, especially where exclusive rights are granted.
In addition, the relevant provisions of Regulation (EC) 1370/2007 on revenues
allocation between the contracting authority and the transport operator can provide
the legal basis for appropriate interventions.
6. Competition rules applicable to integrated ticketing

6.1. Introduction: outcome of the consultation

As explained previously, integrated ticketing requires access to travel and traffic data, including prices (both static and dynamic). However, fares, particularly dynamic fares, are included in principle business secrets. A single common fare can amount to a price fixing among competitors, and consequently, such agreement may constitute an infringement under EU competition rules.

In the absence of a common legal framework, and without further guidance by the European Commission\(^{133}\) and/or EU Court of Justice (CJEU) case law, most of the operators responding to the stakeholders’ consultation highlighted antitrust concerns for such exchange of information.

In addition, national competent authorities have indicated that the exchange of sensitive information among competitors and/or companies at various levels of the supply chain, and some incumbents’ refusal to supply as the main competition law concerns.

According to these respondents, entering into distribution agreements can be complicated. This is especially true when incumbent transport operators, who prefer direct sales in order to remain in contact with customers, choose to remain contractually exclusive with such customers to avoid distribution fees.

In Germany and France, the competition authorities adopted decisions regarding railways operators for abuse of their dominant position in rail passenger ticket sales (Germany)\(^{134}\) and for vertical restraints (France)\(^{135}\).

In addition, certain competition authorities have provided guidance on how to handle certain specific competition issues in integrated ticketing and payment systems. For example, the FICORA Code of Practices,\(^{136}\) accompanying the Lippu project, evidences the importance of respecting competition law provisions. In particular, if a company has a dominant market position, unfoundedly discriminatory procedures are prohibited. As indicated by the Code, any refusal to provide an interface may be contrary to Finnish competition laws if the service provider has a dominant position in the relevant market.

As mentioned above, in the UK, the CMA has considered it necessary to clarify the application of the competition rules. It limits its application to some exchanges of

\(^{133}\) Guidelines on Horizontal Cooperation Agreements, quoted.

\(^{134}\)In 2014, the German Bundeskartellamt launched proceedings against Deutsche Bahn, after competitors complained that they had at the most only limited access to Deutsche Bahn’s sales channels and in particular the could not sell their tickets at railway stations. A possible concern was that Deutsche Bahn was abusing its dominant position under Article 102 TFEU and Sect. 19 German Competition Act (GWB). In 2016, Deutsche Bahn submitted commitments to change this sale of tickets practices, including allowing competitors to sell the train tickets in railway station shops: https://www.bundeskartellamt.de/SharedDocs/Entscheidung/DE/Fallberichte/Missbrauchsaufsicht/2015/B9-136-13.html

\(^{135}\) Expedia and the French state railway company, SNCF, had entered into a joint venture for the sale of tickets and other travel services over the Internet, as a result of which Expedia obtained privileged access to a particular website created by SNCF. To that end, in 2004, the parties established a joint subsidiary, Agence Voyages-sncf.com (“Agence VCS”). The French Competition Authority found that this cooperation between SNCF and Expedia to be agreement whose object was to restrict competition, and thus contrary to Article 101(1) TFEU and levied fines on Expedia and SNCF: 09-D-06, Décision du 5 février 2009 relative à des pratiques mises en œuvre par la SNCF et Expedia Inc. dans le secteur de la vente de voyages en ligne.

\(^{136}\) Lippu project report on contractual practices for travel chains defined in the Act on Transport Services (codes of practice for travel chains) Publications by FICORA 00x/2018, available at: https://www.traficom.fi/sites/default/files/media/file/Contractual%20practices%20for%20travel%20chains%20defined%20%20travel%20services%20.pdf
information related to integrated ticketing, and in particular, to price fixing in certain multimodal ticketing schemes.\(^{137}\)

In our opinion, the EU competition rules, the Guidance provided by the European Commission and the case law of the CJEU can help connect the commercial behaviours of operators and the anticompetitive behaviours, with specific reference to refusal to supply and exchange of information (including when such exchange of information may amount to price fixing).

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6.2. Refusal to supply as an abuse of dominant position under Article 102 TFEU

There has been a long line of CJEU case law concerning refusal to supply behaviour. Much of this case law addresses such conduct when adopted by a dominant firm in the relevant market, and submits that in this instance, it may be considered an abuse of dominant position. This is also reflected in the responses to the targeted interviews, where several respondents replied that incumbents do not have an incentive to cede their market power, or, when they collaborate, they wish to act as an aggregator.

The CJEU recognized that the refusal to supply, in particular with reference to data protected by IP rights, is a commercial behaviour that does not constitute an anticompetitive behaviour. In *Bronner*, Advocate General Jacob made clear that the right to choose one’s trading partners is a recognised principle in the laws of the Member States. Additionally, he stated that incursions on those rights require careful consideration.\(^{138}\) Similarly, the refusal to grant a licence, even in return for a reasonable royalty, does not in itself amount to abuse of a dominant position, since the IP owner can exclude others from using its IP without its consent.\(^{139}\)

According to the CJEU case law, it is only in exceptional circumstances that a refusal to supply amounts to an abuse of a dominant position. The exceptional circumstance is when the undertaking is dominant in the relevant market, adopts, in the exercise of an exclusive right granted by the law, certain and such behaviour that is directed at eliminating competition.\(^{140}\)

In the *Magill* judgment, the CJEU held that the refusal to provide an IP licence was abusive conduct in violation of Article 102 TFEU, when that conduct prevented the emergence of a new product, for which there was consumer demand, the requested data were indispensable to operate such new product and the refusal was not objectively justified.\(^{141}\) According to the CJEU, the abusive behaviour ultimately was directed to reserve a secondary market for the incumbents, by excluding all competition in that market.\(^{142}\)

The criteria for the refusal to supply to amount to an abuse of dominant position were further clarified by the CJEU in its *Magill* and *IMS Health* case law. The threshold is met when: (a) the refusal is likely to eliminate all competition in the relevant market; (b) such refusal is not objectively justified; and (c) the service in itself is indispensable

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\(^{138}\) Case C-7/97, Bronner v Mediaprint, EU:C:1998:569.

\(^{139}\) Case 238/87 Volvo v Veng, 1988 E.C.R at 6211, para. 8.

\(^{140}\) Case 53/87 Renault, 1988 E.C.R. at 6039, para. 15.


\(^{142}\) Id. para. 56.
for carrying out the activity, inasmuch as there is no actual or potential substitute for such data.\textsuperscript{143}

In the *IMS Health* judgment, the CJEU also endorsed *Magill’s* new product criterion. It held that the refusal by an undertaking in a dominant position to allow access to a product protected by IP right, where that product is indispensable for operating on a secondary market, “may be regarded as abusive only where the undertaking which requested the license does not intend to limit itself essentially to duplicating the goods or services already offered on the secondary market by the owner of the intellectual property right, but intends to produce new goods or services not offered by the owner of the right and for which there is a potential consumer demand.”\textsuperscript{144}

In *Bronner*, the CJEU ruled that a product or service is indispensable only if there are no alternative products or services and if there are technical, legal or economic obstacles that make it impossible or unreasonably difficult for any undertaking seeking to operate on the downstream market to develop, possibly in cooperation with other companies, products or services.\textsuperscript{145} These CJEU requirements are only met if proven that the data owned by the incumbent is truly unique and that there is no possibility for the competitor to obtain the data that it needs to perform its services. Improved data access, when too broad, may also lessen incentives for rivals to develop their own sources of data.\textsuperscript{146} Therefore, when alternatives exist, even if less advantageous for rivals, requiring access to data based on the incumbent pleading refusal to supply such access in violation of Article 102 TFEU, presumes that competitors’ building of such data is not economically viable. This presumption is in accordance with the *Bronner* jurisprudence.

At the national level, various authorities have analysed competition issues arising from the possession and use of data. A Franco-German joint paper by the French competition authority and the German competition authority\textsuperscript{147} shows that national competition authorities (“NCA’s”) are reflecting about possible competition issues arising from the possession and use of data, including possible violations of Article 102 TFEU. The authorities conclude that the CJEU case law lays out the conditions and solutions to dealing with data use and access. According to these authorities, “[r]efusal to provide access to data can be anticompetitive if the data are an "essential facility" to the activity of the undertakings asking for access. However, the CJEU has circumscribed compulsory access to essential facilities to only a limited number of cases as even a dominant company cannot, in principle, be obliged to promote its competitor’s business. More precisely, according to the ECJ’s rulings in "Bronner", "IMS Health" and "Microsoft", an undertaking can request access to a facility or network if the dominant firm’s refusal to grant access concerns a product which is indispensable for carrying on the business in question, if the refusal prevents the emergence of a new product for which there is a potential consumer demand (this condition being applicable when the exercise of an intellectual property right is at

\textsuperscript{143} Case C-7/97, Bronner v Mediaprint, EU:C:1998:569: «Therefore, even if that case-law on the exercise of an intellectual property right were applicable to the exercise of any property right whatever, it would still be necessary, for the Magill judgment to be effectively relied upon in order to plead the existence of an abuse within the meaning of (Article 102 TFEU) such as that which forms the subject-matter of the first question, not only that the refusal of the service comprised in home delivery be likely to eliminate all competition in the daily newspaper market on the part of the person requesting the service and that such refusal be incapable of being objectively justified, but also that the service in itself be indispensable to carrying on that person’s business, inasmuch as there is no actual or potential substitute in existence for that home-delivery scheme." Id. para. 46.

\textsuperscript{144} Judgment of the Court of 29 April 2004, C-418/01, IMS Health GmbH, EU:C:2004:257, para. 49.

\textsuperscript{145} Case C-7/97, Bronner v Mediaprint, EU:C:1998:569, paras. 43 and following.

\textsuperscript{146} Opinion of Advocate General Jacobs delivered on 28 May 1998 in Case C-7/97, Bronner v Mediaprint, ECR [1998] I-07791, para. 57.

\textsuperscript{147} French Competition Authority and German Competition Authority, Competition Law and Data, 10th May, 2016: http://www.autoritedelaconcurrence.fr/doc/reportcompetitionlawanddatafinal.pdf.
stake), if it is not justified by objective considerations and if it is likely to exclude all competition in the secondary market.”

In our opinion, the CJEU jurisprudence provides important clarification of data access by dominant undertakings. The main point that remains open is the notion and identification of the types of “indispensable” data, to which access shall be granted in order to develop a product on the secondary market, and for which there is consumer demand.

6.3. Exchange of information between competitors and integrated ticketing

Chapter 2 of the current Guidelines on horizontal cooperation agreements provides general principles on the competitive assessment of exchanges of information between competitors, including, in particular, the assessment under Articles 101(1) and 101(3) TFEU. Information exchange takes various forms, such as data shared directly between competitors, data shared indirectly through a common agency or a third party and data shared through the companies’ suppliers or retailers.

In some instances, the exchange of information could also lead to restrictions of competition when it enables companies acknowledge their competitors’ future market strategies. According to the Guidelines, the competitive outcome of information exchanges depends on the characteristics of the market (such as concentration, transparency, stability, symmetry, complexity), as well as on the type of information that is exchanged.

The European Commission has previously dealt with a number of cartel and antitrust cases that violated Article 101(1) TFEU. The violations arose because, in these cases, information disclosure was at the heart of, or part of, an anti-competitive agreement or concerted practice.

While the exchange of information can be beneficial for integrated ticketing, it can also leave companies with uncertainties as to how far their cooperation shall go in order to comply with (and not violate) Article 101(1) TFEU.

The main issue regarding the Article is whether commercially sensitive data can be exchanged between competitors without violating Article 101(1) TFEU. Indeed, integrated ticketing with a single fare can amount to a price fixing. However, the Guidelines provide that, under certain circumstances, the exchange of information between competitors (including price fixing) can generate efficiencies for consumers.

Under the Guidelines, the companies must self-assess, bearing in mind the abovementioned case law, to determine its compliance with Article 101(1) TFEU. Additionally, in the affirmative, companies must self-assess whether efficiencies can be claimed under Article 101(3) TFEU, provided that the criteria for the application of the Article 101(3) TFEU exception are met.

In particular, under Article 101(3) TFEU, companies may redeem any agreement or category of agreements between undertakings, any decision or category of decisions by associations of undertakings, any concerted practice or category of concerted

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148 Id. Page 18.
150 EU Horizontal Cooperation Guidelines, para 58.
151 http://ec.europa.eu/competition/international/multilateral/2012_feb_disclosure.pdf
practices, otherwise prohibited under Article 101(1) TFEU which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not:

(a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives; and/or

(b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.

Such efficiencies can, for example, be the emergence of a new product for which there is consumer demand, as mentioned above. Another possible example is an improved distribution method, relevant especially when the cross-border market is considered. The benefits must consist of appreciable objective advantages. In addition, the information exchange must not be broader than what is necessary to enable the new product or the new or superior distribution method. Further, it must not afford the undertakings the possibility to eliminate competition in a substantial part of the relevant market. The onus of demonstrating such efficiencies is on the undertakings claiming them.

It may also be advantageous to evaluate whether the companies wishing to exchange commercially sensitive data without infringing EU competition laws, could benefit, from a block exemption in certain circumstances. For example, like the CMA has done with respect to certain public transporting schemes. This would mean that Article 101(3) TFEU is presumed applicable to such types of information exchanges, provided that the criteria under the block exemption regulation are met.

The CMA previously recognized the efficiencies that could benefit consumers. Importantly, the protection of the environment has been recognised as efficiency under such block exemption.

6.4. Conclusions

While stakeholder consultation and literature have indicated competition as a complication, it would seem that CJEU case law and the European Commission guidelines provide sufficient clarity concerning the situations that may amount to anti-competitive behaviours. The case law and guidelines cover the refusal to supply and exchange of information-price fixing.

In addition, the CJEU case law on refusal to supply provides guidance on data that may be considered essential and non-replicable for the development of new products on secondary markets for which there is consumer demand. Similarly, the Horizontal Guidelines provide clarifications of agreements between competitors that can produce benefits and efficiencies for consumers.

152 7.2., above.
154 Competition and Markets Authority, Guidance on the public transport ticketing schemes block exemption, 16 September 2016, quoted.
155 Id: “Certain schemes may yield benefits for consumers and others, such as facilitating the efficient use of resources or reducing consumer transaction costs. For example, schemes might encourage public transport use, hence reducing road congestion and pollution, while benefiting passengers both economically and socially with an improved level of public transport services”, page 7.
These criteria could be useful in making decisions regarding the development of integrated ticketing products, concerning the minimum dynamic fare data for which access should be granted, and the conditions for such access.
7. Commercial barriers

Private companies are unlikely to support integrated ticketing without commercial interest, business incentives or business opportunities. In addition, several actors must collaborate for a scalable integrated mobility service to materialize. Therefore, the bigger the geographical area, the more difficult it is to achieve cooperation. The legal survey confirmed that integrated tickets, which permit the use of different transport modes with the same ticket, require a complex decisional process. The process is linked to the sharing of ticket sale revenues, which have no direct relation with the technical solution applied/implemented.

If long-distance and local/urban services are to be combined, separate negotiations with a large number of operators are required.

As explained by various transport operators responding to the stakeholder’s consultation, commercial and technical barriers are two sides of the same coin. Lack of commercial interest reduces opportunities for technological developments and the lack of common standards and interoperability reduces commercial interests. This is because the development of new services would require long negotiations and large technological investments.

The majority of existing projects are focused on specific groups of users (cross-border short distance commuters), specific areas (within a city or region) and in some cases, long distance integrated ticketing, including rail-air travels. The common denominator of these projects is that most of the initiatives are supported (and funded) by the public authorities.

As clarified by the literature analysis, integrated mobility services must reach a critical mass of users to be successful. Highlighted was the need to identify a customer base that both has sufficient spending power and is large enough to provide the critical mass needed to successfully provide the services.

7.1. Unfair trading practices

Some practices of incumbents – not necessarily caught by the scope of competition laws – may still constitute unfair trading practices.

Unfair trading practices are practices that grossly deviate from good commercial conduct and are contrary to good faith and fair dealing. Unfair trading practices are typically imposed in situations of imbalance, by a stronger party on a weaker one, and can exist from any side of the business to business (B2B) relationship.

Unfair trading practices can occur at any stage of the contractual relationship: during negotiations, when the contract is performed, or in the post-contractual phase. As emphasised by the European Commission, during the performance of the contract, unfair trading practices may consist of two types of behaviour. Either one party simply executes unfair terms in a contract, or the stronger party abuses its position, even if the terms of a contract appear to be acceptable for both parties (normally contracts do not cover all aspects of the parties’ behaviour under the contract, or are so complex that the parties do not fully understand what the terms imply in practice). Moreover,

157 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Tackling unfair trading practices in the business-to-business food supply chain, COM/2014/0472 final.
parties may have different amounts of information about the transaction, which may lead to unfair conduct by a stronger party towards a weaker counterpart (in particular when the weaker party is an SME).

Certain unfair trading practices, for example, predatory prices, may be caught within competition rules. In particular, Article 102 TFEU may apply in these situations, provided the incumbent has a dominant position in a relevant market. However, as mentioned above, the CJEU jurisprudence and the Commission guidelines are well equipped to address unfair trading practices that stem from abuse of a dominant position.

Even when the market power of incumbents does not reach the threshold of dominance, incumbents may still be at risk. For example, in regards to certain terms and conditions in resale ticket pricing contracts or when, at the detriment to competitors, aggregators confer preferential treatment of certain results in their dealings with ticket vendors. In such cases, while the conduct may not fall under the scope of competition laws, it may still constitute a business practice between an operator and business user.

7.2. Interoperability and ability to invest

Where interoperable and integrated ticketing and payment systems already exist, the technology of these systems is proprietary and cannot be accessed by other service providers. As reported by a previous study, even within individual Member States, most metropolitan regions have proprietary travel information systems. According to the Study, "Harmonisation and cross-regional coordination among these systems is crucial. It was stated that transport operators often resist a harmonised approach for reasons of data ownership. Additional emphasis was put on data and cyber security at national levels. Stakeholders signalled significant demand for a European "code of conduct" regarding the organisation of open data access."

Where integration of ticketing and payment systems does not exist, high investments are required. This may represent a significant barrier for small and medium size enterprises. In addition, some stakeholders claim that transport operators with short service contracts (below 10 years) do not have an incentive to invest in innovative ticketing because there is uncertainty that they will achieve returns from the investments.

Moreover, according to some stakeholder consultation respondents, service providers under PSOs should be required to cooperate with, and make information available to, other service providers under common standards and interfaces.

A user-friendly integrated ticketing system can only be achieved with large investments and the cooperation of transport operators that are aware of the benefits of such a system. Furthermore, passengers and consumer organisations must witness the benefits of the technology used for the ticketing systems.

As clarified by the literature, in order to create an integrated ticketing mechanism, investments are required, in particular:

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159 Is it possible to proceed to direct award of public contracts for 5 or 10 years. For example, in Ireland, in 2019, the National Transport Authority decided to Directly award a new contract for the provision of public bus services, in the Dublin Area for five years. https://www.nationaltransport.ie/public-transport-services/public-service-obligation-contracts/.
• Software for integrated ticketing systems (to connect the systems of different operators, internet tool for subscriptions, user software with an easily understandable interface, etc.);
• Maintenance agreement for software, if proprietary;
• Costs for updating the system and the software;
• Additional costs (e.g. for the development of a monitoring system).

Most of the respondents to the stakeholders’ consultation reported that the use of different ticket sale and distribution systems is the biggest challenge to ticket integration.

This assertion was also reflected in the replies to the targeted interviews, the majority of which mentioned different sale and distribution systems among the challenges to integrated ticketing.160

Transport operators reported different ticketing systems, costs of developing new interfaces, and loose ticketing standards as possible barriers. These barriers are also due to the fact that each ticketing system has its own local specificity and norm.

The necessity of long negotiations between operators in order to agree on standards, interfaces and data designs data and revenue sharing was also identified as a barrier by the majority of respondents.161

Industry-driven initiatives exist, especially in specific sectors, such as air and rail. FSM is a voluntary rail industry initiative, which brings together key players in the rail and distribution sectors (railway undertakings, GDS, travel agencies) to improve access to rail tickets. The initiative is part of the distribution agreements, which include FSM specifications, accessible to all free of charge and provide a unique IT framework to support distribution of rail passenger products. By using these harmonized specifications, companies that wish to distribute their products via (or combined with the products of) other operators or ticket vendors will no longer need to develop bilateral tailored IT interfaces with each of their commercial partners. In addition, for international railway journeys, the manual for International Rail tickets provides CIT members with the necessary standards for issuing international tickets.

### 7.3. Access to and use of data: licence and distribution agreements, CJEU case law

While it is widely expected that the public sector will support open data policies, the private sector is generally more hesitant to share data. Many private-sector mobility providers see a competitive advantage in keeping data proprietary. In this context, it is necessary to make distinction between the data sharing for information and data purposes.

For information purposes, the notion of agreement was considered by Delegated Regulation (EU) 2017/1926.

As confirmed by consultation respondents, various Member States require transport operators, both public and private, to publish their timetable and fares; however, there is no obligation to grant third-party licences for the re-use of the data, especially for distribution purposes.

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160 See Annex III and IV.
161 11 respondents.
For rail and air transport, prices are yielded, which means that the price change is based on the demand, the date of departure, and various other factors. Yielded prices are available only to distributors under distribution agreements.

Therefore, in order to develop a new distribution service, it is necessary for transport operators and other parties of the value chain to enter into licence and distribution agreements.

When asked to identify the main barriers to entry into the integrated ticketing market for potential suppliers in their country, the legal survey responses varied between modes of transport. The most common response was the transport operators’ refusal to enter into distribution agreements. This barrier was typically paired by railway operators with the market power of transport service providers, pointing at a vendor lock-in problem.

Case law

CJEU case law has allowed contractual arrangements adopted by an operator to prevent the use of its published data under the recognition of the contractual protection of databases. Where data, including fares, is accessible, the owner of the data can lawfully impose contractual limitations to its commercial use.

Database protection and sui generis rights are generally inapplicable to databases such as those containing travel information. However, the CJEU clarified that the lack of the EU provisions applicability does not preclude the author of such a database (in the case at hand, Ryanair) from imposing contractual limitations on its use by third parties, without prejudice, to the applicable national law. Therefore, transport service providers, including those in a dominant position, may exclude third parties from the use of their database in order to provide distribution services.

Recently, the Paris Commercial Court warned the online travel agent lastminute.com against the sale of Ryanair tickets without the consent of the airline and the use of information on its website for commercial purposes (screen scraping).

Some solutions

Commercial terms, which do not allow for the data to be changed in any way (which would prevent corrections to data by a third party), or claims of intellectual property rights on any downstream data derived from the source data represent relevant limitations on the development of multimodal travel products, including ticketing.

Some Member States have sought to reduce the impact of this provision by establishing legal entities to manage contracts with the numerous data sources. Thus, these entities provide common licenses for third party use, for example “Trusted Third Party” in Austria and Rejseplanen in Denmark.

Stakeholders also suggested some solutions to the barriers. First, the operators would be more willing to engage the sharing fare data if it is done in a transparent way and the autonomy of the provider is respected, or if there is a national authority or municipality safeguarding the process.

It was found that voluntary industry agreements are more successful if conducted in the presence of a mediator. The mediator guarantees protection against data misuse.

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162 Judgement of 15 January 2015, C-30/18, Ryanair Ltd v PR Aviation BV, EU:C:2015:10
163 Ryanair Ltd v PR Aviation BV, quoted, paragraph 45.
164 Paris Commercial Court, 6 April 2018.
and guarantees fair competition between the operators. The mediator could be a National authority or an association of transport operators. As mentioned above, this solution has been adopted in certain Member States.

*An example in the payment service area*

Open access to develop innovative services was introduced in the payment service areas. This allows clients to make their payments using software developed by authorised third parties (PISP and AISP) that are granted access to data via APIs.

### 7.4. Cooperation among a large number of stakeholders

Cooperation among the stakeholders also proves a challenge due to the large number of operators and service providers. If long-distance and urban services are combined, separate negotiations with a large number of operators are required.

In the Web Survey, a large majority of respondents mentioned poor cooperation among operators in a competitive environment as a commercial barrier.

Specifically, 74.2% of the respondents pointed to the feeble cooperation as a barrier to integrated ticketing.

According to the respondents of the stakeholders’ consultation, challenges in achieving agreements between operators have been identified as:

- lack of trust between the operators;
- high competition;
- lack of experience or expertise; and
- missing legal framework.

These results were confirmed by the online survey, where 58% of stakeholders believe that operators are unwilling to join collaborations due to a lack of trust.

In addition, a previous study noted that the lack of trust, associated with lack of transparency on service levels, makes it difficult to invest in systems that will make use of particular data feeds if there is no certainty that those data feeds will remain available long-term.¹⁶⁶

### 7.5. Different business models

A corollary of the existence of a large number of stakeholders involved is the use of different business models. Several respondents to the legal survey pointed at the existence of different business models as a barrier to integrated ticketing.

In particular, respondents in the targeted interviews claimed that the main barrier of integrated ticketing is the different business model applied by the railway carriers and sales partners. This, in turn, impacts the business incentives of such stakeholders. Additionally, some respondents stated that business models are a barrier for wider (cross-border) integration. This is because they may make collaboration between many stakeholders, a prerequisite to integrated ticketing, hard to reach.

In the Web Survey, a majority of respondents (54.8%) pointed at the use of different business models as a barrier to the uptake of integrated ticketing. Further, various stakeholders stated that different business models and commercial barriers result from the absence of common technical standards and interoperability (commercial barriers are directly connected to technological barriers).

The stakeholders’ survey suggested that the integration of urban public transport into mobility platforms is sub-optimal because tickets cannot be booked on-line and many cities or areas are not covered by booking systems. Additionally, travel data is not transmitted to passengers in real-time.

7.6. Commercial freedom and access to the market

The adoption of integrated ticketing business models depends on the commercial choices of transport operators, vendors and aggregators. These operators may have conflicting interests. Additionally, from a legal standpoint, a major issue appears to be finding the right balance between ensuring transport operators’ commercial freedom and simultaneously ensuring providers of integrated ticketing schemes access to the market.

As mentioned above, the right to choose one’s trading partners is a recognised principle of national law and incursions on those rights requires careful consideration. Only when certain conditions, defined by the competition rules and CJEU case law, are met, the refusal to enter into an agreement may be considered anticompetitive.

7.7. Reputation and assistance to customers

For each operator, a relevant source of revenue comes from positioning its brand on the market. Therefore, agreements for the use of a brand and data require careful negotiation. One respondent to the legal survey confirmed that a close connection between one’s brand and the provided product/service is crucial for creating customer loyalty and for positioning oneself in the market.

Therefore, a commercial obstacle to integration is related to the fact that ticket vendors/aggregators do not offer assistance to customers. This may affect the reputation of the transport service providers.

7.8. Revenue sharing and fare management

Finding the right balance in revenue sharing among various participants in the integrated ticketing scheme is an outstanding issue. Integrated ticketing requires that all participants in the scheme circulate ticket prices for all segments. The parties involved must agree on the commissions to be paid to the lead retailer or to the third party involved. Further, clearing and settlement must be carried out. Achieving integration means changing many back-office processes.

The stakeholders’ consultation respondents confirmed that integrated ticketing permitting the use of different transport modes with the same ticket requires a complex decisional process, linked to ticket sales sharing. Many actors are involved in setting up a multimodal payment and ticketing system, including customers, public transport authorities and operators and the payment industry.

According to a previous study, distribution of collected fares among different operators involved “is complex and either needs exact collection of the travel patterns of each customer or otherwise can only be solved by agreed distribution arrangements. While the first method is very complex, expensive and could raise privacy issues, the second
could lead to unfairness. In general, whatever approach is favoured, a large amount of trust is necessary between the different parties involved. For the operators, ticketing has a clear business case and here many established players are active and must be included in the discussion. Outsourcing of some operations can be attractive for operators.

Clearance systems can be particularly complex when different transport modes are involved, especially for long distance and urban (suburban) transport.

Best practices in sharing fare revenues are identified in the above mentioned trusted third parties for fare management, or in the practices applied in other regulated sectors, such as phone roaming and roaming prices.

The management of fares also involves complexities, including promotions, group discounts, weekly or monthly passes, and other options.

Further, the price structure presents an issue. For example, it was observed that in Sweden, zone structure and pricing constitute a barrier, as there are different rules in different regions.

One suggestion is that, in order to make integrated ticketing work, fare structure should be simplified and it shall include innovative fare collection schemes, such as post-travel collection.

In the Netherlands, it was observed that third party providers have access to the public transport with the OV-chipkaart. The use of discounts is only possible after agreement by the owner of that product, but third-party providers can make their own discount products and carry the financial risk.

7.9. The validation and payment parts of the value chain

Interoperability between etickets and readers

For the successful introduction of integrated ticketing systems, transport operators should offer easy and attractive payment methods. For example, the implementation of innovative smart card systems, which can be used for contactless payment of integrated fares.

Modern electronic ticketing systems are, indeed, often based on smart travel cards (using different technologies and standards such as ITSO in UK, Calypso in France and other countries), which are utilized as a means of payment.

Currently, a growing number of transport companies and mobility providers participating in integrated ticketing schemes are also offering mobile apps for easy and flexible access. Additionally, a growing number of travellers use mobile devices for the purchase of ticket and payment for other mobility services.

According to some stakeholders, a technical and commercial barrier to integrated ticketing is that readers, used to check tickets, are not able to read tickets in all available formats. Many of them can only read tickets stored in cards and/or as a barcode. There are common standards for contactless payment card readers, but these rely on trust between schemes to share security keys.

7.10. Account-based ticketing – use of contactless bank cards

167 MIMP, MULTIMODAL TRANSPORT INFORMATION, MANAGEMENT AND PAYMENT SYSTEMS, point 5.3.
As mentioned above, and confirmed by the stakeholders, the PSD2 played an important role in developing account-based ticketing.

In the account based ticketing system, the transit fare collection system architecture can be defined. It can also use the back office system to apply relevant business rules, determine the fare, and settle the transaction.

In account based ticketing, the travel ticket is dematerialised and managed by the back office, which identifies the journey patterns, issues the token/virtual ticket, and processes the payment.

Stakeholders active in payment services confirmed that the development of account based ticketing requires long negotiation with the relevant authorities in charge of the transport services and with the transport operators.

*The case of London*

A successful local example of payment system integration is the Oyster Card implemented in London by TfL, in 2014. Evaluating earlier progress in cities such as Hong Kong with its Octopus card (but also New York City, with Citibank issuing contactless MasterCard cards for use at Subway gate-line), London mapped out a strategy to launch contactless ticketing on its transport system. Therefore, passengers are able to travel on buses, tubes and trains across London by simply touching in and out with their contactless bank card. In addition, with the contactless system TfL provides customers with weekly capping, allowing them to receive the cheapest fare throughout the week and never pay more than a daily or weekly Travelcard.

The initial model was based on TfL’s own Oyster card product and technology. It only subsequently moved to a standardized banking solution that could be used with bankcards, as well as other devices such as mobile phones. Such strategy required TfL to influence international banking and payment industries to adopt “contactless card” standards that would be appropriate for the low value, high frequency nature of public transport, as well as the hostile physical environment of the transport system fare gate.

Since its launch, contactless payment for transport services has grown consistently. Across London, it is now responsible for approximately 50 % of the pay-as-you-go revenue on the Tube and rail and 44 % on buses, with close to 44,000 new contactless cards used on their system every day. Contactless cards are now found in more than 120 countries all over the world.168

London’s contactless system works with bank cards issued from Visa, Mastercard, Maestro and American Express. Further, contactless cards issued outside the UK can be used to pay as the passenger travels, although overseas transaction fees may apply in such cases. Additionally, some cards are not accepted internationally (such as some cards Mastercard and Maestro issued in the USA, Canada and the Netherlands, or Visa and V PAY issued outside the UK).

In addition, mobile payments169 are accepted on devices such as phones, watches, key fobs, stickers or wristbands. However, if a mobile payment associated with a non-UK bank card is used, the card may not work or overseas transaction fees may apply.

However, TfL’s system has not been readily replicated across the United Kingdom’s other cities or many other locations around Europe. In fact, London’s transport funding settlement from the national UK government is radically different, and higher, than

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169 Apple Pay; Barclaycard Contactless Mobile; bPay; Fitbit Pay; Garmin Pay; Google Pay; Samsung Pay
other UK cities. Therefore it has almost precluded the development of a comprehensive multimodal ticketing solution therein. In particular, the replication of the service across the UK has proven problematic for a number of reasons, including the lack of citywide authorities to develop, implement, and support multimodal ticketing; regional rail systems that, while a very important means of transport in many cities, concentrate on regional and national transport needs and are responsible to national government rather than local urban areas; and the inability to agree on and implement a long-term business plan and product that fundamentally benefit customers and businesses that would take many years to come to fruition.

A similar example, but on a smaller scale, was launched by ATM in Milan. It involves a payment system integration using contactless bank cards to travel.

According to the stakeholders, an obstacles to the development of an account based ticketing system is the fact that the fares are collected post-travel, while in the traditional ticketing system, the fare is collected in advance.

Secondly, in order to use an account based ticket on different transport modes, there must be a common validation system. This is costly for the transport operators and authorities, as they must change the infrastructure needed for the ticketing validation.

Another major area of concern is security of personal data: account based ticketing requires access to a large number of personal data, including account/credit card numbers, address, and location data.

7.11. Conclusions

As far as commercial barriers to integrated ticketing are concerned, a distinction shall be drawn between the public and private sectors. While, as noted, political or legal barriers may be of some relevance for public actors, the main hurdles for private actors are identified at the commercial level.

Technological barriers are identified in the lack of interoperability between the interfaces of the various stakeholders and use of different standards. This increases costs and reduces incentives to invest, and requires negotiation and licences and distribution agreements. As previously mentioned, technological barriers represent the other side of the commercial barriers, since different business models are also the result of a lack of interoperability and common standards.

Other issues are related to (a) the large number of stakeholders involved, which increases the transaction costs, and (b) the commercial freedom of undertakings which may refuse to enter into commercial agreements, which does not necessarily entail an anticompetitive behaviour.

An important commercial element of the value chain is the revenue sharing. Revenue sharing among multiple parties requires new back office structures and new models for fare and revenue collections. For example, in order to make integrated ticketing work, fare structure should be simplified and the transport operators and stakeholders should also agree on new fare collection schemes, such as post-travel collection.
8. Assessing passengers’ experience

Online consumer panels were used to gather qualitative information about passengers’ experiences with integrated ticketing. The questionnaire was designed in line with the study objectives, aiming to collect information about the overall experience of passengers of multi-modal transport\textsuperscript{170} and users of integrated ticketing systems, as well as their needs and expectations in this matter. Questions were structured around the following themes:

- Experience with multi-modal traveling in Europe;
- Experience with purchasing single integrated tickets in Europe;
- Perceived benefits of using a single integrated ticket for multi-modal journeys.

Citizens of six EU countries Belgium, France, Germany, Italy, Poland and the UK) were recruited through an online questionnaire scripted and hosted by SurveyGizmo®. Data collection took place over a 2-day period, from 3 August to 4 August 2018. Overall, 520 panelists were selected based on the following three selection criteria: (i) being above 18 years of age; (ii) being a resident of the above-mentioned countries; and (iii) having used a transport service at least once in the last 12 months.

The survey sample was quite balanced between the two genders. In terms of age, most respondents were aged between 35 and 54 (39% of all respondents). The distribution among the selected countries is homogeneous, with a mean of 90 respondents per country.

8.1. Key Findings

This section is organised in the following four sub-sections: (i) how people travel multi-modally; (ii) the use of the integrated ticket; (iii) the perceived benefits of the integrated ticket; and (iv) general level of satisfaction.

8.1.1. Multi-modal journey experiences

In this first section, the Report analyses results about the habits of the respondents when it comes to travelling with the use of different transport means. Overall, the most used means of transport are the rail (with a total of 64.4% respondents selecting the option, and most used means of transport in the UK), rented or shared cars (64% of total responses, and most used means of transport in Belgium, France and Poland) and planes (selected by 56.3% respondents and being the most used means of transportation in Italy).

8.1.2. The use of the integrated ticketing

In order to present the findings related to the use of the integrated ticketing, the respondents were first asked to specify whether they are normally able to purchase an integrated ticket for their entire journey, in three different journey settings (i.e., travelling internationally within the EU, travelling in the region of a country within the EU and finally travelling in a city within the EU). The responses suggest that there is not a striking difference between the three different journey types. For instance, travelling within a European city does not guarantee more chances to buy an

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\textsuperscript{170} In the survey, we defined multi-modal travel as a journey that involves more than one means of transportation used to reach the destination.
integrated ticket than travelling internationally within the EU, or within a region or country within the EU.

Second, respondents were asked in which country they were able to purchase an integrated ticket. 22% of respondents indicated they were able to purchase such ticket in Germany. People travelling to France and the UK were also able to purchase an integrated ticket. Outside the EU, respondents reported that they could buy this kind of ticket in Turkey, the US and Switzerland (among other countries). A total of 14% of respondents were never able to purchase an integrated ticket in any of the provided journey types.

The respondents able to purchase an integrated ticket when travelling were also asked what kind of form the integrated ticketing was released in. In most of the surveyed countries, the ticket was released either as a hard-copy ticket (54% in Belgium, 55% in Germany, 47% in Italy and 53% in Poland) or as an electronic ticket (51% in France, 47% in Italy and 45% in the UK).

Most of the respondents paid for their tickets using a credit or debit card (58% in Belgium, 71% in France, 52% in Italy and 76% in Poland) or cash (42% in Germany and 35% in Poland).

8.2. The perceived benefits of the integrated ticketing

This section encompasses the perceived benefits of the integrated ticketing, along with the expectations of people who were not able to use such a service. In this regard, people who used this type of ticket were asked, based on their experience, to explain the benefits of using a single integrated ticket for their journey. Notably, when asked to predict the benefits of a integrated ticket for a multimodal journey, respondents who did not previously have the chance to buy and use such a ticket named the same three benefits.

Respondents having used the integrated ticket were asked about the extent to which they are confident that the information about the multi-modal travel journey, provided by transport operators, is exhaustive and reliable. As showed in Annex II, Figure 17, most people in the different countries believe they are often provided reliable and complete information about their journey.

In order to gather even more information about the level of users’ confidence in using the integrated ticket, respondents were also asked the extent to which they think they could be provided with a broader choice of transport services (e.g., alternative combinations) when planning their journeys. This depends on the country of residence, overall. Furthermore, in this case respondents believe the above is sometimes (36.1% of respondents) or often (34.6% respondents) true.

8.3. General level of satisfaction

This section provides an overview of respondents’ general satisfaction with the received services and possible suggestions for future improvement.

Respondents in the surveyed countries rated their integrated ticketing experiences so far as good, with Italy scoring the highest percentage (52% of Italian respondents perceive it as good and 13% as very good). British respondents replied most positively, with only 3% of respondents indicating a poor experience and none indicating a very poor experience.
Additionally, respondents were asked to evaluate their satisfaction with different aspects of the multi-modal travel services that they had used. These ranged from the overall quality of the service to the provision of information regarding the journey and the price. The median value of satisfaction from the surveyed countries is between 7 and 8 (where 0 was very dissatisfied and 10 very satisfied).

8.4. Conclusions

The main conclusions drawn from the respondents’ answers are:

- The survey has shown that respondents rely heavily on three main means of transport, namely the rail, cars (rented or shared) and planes. Therefore, the most popular combinations of transport services involve these means. Moreover, people seem to use different modes of transport occasionally and in particular for personal reasons.
- Respondents were sometimes able to buy an integrated ticket for different journey types, both in an urban and non-urban context, as well as internationally. Within the EU, this is especially true for Germany. People usually purchase their tickets at a ticket machine or a counter at the station and pay mostly with a credit or debit card. Finally, respondents seem to equally frequently rely on hard-copy tickets and electronic tickets.
- Respondents that have already used the integrated ticket and those who were not yet able to use it seem to agree that the top three benefits of such a ticket are (i) lower prices and promotions, (ii) ease of booking and (iii) ensured journey connections. Both categories showed respondents’ confidence in being provided with reliable and complete information about their multi-modal journey, as well as with a broader choice of transport services.
- To conclude, respondents rated their integrated ticketing experience so far as good and seemed particularly satisfied with the time-saving possibilities offered by this ticket. However, factors that could improve their experience are cheaper prices and promotions, the provision of clearer information and the creation of dedicated mobile apps.
9. Recommendations

One of the tasks of the Study is to develop recommendations on how to overcome all or some of the barriers, either by legislative and/or non-legislative actions.

The Tender Specifications requested recommendation based on the results of the desk research and of the analysis. Therefore the developed recommendations are directed to address the main challenges identified by the Study.

It is important to recall that the purpose of the Study was not to perform an impact assessment; therefore, the possible choice between the recommended solutions will need a market analysis.

The Study showed that integrated ticketing requires a smooth and seamless cooperation of various actors, in order to deliver the expected results. It requires:

- cooperation between the public and private transport operators (local, regional and national);
- strong partnership among various public and private stakeholders interested in developing integrated ticketing, based on governance arrangements;
- support and participation of the public authorities to the initiatives aimed at the development of the integrated ticketing;
- ensure the access to essential data: travel, traffic and fare data which are necessary for service providers to develop integrated ticketing and payment;
- guidance on licences and distribution agreement;
- development of common standards and interoperability to remove technical barriers;
- investments to support smaller service providers; and
- simple fare structure.

The results of the desk research, interviews and workshop evidenced that there are areas where issues remain. For example, a more precise definition of the conditions for data access by third parties; difficult cooperation among stakeholders; complex and lengthy negotiations to obtain licences and distribution agreements; need to develop common standard and common interfaces; and the need to find solution concerning fare revenue sharing also in order to involve payment systems.

Despite the legal and commercial difficulties, the reviewed evidence, the stakeholder consultation and the legal analysis demonstrate a clear interest in integrated ticketing.

Various initiatives have been adopted at the local and national levels; however, a cross-border integrated ticketing project still does not exist.

The large variety of local and regional transport operators, each developing their own programme, leads to higher transaction costs for integrated ticketing providers. The lack of a common legal framework on integrated ticketing and payment services has been identified by a large majority of respondents as one of the main barriers hindering the development of an EU-wide integrated ticketing. The heterogeneity of national rules concerning road and rail transport services, especially short distance, is considered a major issue that should be addressed through EU regulatory framework.

In this context, national legislators are taking initiatives to promote data access for integrated mobility, moving beyond the basis of the Delegated Regulation (EU) 2017/1926. However, these legislative initiatives may increase fragmentation and barriers across the EU, since they are mainly focused on the national markets.
From the stakeholders’ consultation, it emerged that the majority of respondents\textsuperscript{171} are in favour of an EU legislative initiative, at least to cover the cross-border aspects of the integration.

New rules should be established to close the regulatory gaps, in particular those related to fare data access, while at the same time providing more clarity on the applicable framework and ensuring its consistent application with the Union. Equivalent operating conditions should be guaranteed to existing and new players on the market, enabling new means of payment to reach a broader market.

Several policy measures were considered to address the problems listed above with the scope to propose potential solutions that would enhance integrated ticketing and payment systems. They have been combined into three main types of recommendations: no new measures, soft-law, regulatory measures.

In our opinion, an in-depth market analysis should be carried out, including a definition of relevant markets, in order to identify areas of future intervention.

\textbf{9.1 No new measure}


In the context of no new measure option, it will be important to monitor the fully implementation of the Delegated Regulation (EU) 2017/1926 in particular with reference to the options left to Member States concerning the extension of the access to dynamic data.

Where the national legislator opts for implementing the option concerning the access to dynamic data, some barriers would be removed, especially those concerning standards and interoperability. Additionally, as suggested by various stakeholders, cooperation among operators and distributors to develop integrated ticketing would improve and the costs would be reduced.

In addition, in the context of the “no new measure” approach, it is important to monitor the implementation of Directive (EU) 2016/2370 on the fourth railway package, which promotes the development of EU-wide through-ticketing system. Member States are asked to ensure that such systems do not discriminate between railway undertakings and that they respect the confidentiality of commercial information, the protection of personal data and compliance with competition rules.

Finally, leaving the development of the integrated ticketing to market forces, without any new measures, it will be important to monitor the market initiatives which have good potential to be developed on a larger scale, such as FSM project. The project combines technology and cooperation between rails transport stakeholders. It aims to facilitate online distribution services to benefit travellers and contributes to offering door-to-door travel solutions. To this end, ticket vendors and railways have developed an Open-IT-framework that can be integrated into pre-existing IT-distribution systems. When implemented, FSM can function as an adapter and enable data exchange between different distribution systems.

The “no new measure” approach would allow to develop the full potential of the implementation of the Delegated Regulation (EU) 2017/1926 and of the Directive (EU) 2016/2370 and to evaluate their impact on the development of the integrated ticketing and payment services. On the other side, leaving to market forces within the current

\textsuperscript{171} E.g. Sweden Samtrafiken i Sverige AB; TSGA TAP TSI Services Governance Association; Belgian Mobility Card (BMC) SA; SNCF.
legal framework may results in an increased legal fragmentation across Member States and to an uneven development of integrated ticketing and payment service due to potential lack of incentives for private operators.

9.2. Non-binding EU initiative

9.2.1 Code of Conduct on data sharing

Another possible recommendation is that of a non-binding EU initiative which shall provide guidance to national authorities and stakeholders when accompanying the development of ticket distribution solutions and payment services.

Open markets, where the actors are subject to competition, are characterized by commercial agreements between various parties. This is true not only for access to data, but also for the creation of new products and services (including the bundling of existing ones). Under such conditions, the driving force should be to provide end customers with better products and services in accordance with demand. Inappropriate or intrusive regulation may stifle innovation and the commercial freedom of actors in a way that will not benefit the end customers.

The non-legislative initiative could cover a data sharing code of conduct. In particular, from the barriers evidenced by desk research and stakeholder consultation, the Code would provide guidance and clarification of travel dynamic data, as well as fare data access to third parties that want to develop integrated ticketing services.

The Code could be a self-standing EU initiative or accompany a framework EU legislative initiative.

The Code shall include the principles, i.e., reasonableness, fairness and non-discrimination, that the parties shall take into account when drafting commercially.

The principles shall be applicable to the agreement entered between the parties: identification, conditions of use (including the trademark), complaint management.

The agreement between all the parties shall include:

- a description of the agreement’s governance arrangements and internal control mechanisms, including administrative, risk management and accounting procedures, which demonstrates that those governance arrangements, control mechanisms and procedures are proportionate, appropriate, sound and adequate;
- a description of the procedure in place to monitor, handle and follow up on incidents and related customer complaints, including an incidents reporting mechanism; and
- a description of the process in place to file, monitor, track and restrict access to sensitive or personal data and to handle security incidents.

Contracting parties must agree upon who will charge passengers for travel chain tickets and reservations and the method for doing so, as well as how payments will be transferred or cleared between service providers. The contracting parties should also agree upon who will take care of crediting arrangements with the provider(s) of payment services and the method for doing so, and clarify any arrangements regarding compensation and payments in arrears between each other.

In order to avoid potential anticompetitive effects, as well as higher prices being charged to passengers, contractual arrangements should not include any price parity clause. Both the distributors/aggregators and the transport operator shall remain free to apply discounted prices, especially using promotions or fidelity programs.
9.2.2 Guidelines on data sharing, integrated ticketing and payment systems related to Public Service Obligations

Another possible issue that could be covered by non-binding EU initiative is the integration of PSO in integrated ticketing and payment services. It was highlighted that integration is sometimes impossible due to core differences among national operators and, in particular, due to the coexistence of commercial long distance transport operators, not funded by public authorities, and Public Service Obligation (PSO) operators funded by public authorities.

For PSO services, public authorities have the power to set the rules and define everything (including the price, which may differ significantly between Member States but also between regions within the same Member State). Where interoperable and integrated systems already exist, the technology of these systems is proprietary and cannot be accessed by other service providers. In our opinion, given the main characteristics of the PSOs contracts, and the essential rules laid down at EU level, PSOs should provide an opportunity, rather than a barrier. The decision of the competent authority on the organisation of the PSO also leaves space for the inclusion of more technical aspects, such as interoperability and data collection. According to some stakeholders, integrated ticketing and payment systems could be included in the selection procedure. In particular, the procedure to select the operator could lay out the conditions to provide integrated ticketing, including interoperability and data access, as part of the commercial offer.

This solution has been adopted by the Finnish Act on Transport, which has mandate the transport authority to evaluate compliance of the PSOs provider with the requirements on data access and interoperability when awarding a PSO contract.

The guidance provided by the awarding authority could eliminate issues of the third-party access to travel and fares data, in order to develop integrated ticketing solutions. Similarly, the obligation to provide customer assistance could be included in the service contract.

A transparent contract notice requiring that the transport provider comply with the terms of interoperability, including a possible clear separation between the compensation and the fare revenues, could allow for the development of integrated ticketing from both third parties or transport operators and public authorities.

9.2.3 Clarification of the applicability of competition rules to exchange of information, revenue sharing and abuse of dominant position

Exchanges of commercially sensitive information between competitors may adversely affect competition and infringe upon the EU antitrust rules. In that context the CMA acknowledged that transport ticketing schemes involve agreements that may have a harmful impact on competition. However, such agreements can also result in benefits that outweigh their negative impact on competition. The CMA, with the block exemption, has provided legal certainty to operators as to what was available under the UK competition rules. Similarly, individual exemption under the current Horizontal Agreements guidelines may be considered in cases of integrated ticketing, as such initiatives that could create benefits under Article 101(3) TFEU. It may be worth exploring the possibility of future revision of such Guidelines, for instance, adding guidelines as to how the exchange of information applies to multi-modal ticketing. This would help alleviate operators’ fears that, by collaborating, they may risk infringing Article 101(1) TFEU.

In the same way, a clarification of the CJEU case law applicable to refusal to supply and abuse of dominant position to integrated ticketing could provide operators with guidance.
The guidelines would provide clarification and guidance to all the involved stakeholders on how to proceed in the data sharing necessary to develop the integrated ticketing and payment system and/or include it in PSO contracts.

Guidelines have no legally binding force but which nevertheless may have practical effects and they may help ensure consistency in the approach used to develop integrated ticketing and payment schemes.

9.3. Legislative EU initiatives

A third recommendation is the adoption of specific EU legislative initiative on integrated ticketing and payment service. The absence of a common EU legislative framework on integrated ticketing and the wide variety of local and regional transport operators, each developing their own programme, leads to higher transaction costs for each part of the integrated ticketing transport chain.

The majority of the stakeholders consider EU legislative intervention necessary for multimodal transport data sharing and access, in order to foster integrated ticketing, especially at the cross-border level.

New rules should be established to close the identified gaps, in particular those concerning the conditions for access to fare data and the role of PSOs, while at the same time providing more legal clarity and ensuring consistent application of the legislative framework across the Union and address fragmentation.

As mentioned above, various national legislative initiatives on integrated ticketing have emerged, which evidence the need to regulate at least some aspects of the system, in particular the access to dynamic travel data. Uncoordinated national initiatives may result in inconsistent framework that could prevent a pan-European integrated ticketing market. In addition, there is the need to develop common standards for ticketing and distribution models.

The legislative initiative can take different forms, from the revision of existing legislative acts, or the adoption of a fully new legislative initiative. Below we have envisaged three options.

9.3.1. Revision of the Delegated Regulation (EU) 2017/1926 to include integrated ticketing and payment systems

The initiatives adopted in Finland and France in order to promote the integrated ticketing in the context of implementation of the Delegated Regulation (EU) 2017/1926, prove successful framework to develop further initiatives. In particular, the revision could include access to dynamic travel data as well as dynamic fare data.

The Regulation allows Member States to extend the accessibility and exchange of dynamic traffic and travel data. In case the Member State decides to implement the option, Article 5 provides for the standards to be used. It further provides that APIs shall be publicly accessible allowing users via NAP and end-users shall register to obtain access. Strengthening the access to dynamic data and interoperability would increase the amount and quality of data available to develop new distribution models.

- Mandatory access to dynamic fare data

In this context, the Regulation could be revised moving from optional access to dynamic data to a mandatory access for those dynamic data listed in the Annex and including dynamic fare data.

- Minimum standards for access points/interfaces

The current Regulation already provides for the compliance with certain existing standards for access points/interfaces to ensure interoperability. In order to develop
integrated ticketing, minimum standards should be included in order to grant interoperability of API/interfaces of the services providers, included payment systems.

- **Definition of third-party service provider – access to data for distribution purpose**

The legislative revision could introduce in the Delegated Regulation, the definition of third-party service provider of integrated ticketing. This shall be done with consideration of the fact that the Commission’s power to adopt delegated acts is subject to strict limits and hence with due regard to the limits (in terms of objectives, content, and scope) of the delegation granted in the ITS directive.

Without changing the essential elements of the law, the delegated act might introduce a definition that takes into account technological developments that have given rise to the emergence of a range of complementary services, such as digital wallets, mobile apps and smart ticketing.

On a first assessment basis this seems compliant with the objective of the legal basis (i.e. the ITS directive) that aims to encourage the development of innovative transport technologies to establish interoperable and efficient ITS services by introducing common EU standards and specifications.

These third party service providers should be granted access to the necessary data and interfaces to develop their services. The regulation should clarify that the access would be for distribution purposes and therefore, it should include the data re-use for commercial purposes.

9.3.2. **Revision of Regulation (EC) 80/2009 on CRS code of conduct**

The Computerised Reservation Systems, which act as technical intermediaries between the airlines and the travel agents and provide their subscribers with instantaneous information about the availability and fares of air transport services and permits travel agents to make immediate reservations on behalf of the consumer, should be extended to other transport modes. In that framework, the Commission should consider, in the review of Regulation (EC) 80/2009 on the CRS code of conduct to open it to other modes.

9.3.3. **A new legislative initiative on integrated ticketing**

Alternatively, a new legislative initiative could set forth a minimum set of essential data considered necessary to develop integrated ticketing and payment systems.

- **Identification and definition of essential data**

All the public and private providers of mobility services would be requested to open up essential data about their services in open APIs, which should be in machine readable format.

The type of essential data depends on the service type. Essential data can mean data about routes, stops, timetables, yielded prices and the availability and accessibility of services. This is in line with the CJEU case law, according to which essential data for the development of a secondary market should be make accessible at fair and reasonable conditions.

In this context, it would be appropriate to perform a market analysis in order to identify the existence of the secondary market for integrated ticketing and the minimum set of data to be made accessible.

A new legislative initiative would require a complex decisional process at EU level, including the choice of the most appropriate legislative instrument. While delivering responsive legislation and regulation has been raised as necessary by the stakeholders, it must be appropriately designed to avoid that the legislation will prevent future technological developments or becoming rapidly obsolete.
Access to data on fair and non-discriminatory conditions

A transport operator shall provide ticket distributors/aggregators with open access to the sales interface of their ticket, reservation or payment system. Access must be sufficiently extensive so that providers of mobility services and integrated mobility services can offer their services accessibly and effectively.

The access is not intended to be offered for free, but should be subject to reasonable and fair commercial conditions. Compensation for the data provided shall be introduced.

Refusal to provide access at fair and commercially reasonable conditions shall be justified. If a company has a dominant market position, unfoundedly discriminatory procedures and refusal to access may be against the competition law if the service provider has a dominant market position.

Account-based ticketing – PSD2

As mentioned above, the open access granted by the payment services Directive (PSD2) has contributed to the development of accounting based ticketing; therefore, it should be taken into account in new EU provisions directed at creating a legal framework for the integrated ticketing.

In particular, the standards for the interoperability which should be used by the service providers, should include the minimum standards already developed for payment systems under the Directive, in order to support the account based ticketing.

User’s rights

One area on which legislation should focus, according some stakeholders, is users’ rights. Users should have the right to buy tickets through aggregators and aggregators should therefore have the right the buy tickets on behalf of users.

In the stakeholders’ view the legislative initiative should recognize the right of users to decide which sale channels to use in order to buy tickets.

Definition and obligation of third party service provider

In this context, the legislative initiative could introduce the definition of third-party service provider of integrated ticketing. The definition should take into account technological developments that have given rise to the emergence of a range of complementary services, such as digital wallets, mobile apps and smart ticketing. These third party service providers should be granted access to the necessary data and interfaces to develop their services.

In order to avoid illegal data use or misappropriation, third parties that intend to provide integrated ticketing service providers should be required to register themselves to the competent national authorities. This would allow the competent authorities to assess whether the requirements set out in the relevant provisions are fulfilled and to ensure a homogenous interpretation of the rules throughout the internal market. In particular, a notification procedure should be provided in order to ensure compliance with the specific security and technical requirements.

For violations of the requirements, data misuse, data protection violation, the national authorities should be entitled to impose fines as well as deny access to data.

Technical regulation

It has been also noted that data must be openly available in a standard, integrated format, and in a European standard profile. If a European access point is not achievable, at least a European namespace and registrar function for IDs should be implemented.

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172 E.g. MaaS Global; Smart Ticketing Alliance.
making integration of data easier. Requirements for machine readable ticket/ID media with corresponding standardized description of travel rights should be implemented.

Legal requirements have been requested from stakeholders for the (free) opening up and access to Secure Storage (SE) on mobile phones, as well as for a fast access to data concerning the tickets stored in mobile phones.

In addition, the EU has been called on to set clear and European-wide rules on data security and disclosure, as well for the handling of data by public and private companies, and to continue its work on the standardisation of data formats requiring all companies to use that data format and define and make it clear what is considered as “quality” in data exchange so that every actor in the market can benefit from that.

- **Pricing**

Minimum obligations to provide access to fare data to third party service providers would not prevent the transport operators from selling tickets to end-users at lower prices, including discounts and fidelity program. In the same way, aggregators and distributors should be able to compete and offering discounts and promotions.

### 9.4 Conclusions

The recommendations range from no new measures to a new legislative initiative on integrated ticketing and payment service. Each recommendation has its own strength and weakness.

While most of the stakeholders seemed oriented towards a set of new legislative measures, some of them were in favour of a wait-and-see approach, mainly for the need to monitor the implementation of the Directive (EU) 2016/2370.

In our opinion, certain elements of the integrated ticketing, such as the dynamic fare access, can only be addressed by a legislative intervention, while other technological aspects can also be left to the market developments, where the best option will emerge.

In addition, in our opinion, guidelines for data sharing should be drafted to clarify the role of PSOs in integrated ticketing, data sharing, revenue sharing, and interoperable service interface accessibility.

As we have already mentioned, each option shall require a market analysis and an impact assessment.
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