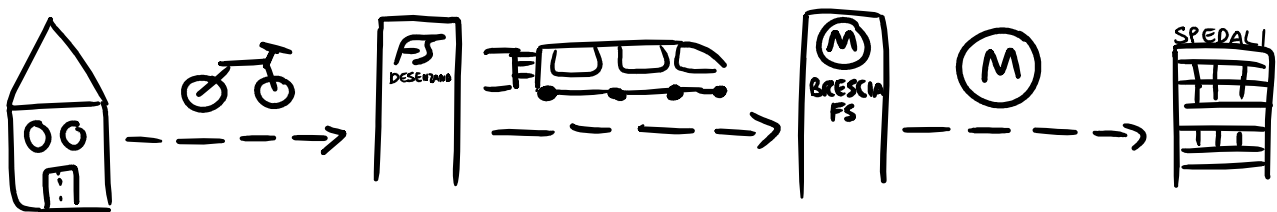


Nowadays, globalization is playing a central role in shaping our lives, including our workplaces, our family, and our future. In the last few years, society moved from disconnected, delocalized small towns and cities to centralized hubs with millions and millions of people. While this new living model brought several benefits to the economy, to tourism and to diversity, spurring growth and innovation in all sectors, it also created several drawbacks, including but not limited to the housing market and the public transportation system. This essay aims to outline an idea solving some issues for multimodal transportation, both for regular commuters and for travelers using public transit while visiting one or more cities.

The liberalization of public transport in the last decades, once mainly limited to state-owned or council-owned companies, revolutionized the landscape, and opened new business possibilities for private companies to operate in such an ambitious yet hardly lucrative market. From a consumer standpoint, however, this often translated into a chaotic mess of multiple transportation opportunities. Each business would release its own app with its own services, fare systems and payment methods, possibly adding to the confusion of users requiring multimodal transit solutions between different ways of transport.

In the last few years, businesses and applications such as Citymapper, Moovit or Google Maps focused on the retrieval on data from worldwide public and private transport businesses, creating centralized platforms in which users could visualize the various transit opportunities they had given any two points on the map and a time and date. Additional data such as real-time predictions, delays, and more were subsequently added to aid in the process. By building on what such solutions have accomplished, the idea would be to extend this centralization idea to the ticket purchasing part of the trip. An user visualizing the various solutions, once satisfied by his or her choice, would be able to directly purchase a combined ticket for the trip without the hassle of visiting retail locations for the tickets, or resorting to first and third-party offerings for the purchase.

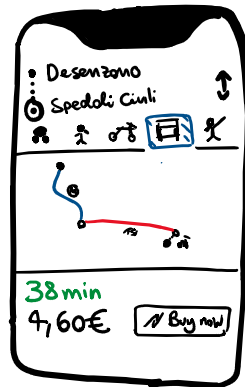
The targets of such a service would be two: the “*commuter*”, and the “*traveler*”. The “*commuter*” may be a nine-five worker with fixed schedules, who might need to use a bike (or a shared bike, for example), a train, and a



subway train to reach his workplace every day. By centralizing the subscriptions of the shared bike, the train and the subway, the burden on the end user is reduced, providing him with a single service managing all his public transport needs. Moreover, such a subscription could be refined to include only the typical journey made by the commuter, although this could be very disadvantageous from the profitability standpoint.

The other target customer would be the “*traveler*”. In this category a broad range of people may fit, including the family in their holidays to the white-collar worker in a business trip to a student in a leisure trip. This time, the focus would be on providing the end user a single ticket rather than a subscription. While a commuter typically knows by hand the map of the transit system he is using, a one-time traveler may encounter difficulties in doing so and might be more interested in safely arriving to his or her destination without encountering issues. Such a system could both provide him a way for buying a single ticket for the whole transit solution and subsequently guiding him throughout the trip, making the newly bought ticket(s) readily available within the interface for quick usage throughout the journey.

From a technical standpoint, the best way to devise such a service for profitability would be as a government-independent, third-party-independent layer that would interact with both applications and services (e.g. Citymapper, Google Maps, ... as listed above) and transport businesses. Firstly, the service could be offered as an add-on for the various applications, as simple as adding a “Buy now” button clearly visible to the user. Creating a new transport aggregation service from scratch would prove to be useless in such a saturated market.



For the transport part, agreements would need to be made with both big and small players in each market, as leaving out options would render the idea completely useless from the start, voiding user confidence and user retention, ultimately dooming the project. A very conservative and step-by-step is therefore required, by deploying the service in selected countries before moving to a global deployment. As a large portion of both public and private transit businesses already have agreements in place with third parties for ticketing at zero additional cost for the end user, addressing the “traveler” target customer’s needs would not be particularly difficult. However, convincing such businesses to also offer subscription-wise ticketing agreements might prove harder.

Finally, the profitability of this project depends on two main factors: user coverage, and user retention. Good word of mouth would be needed to cater to the different audiences, with substantial advertising being additionally needed in certain markets. Such markets include places with advanced transit integration whose inhabitants may find negligible to switch application of choice, such as Poland, Sweden, Trentino (Italy). User retention would be achieved by delaying price rises until a substantial user base is reached. In the public and private market, profits are often limited even for the big players. This is even more prevalent in markets where public transport is heavily funded by the government and local councils. In these situations, local transit agencies may operate on small margins and sometimes without even turning a profit or needing to. The most balanced, all-around approach would be to negotiate a small, percentage-based withholding for ticket sales and flat fares for subscription sales.

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This essay was inspired by Poland’s approach to multi-modal interoperability (available at <http://documents1.worldbank.org/curated/fr/564001469009916441/pdf/107014-WP-P148489-PUBLIC-Phase-2-Public-Transport-AFC-Interoperability-Final-Report-June-10-2016.pdf>) and a previous project made by me for the Human-Computer Interaction course in the Bachelor’s Degree at the University of Trento (available at <https://drive.google.com/file/d/1Q9g7ucijYKIG-qR3UXB8N2MOhOinP4Gg/view?usp=sharing>)