

by FAIRTIQ

eFare – A pricing model that moves with the times

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What is an electronic fare (eFare)?

Many countries have already adopted an electronic fare model, or 'eFare', in some form or other. Regardless of the form they take, they all have one thing in common – simplicity. The fare tends to be based on the actual distance travelled and are calculated electronically, either according to the 'beeline' principle, i.e. based on the shortest distance between the

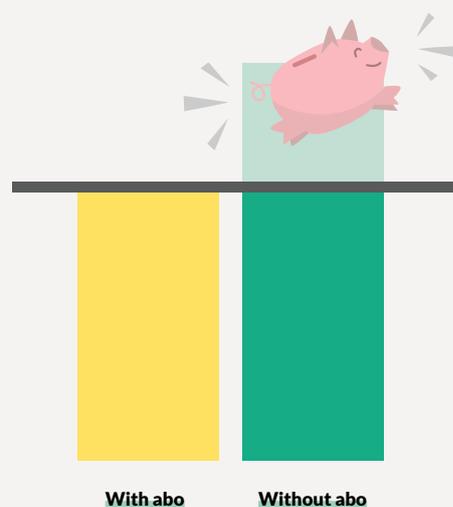
points of departure and arrival, or per kilometre, i.e. adding up the distances between each stop covered by the journey. No matter what pricing strategy is applied, eFares mean that public transport users no longer have to worry about working out the correct fare zone.



“eFares mean that public transport users no longer have to worry...”

As well as making data collection and analysis easy, eFares is highly compatible with a range of differentiated pricing strategies. For example, public transport providers can encourage users to avoid travelling during rush hour by introducing off-peak pricing, i.e. different fares depending on the time of day or weekday/weekend use. Washington, London and Stockholm are some of the major cities which have already adopted this solution.¹

eFares are also compatible with price capping, e.g. automatically charging travellers a maximum price if the total cost of their public transport use exceeds the cost of a daily/weekly/monthly travelcard. Another benefit is that the model is more socially equitable and fairer – regular transport users who cannot afford to pay for a season ticket in one go can still enjoy the same preferential fares as travelcard holders.



¹ Rhein-Main-Verkehrsverbund Servicegesellschaft mbH (rms GmbH) (2015), p. 35 ss.

There are also different ways to implement the eFare solution. The preferred technologies to date have been smartcards (e.g. in the Netherlands²) and smartphones. A direct comparison shows that the smartphone-based option is better financially because the public transport company does not have to invest in hardware and has no operational overheads. The German fare association VRR explored the smartcard option but decided against it due to the high estimated rollout costs (EUR 160 million).³

Can eFare keep pace with current trends?

Digitalisation has been transforming the economy and society for some time now. This trend accelerated significantly during the Covid-19 pandemic; remote electronic systems like sales and customer services have proven very valuable, if not essential, for most sectors of the economy during this public health crisis.⁴

There is also growing consumer demand for more flexible and personalised services, a trend that is reflected in the huge success of this type of business model in a number of sectors, most notably the entertainment industry. The popularity of streaming services, pioneered by Netflix, let customers watch films and series when and where they want, based on a month-to-month subscription. Likewise, the mobile telephone sector offers a range of flexible rates like the 'Fair Flat' formula from German operator Congstar – a subsidiary of Telekom Deutschland specialising in discount mobile phone services for young people – which combines a consumption-based pricing model with a flat-rate data plan. The personal mobility sector has also heeded these calls. Residents in many major cities are increasingly opting for shared mobility models that let them book a car, bike or scooter for a given journey and return the vehicle to a location of their choosing.

Several public transport companies have also responded to customer demands. The SWMS public transport network in the city of Münster, for example, introduced its FlexAbo back in 2012, as part of the roll-out of its new eFare. Holders of this flexible travelcard enjoy a monthly fare plan offering unlimited travel across the SWMS network from 8 am. Any journeys they make before this time are billed, but never more than a certain amount (fare capping).⁵

Another societal trend observed across many sectors, including among public transport operators, is the shortage of qualified labour. Digital solutions that reduce direct contact between the public and the train crew/bus and tram drivers or make it possible to serve customers remotely may help alleviate this problem while also lightening the workload of transport personnel.

² Rhein-Main-Verkehrsverbund Servicegesellschaft mbH (rms GmbH) (2015), p. 38

³ Rhein-Ruhr AöR. 2013. Machbarkeitsstudie Cico im VRR. Gelsenkirchen (2013), vu dans: Rhein-Main-Verkehrsverbund Servicegesellschaft mbH (rms GmbH) (2015), p. 38

⁴ Zukunftsinstitut.de; URL: <https://www.zukunftsinstitut.de/dossier/megatrends/> [dernière consultation: 30.06.2020]

⁵ Quast, Ferry (2012), p. 4

Is the eFare an answer to transport operators' problems?

Conventional zone-based fare models remain the norm and still make financial sense for public transport providers. However, they take a great deal of time and money to introduce and adapt. Another problem is that fares are regularly the subject of political debate, e.g. the '365 Euro ticket' and passenger regulations. As a result, changing existing fares or introducing new ones is an extremely complicated process.



Zone-based fares in use today came about because of the technical limitations of ticket machines in the late 1980s and early 1990s; to make the sales process easier, each zone had to have its own button. User interfaces today, including smartphone screens, can better accommodate a highly flexible selection of products. For consumers, the conventional fare systems used by public transport providers are far from user-friendly, and even confusing; the fare regulations of some German fare communities run to as many as 300 pages. Another problem with the zone-based fare system is the considerable fare jumps passengers experience when they travel beyond a zone boundary; it is a situation that many find unfair and frustrating. Last but not least, even when public transport operators want to reform their fare model, it tends to be a drawn-out process because the local authorities also want to have their say in the final decision.

eFares offer public transport providers a digital solution that is easy to implement at the technical level and makes it easier for them to understand their customers' mobility behaviour and adapt their offerings accordingly. The FAIRTIQ solution, for example, eschews complex fare models. The back-end of the mobile ticketing app is built on a set of parameters that include the baseline price (flat rate fare) and the per-kilometre price. However, the needs of the partner are finally crucial in terms of choosing the best pricing model.

Build customer loyalty with fares that better reflect their mobility needs



Innovative fare models that open the door to price differentiation



Differentiation by volume

smaller distance-based price increments; no sudden price jumps when moving from one fare zone to another



Differentiation by time of travel

different pricing depending on the time of day/peak and off-peak hours/weekday or weekend



Differentiation by type of service

e.g. special pricing for express services, i.e. that get users to their destination in less time than the regular service



Differentiation by quality of the service provision

e.g. a service that runs at very frequent intervals

eFares and price setting

eFares generally have two components: **the service rate (usually the per-kilometre price) and the baseline price. A set price can also be added.**⁶

The service rate is based on the distance covered. It makes it possible to introduce smaller price increments, thereby avoiding the considerable price jumps when moving from one fare zone to another that are a common feature of conventional public transport pricing systems. There are several ways to calculate the distance: per kilometre travelled, linear distance ('beeline'), or route-kilometre.

A baseline price must be paid for every journey. Each time users check in, they pay this flat-rate fare, which also has a predetermined period of validity that can vary in duration depending on the size of the fare zone and therefore have an influence on the baseline price, among others.

The set price is often charged together with the service rate. It is a fixed amount that is charged per journey and has a predetermined period of validity which remains the same regardless of the distance covered. This means that an economically reasonable minimum fare is charged even for short-hop journeys, for which the service rate would otherwise be very low.⁷ Some argue for the introduction of a baseline price (guaranteed minimum revenue per journey); others are against (potential of unplanned trips that can be tapped by short-distance routes). FAIRTIQ has experience with both approaches and can help its public transport partners implement them in line with their chosen strategy.

⁶ Rhein-Main-Verkehrsverbund Servicegesellschaft mbH (rms GmbH) (2015), p. 35 ss.

⁷ Rhein-Main-Verkehrsverbund Servicegesellschaft mbH (rms GmbH) (2015), p. 39



eFare development – Key points to bear in mind



Best practice: How does the FAIRTIQ eFare work?

The following section illustrates how FAIRTIQ can help public transport operators introduce an eFare solution alongside their existing fare zone pricing model.

1. Göttinger Verkehrsbetriebe (GöVB)

FAIRTIQ worked closely with the GöVB on its project to introduce an eFare across the city of Göttingen's public transport network. The model, which was launched in May 2019, has already been a great success with users. The original motivation behind this move was calls from the city authorities to introduce a special short-hop fare. Not only does the GöVB eFare satisfy this requirement, it has also helped to reduce on-board ticket sales and opened up opportunities to expand the company's digital ticketing services.

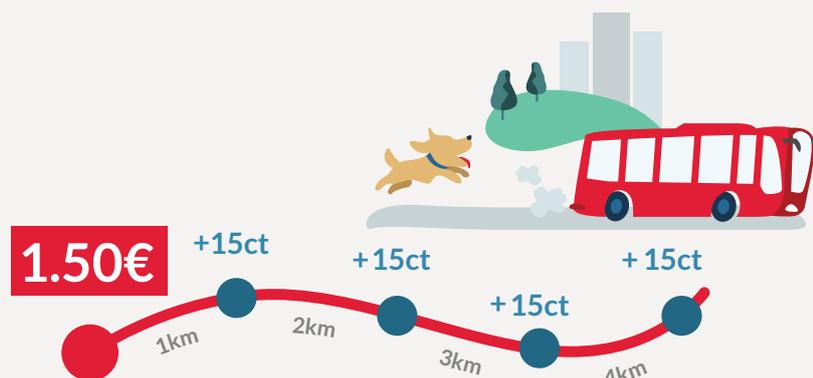
In terms of price setting, the city of Göttingen chose the following parameters: baseline price, per-kilometre price and daily fare capping.



⁸ Rhein-Main-Verkehrsverbund Servicegesellschaft mbH (rms GmbH) (2015), p. 39

2. Verkehrsverbund-Rhein-Sieg (VRS)

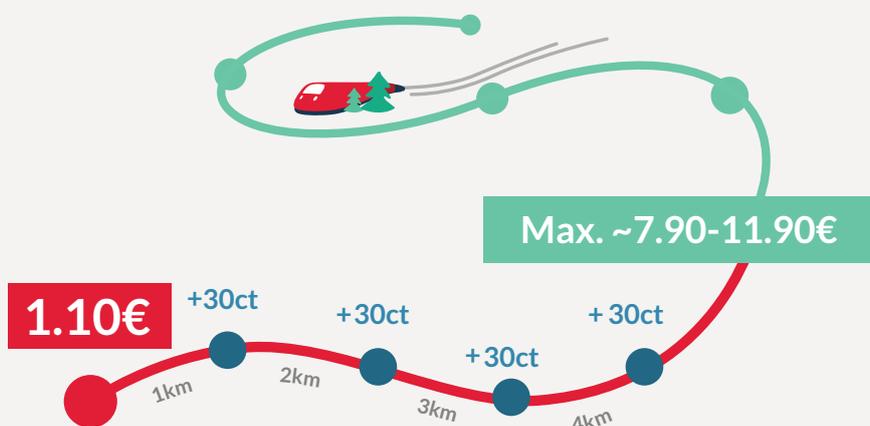
In April 2019 the German fare association VRS launched FAIRTIQ Lab app.⁹ This pilot trial, which has some 20,000 test users and is part of a larger digitalisation offensive mounted by the regional North Rhine-Westphalia public transport sector, has been extended twice and will now run until summer 2021. A survey conducted via the FAIRTIQ app found that 80% of respondents who had tested the new 'beeline' fare proposed by VRS considered it to be fairly priced. This fare is calculated based on the baseline price of EUR 1.50, plus 15 centimes for every kilometre covered. The daily fare is capped at EUR 15.



3. Münchner Verkehrsverbund (MVV)

Since late summer 2020, the city of Munich has been trialling a new eFare. The aim is to offer passengers flexible and innovative fare models that respond to changes in their public transport use as the result of the coronavirus pandemic. Up to 10,000 test users are taking part in the trial, which has been designed first and foremost with occasional users in mind.

MVV opted for the following price setting parameters (according to the quality of the offer at the selected points of departure and arrival): baseline price (EUR1.10/1.00), per-kilometre price (EUR 0.30/0.20) and a daily cap of between EUR 7.90 and 11.90 (depending on the distance covered).



⁹<https://fairtiq.com/de-ch/partner/unsere-produkte-fairtiq>

Does the eFare model have any drawbacks?

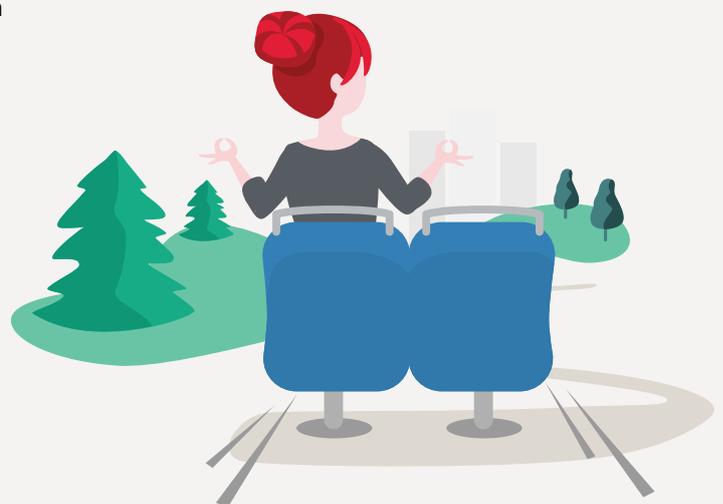
From a social and political standpoint, the smartphone-based solution raises an accessibility issue because individuals who do not have this type of device have no way of benefiting from the discounted and fairer eFare. This is not a problem with the smartcard solution; however, the disadvantage of this option are the higher implementation costs, which could ultimately make the eFare a less attractive proposition for public transport providers.

Conclusion: What gives eFare the edge over other fare models?

At the technical level, eFares are simple and quick to implement. They can be integrated in existing systems and free passengers from the hassle of understanding and absorbing different fare zones and pricing conditions. With the FAIRTIQ app, an eFare can be launched within a matter of weeks.

eFares do away with the price jumps typically found in conventional multi-zone fare models. Furthermore, each public transport provider can design its eFare model as it sees fit: it can for example choose to calculate the fare by linear distance ('beeline fare') or by adding up the distances between stops, while countering any possible negative effects on revenue by supplementing the model with other parameters like a flat-rate fare, per-kilometre price or price caps per day/per journey.

eFares can also be easily combined with discount and customer cards like the German BahnCard. Likewise, the model can be implemented alongside customer-friendly best price optimisation offers on a weekly or monthly basis, or a peak pricing strategy to better manage transport demand. Last but by no means least, eFares can be adapted at any time and without any major technical investment.



About FAIRTIQ

FAIRTIQ is an innovative Swiss start-up based in Bern. Its mission is to make it as easy as possible to use public transport. It has developed and operates a free ticketing app, which has since been rolled out across the entire public transport network in Switzerland and Liechtenstein, as well as in certain parts of Germany and Austria; it is compatible with iPhone and Android. With more than one million journeys per month (before the coronavirus crisis) and in excess of 14 million journeys since it launched, FAIRTIQ is the most successful check-in/check-out ticketing solution in the world. FAIRTIQ has forged partnerships with transport providers and fare associations in Switzerland, Germany, Austria and Liechtenstein. In addition, FAIRTIQ technology powers the ticketing apps of the Swiss Federal Railways (SBB) and Austrian Federal Railways (ÖBB).

How the FAIRTIQ app works

Before boarding the train, tram or bus, you open the FAIRTIQ app and swipe the 'Start' button to check in. The app generates a valid ticket for the entire public transport network in the region where you are travelling. Once you reach your stop, you check out by swiping the 'Stop' button. Using GPS technology, the app automatically works out the route taken and calculates the best possible fare for the journey. If a single journey is more than the price of a day pass, you will be charged the lower fare. Should you forget to check out, FAIRTIQ automatically sends you a reminder. This feature uses the motion sensors built in to your smartphone to detect whether you are walking or not.



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If you would like to read more about the FAIRTIQ ticketing solution, check out our [blog](#) and/or subscribe to our [business newsletter](#)!

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