

Innovating for Increased Public Transport

Why system innovation is needed to double the market share of public transport



Doubling the market share of public transport by 2025 is an ambitious objective. It is however a must for many cities worldwide to avoid urban mobility chaos. We argue that the objective is realistic, but will not happen overnight and not by a single stakeholder. It will require joint and coordinated efforts by multiple parties in the public transport ecosystem – what we call “system innovation”. The players who understand and find their roles in this will thrive; they will be winners in a growing and changing value chain.

Executive summary

Doubling the market share of public transport by 2025 is an ambitious objective. It is however, clearly a must for many cities worldwide to avoid chaos in the urban mobility situation. It will happen and the question is who will be a winner and how to gain from this. Realizing a radical increase in public transport presents three key challenges:

- The challenge of increasing demand
- The challenge to secure sufficient capacity
- The challenge to ensure cost efficiency

These challenges can be overcome but probably not by one single stakeholder. It will require joint and coordinated efforts by key players in the public transport ecosystem – what we call “system innovation”.

“System innovation” is a way of creating a collaborative environment between multiple stakeholders with different agendas. The key is to see the joint business opportunities with current and new stakeholders that meet challenges more powerfully than each stakeholder can by themselves.

Now is a good time for players to take a system innovation leadership and take charge of one's own position in the future value chain and the growth of public transport market share. A reactive approach is not a winning strategy in the coming public transport race.

Increasing pressure on urban mobility

More than ever before, urbanization puts pressure on cities. Congestion is becoming a serious threat to city mobility, prosperity and economic growth. Without well-functioning public transport, the mobility situation will become unbearable, resulting in negative economic and social consequences that hamper economic growth. Congestion is a significant cost for society. In the US alone, congestion causes urban Americans to travel 4.8 billion hours more and to purchase an extra 1.9 billion gallons of fuel for a congestion cost of US\$ 101 billion.¹⁾

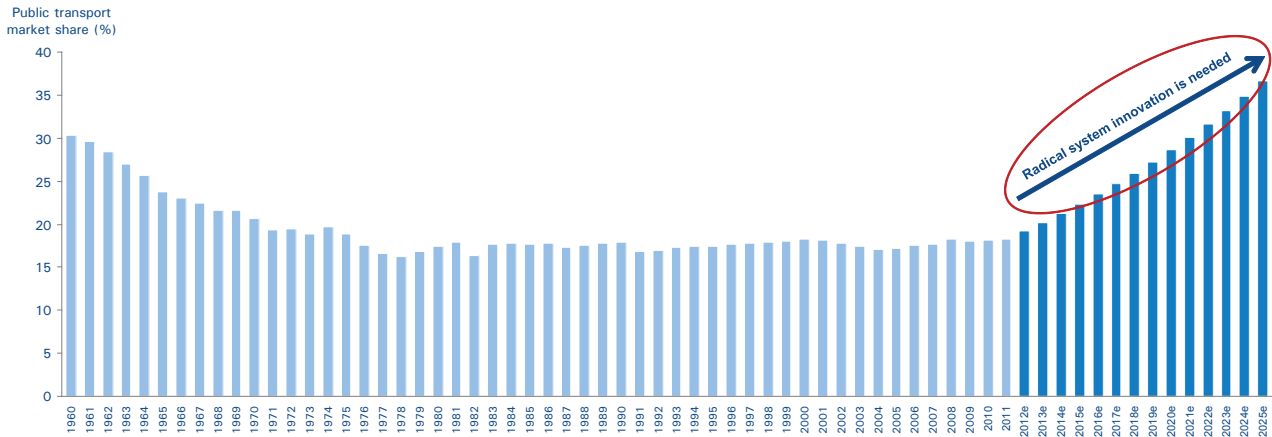
Many cities around the world have set concrete and ambitious targets in terms of increasing public transport, in many cases inspired by the “PTx2” objective set out by the International Association of Public Transport (UITP): To double the market share of public transport vis à vis the private car world-wide by 2025.

This paper reflects on what will be needed from stakeholders in the ecosystem including city authorities, public transport authorities (PTAs), public transport operators (PTOs), equipment manufacturers, ICT-suppliers, financial services, utilities, etc. to meet this crucial goal.

The challenge

In for instance Sweden, the market share of public transport vis à vis private cars was around 18 percent in 2006 (base year for the doubling target), meaning that the objective for 2025 is

Figure 1: Public transport market share in Sweden 1960 to 2025



Source: SCB, Svensk Kollektivtrafik, Vinnova – “Kollektivtrafikens marknadsutveckling – tendenser och samband”, Arthur D. Little analysis

36 percent. This market share has remained stable at around 20 percent for the past 50 years in Sweden, so the industry clearly needs to rethink current structures in order to realize its ambitious target.

In order to make this happen, the industry needs to succeed in three dimensions:

- Increasing demand
- Securing sufficient capacity
- Ensuring cost efficiency

Taking the bus and leaving the car behind

Motorists’ willingness to switch to public transport depends on the attractiveness of public transport vis à vis the private car, which in turn is decided by a combination of multiple service quality factors. Studies show that a majority of motorists have subjective barriers for not choosing public transport and thus could potentially be convinced to switch to public transport if the offer is clear and good enough (see figure 2).

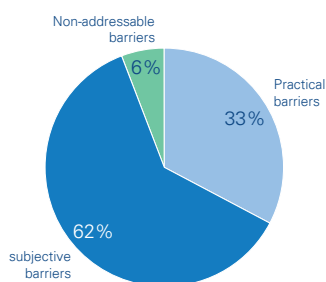
The most important factors that decide the attractiveness of public transport are:

- Short commuting time
- High frequency
- Good punctuality
- Few changes - seamless journeys
- Accurate and instant traffic information

Traffic congestion, both on rail and on the road is the key threat to all the above attractiveness factors. The cost of congestion is massive as it is estimated that traffic delays in developed countries represent a loss of € 500 billion per year based on comparing average speeds with those at 5.00 am. The cost of congestion in London alone is at least € 3.5 billion per annum. Cities have different ways of dealing with congestion including:

- Congestion charges (e.g. London, Singapore, Milan and Stockholm)
- Bus rapid transit (BRT) systems with dedicated public transport lanes (e.g. Jakarta, Quito, Ankara)
- Configuring the traffic system (e.g. Minneapolis)

Figure 2: Motorists’ reasons for not choosing public transport alternatives



- 6% of motorists have non-addressable barriers for choosing the car instead of public transport e.g.:
 - They need the car in their work
 - There are no public transport alternatives available
 - They are physically disabled
- One third of respondents indicate that practical barriers are stopping them from using public transport, e.g.:
 - They need to carry groceries or other things in their car
 - They need to take the children to various activities
- More than 60% of respondents have subjective

- barriers for not choosing public transport including:
- Convenience
 - Lack of knowledge of the public transport alternatives
 - Do not find public transport reliable or sufficiently rapid
 - Skepticism towards public transport in general

Source: Opinion poll performed in 2011 comprising 2 417 commuters in western Sweden, Arthur D. Little analysis

Figure 3: Congested private car lane vs. empty bus lane



Source: Arthur D. Little

Although, in terms of effect on congestion, isolated measures are generally not enough and most larger cities see congestion just getting worse.

Securing sufficient capacity

In addition to increasing the attractiveness of public transport, a doubling of public transport will only become reality if production capacity can cope with the growing demand while maintaining a sufficient quality level. We estimate that capacity needs to be increased by at least 150% in order for the market share of public transport to double by 2025. Given today's population size, demographic profile and degree of urbanization in a city, a doubling of the market share for public transport will require doubling the amount of produced traffic. Moreover, in densely populated areas, increased urbanization leads to longer average travel distances for commuters.

Ensuring cost efficiency

While increasing demand and production capacity for public transport, costs will need to go down at the same time. Tax payers are generally unwilling to spend too much on public transport in relation to other community services such as health care and education. Furthermore, the cost of producing public transport per vehicle kilometer is increasing at above inflation rates in most modern cities, leading to severe difficulties in financing a doubling of public transport with a balanced budget.

A doubling of the market share for public transport in Sweden vis à vis the private car would increase annual public spending by SEK 35 billion. Financing this investment through taxes only would be equivalent to an increase of 1.1 percentage points, a difficult measure politically.

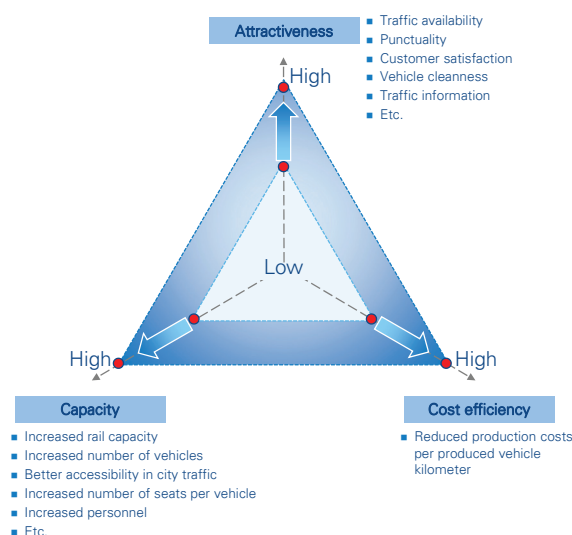
Public actors could alternatively explore innovative financing strategies such as public-private partnerships, a broader congestion charge scheme and optimized revenues from advertising spaces.

What the industry needs to do

The journey of doubling the market share for public transport in cities around the world will create significant competitive advantages for successful cities as well as transport providers. This journey will however not happen by itself and not by the effort of a single player in the value chain. It will require joint and coordinated efforts by multiple parties in the public transport ecosystem – we call it “system innovation”.

“System innovation” is a way of creating a collaborative environment between multiple stakeholders with different agendas. The key to this is to see how stakeholders can integrate innovation to increase “the size of the pie.” System innovation is a prerequisite for successful development of the industry and generally speaking, most players are far from where they need to be in this respect.

Figure 4: Increasing “the size of the pie”



Source: Arthur D. Little

Making system innovation happen

Successful system innovation depends on collaboration, partnerships and calculated risk-taking along the value chain that usually shifts the power balance within segments and between different players of the value chain. This calls for pro-activity, dedication and open communication between players. Otherwise the risk of a “waiting game” is imminent where stakeholders hold their positions and wait for someone else to take the first step.

Now is a good time for players to take a system innovation leadership approach and take charge of their position in the future value chain and the growth of public transport market share. Early movers will take market shares in high growth segments.

Examples of system innovation unfolding:

Norway:

- NSB in Norway recently worked closely together with the National Rail Administration to co-invest in more railway tracks to Oslo central station making it more convenient for passengers to change between different modes of transport

Lisbon:

- Lisbon bus operator Carris partnered with Portugal Telecom and launched a number of on-board initiatives to influence passengers' travel time perception, such as free Wi-Fi internet on selected routes. Thanks to the increased number of passengers, the return on investment from domestic visibility alone was around €100,000 in the first two months of operation

Budapest:

- The Budapest Transport Association has been established through the cooperation of the Budapest Transport Company, the Hungarian Railways and regional bus carriers. The aim is to integrate public transport services and lure back commuters to using public transport. Initiatives include introduction of a unified electronic ticketing system, a fully integrated timetable and passenger information system, more visible marketing and intermodal transport hubs

Wroclaw:

- Through partnerships and a common agenda, Wroclaw aims to create an attractive and seamless public transport system in the city with the use of integrated tickets in the linked transport system, central hubs and connected schedules

Implications for stakeholders

Thanks to political will and fundamental city mobility needs of overcrowded cities, the public transport industry will present significant growth opportunities going forward. The opportunities will be particularly rewarding for the most innovative and proactive stakeholders and successful players can harvest the fruits in the form of increased market shares in a growing market.

Insufficient actions from players to take leadership in this situation will result in other and new players taking charge and thereby shifting the competitive landscape to their advantage. The same end game can be anticipated if stakeholders have too narrow views of their own role in the public transport ecosystem.

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