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The Fast Transit on Request (FTR) vision is enticing: a very comfortable bus bringing each passenger rapidly, directly and comfortably to their destination - no annoying waiting and transferring necessary! Unfortunately, the concept has the following problems when viewed holistically.

1. Passenger Behavior

FTR requires passengers to reserve their journeys in advance and is therefore a “closed system” like air transport. In a standard public transport system passengers can begin their journeys when they want, interrupt them spontaneously and/or change their route during the trip. When public transport schedules are frequent and regular, and if service operates punctually, adjusting one’s activities to the public transport schedule is not a problem. In contrast, being captive to a reservation is annoying and makes the system more difficult to use.

Schedule freedom is central to public transport and attempts to force passengers to make reservations, such as Deutsch Bahn’s PEP ticketing scheme (2003), have so far failed. Rather than increasing obstacles to using public transport, modern marketing seeks to reduce obstacles, even to the extent of fully automating the ticket acquisition process.

2. System Integration

The trips on a link consist of innumerable origin-destination pairs; pure point-to-point travel normally constitutes only a small part of total demand, which makes it almost impossible to create a public transport system that provides direct service for all trips. Therefore, it is likely that the proposed FTR system will need to concentrate on selected connections, meaning that many passengers would still make connections to other public transport services.

The lack of direct connections creates two main problems. First, in addition to making a reservation for the FTR journey, passengers must plan their access trip to the FTR system

including schedule, fares and ticketing. Second, since there would be numerous interchange points between FTR and public transport, the FTR routing would need to be planned so that each passenger can transfer to their connecting transport as quickly as possible. Thus the FTR schedule would be based on arriving on time for departures of connections at the FTR stations rather than being based on the passenger's desired schedule, and therefore even with the FTR system passengers would need to follow the schedule!

On very high demand point-to-point relationships where direct FTR service could be operated this disadvantage is reduced. However, these are exactly the markets where demand is high enough for very frequent intercity rail service. Most passengers feel that a regular half-hourly service on these routes is quite practical although service could easily be operated more frequently if needed. Therefore, even an optimal FTR would not make waiting periods substantially shorter than the alternatives.

3. Capacity

The paper uses a 3-minute rail headway in its capacity comparisons between metropolitan railways and BRT, but this is hardly state of the art! Intercity rail systems currently operate at headways of 2-minutes and metro systems at even lower headways. Operating a 1200-passenger metro train on a 2-minute headway leads to a capacity of 36,000 passengers per hour and direction.

A modern rail system is always more efficient than a bus system in serving high demand corridors. Furthermore, serving even medium demand with the FTR system would require a huge number of buses and drivers to provide frequent direct service from many destinations to many destinations. Finally, since the FTR bus occupancy depends on the random travel desires of many different people, the average bus utilization will be lower than for standard public transport systems.

4. Political Feasibility

Roadways that allow buses to travel at 180 km/h require very large radii curves similar to a motorway or high speed railway and must be built to exacting standards. This means expensive and complex structures with large visual impacts even in relatively flat landscapes. The political acceptance of a new very expensive and visible transport infrastructure is highly questionable in most European countries today.

5. Speed

The FTR buses would operate at about half the speed of modern high speed rail trains (350 km/h) and it is extremely unlikely that buses in commercial operations could ever reach speeds similar to rail. Current market data shows that high speed rail is competitive with air travel for journeys of approximately 4 hours, corresponding to distances of 600 to 800 km. The competitive distance of FTR is likely to be approximately 300 to 400 km due to its lower maximum speed and strategy of taking passengers directly from origins to destinations. Thus

the question arises whether the market above this boundary would be left to air travel or whether high speed rail would be built in addition to FTR to serve the longer distances. Neither approach makes sense.

6. Infrastructure

Central Europe is already covered by a dense network of different transport systems, including high speed motorways and rail lines. There are almost no major city to city routes without both high-quality road and rail connections. Building a new motorway specifically for the FTR would create a third parallel infrastructure. Since this would be used exclusively by the FTR buses, it would be difficult to operate at capacity and be economically viable. Furthermore, the FTR would reduce demand on the parallel lines and hurt their finances. Inevitably, the economics of the overall transport system would be worsened.

7. Summary

The FTR system focuses on improving public transport temporal availability and travel speed. This is bought with substantial system disadvantages:

1. Passengers must book their journey in advance; travel flexibility is significantly limited.
2. FTR is not suitable as general replacement for the line haul services and it cannot be easily integrated into the existing public transport network.
3. FTR could only achieve the necessary capacity with very high production costs.
4. The exclusive FTR motorway is large, complex, expensive, and has huge visual impacts on the landscape; it is almost certainly politically infeasible.
5. FTR is too slow to serve as an alternative to high-speed rail in all markets.
6. FTR would add a very expensive new transport infrastructure between cities and would thus worsen the overall transport economics.

Therefore, while the goal of FTR is visionary, from the perspective of practical transport operations and network considerations, there is little recognizable market for the FTR concept in Europe.

