niches

New Seamless Mobility Services

Call-a-bus Services

Policy notes

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SIXTH FRAMEWORK PROGRAMME

What is it about?

Characteristics

Call-a-bus Services are:

- demand responsive transport (DRT) schemes in public transport that adapt their itinerary and timetable to suit a particular transport demand;
- reserved by the users in advance via phone, offering pick-up at home (or close to it);
- particularly suitable for medium to low density areas and times of weak demand;
- already existing in a wide range of service designs.

The concept is well transferable all over Europe, if tailored to the national and local context.

Key benefits

The implementation of Call-a-bus Services…

- improves accessibility to the public transport system in areas or times where conventional services cannot do this in a satisfactory way;
- tackles social exclusion of people that do not have access to a car;
- offers potential for cost reductions when replacing conventional services in areas or times of low demand.

"Our MultiBus": Call-a-bus scheme with high acceptance

Photo: HHS Ingenieur GmbH, Aachen

Example: MultiBus (Germany)

The MultiBus service operates on demand with modern minibuses in an area with approximately 30,000 inhabitants in the district of Heinsberg, which is characterised by a disperse settlement structure. It replaced traditional line-bound bus services and provides a higher service quality while offering cost benefits.

Despite difficult regulatory and legal framework conditions, the MultiBus is operating as Call-a-bus Service that provides (nearly) door-to-door service. Pick-up points are located very close to the users' homes. Customers order the service at least half an hour prior to the trip via a call centre.

The high quality minibus takes the travellers to any destination within the service area and also connects to the main public transport network.

"Our demand-responsive MultiBus scheme enabled us to improve the mobility services in a rural area very efficiently. It is a key product that helps to make public transport more convenient and better accessible to our customers."

Udo Winkens
Head of transport operations
WestEnergie und Verkehr GmbH & Co. KG, Erkelenz (Germany)

Is this something for us?

Call-a-bus Services are suitable for a wide range of conditions and are applicable all over Europe.

Key conditions for implementation are:

- The use in areas and times of low demand, where traditional public transport cannot be operated in a cost-efficient way;
- The availability of public co-funding for flexible transport services;
- A suitable legal and regulatory framework to finance and operate DRT services;
- A cooperative stakeholder arena that enables the introduction of this transport innovation.

How MultiBus works:

1.
Free call-to-order service at least 30 minutes before pick-up

2.
Confirmation of pick-up time by call centre agent

3.
Pick-up very close to home and transport to desired destination in service area

Photo: HHS Ingenieur GmbH, Aachen

Check list

City size	• Suitable for a wide range of settlement structures; • Focus on medium to low density areas.
Costs	Potential to reach cost benefits when replacing traditional public transport services in areas and times of low demand; e.g. the national Swiss PubliCar scheme showed cost efficiency to be increased by 5 % when replacing conventional bus lines with less than 8 passengers or a cost recovery <20%.
Implementation time	*Short term (<2 years).*
Stakeholders involved	• For implementation: Public transport operators, expert consultants, providers of disposition systems, taxi companies; • For (political) support and funding: Public authorities at different levels.

Benefits & Costs

Benefits

Call-a-bus Services include a range of potential benefits:

- **Increased accessibility and tackling of social exclusion.** Provision of access to the public transport system in areas or times where conventional services cannot do this in a satisfactory and cost-efficient way. The well established and accepted Swiss PubliCar service for example, which is available in different regions of the country, serves many areas that are characterised by small settlements in disperse locations.
- **Cost reductions** when replacing line-bound services that operate with larger units in areas or times of low demand.
- **Increase in user numbers through higher customer satisfaction.** Users appreciate the flexible and convenient door-to-door transport.
- **Reduced need for a private** (or second family) **car**.
- **Filling a gap between the private car and conventional mass public transport**, which is particularly important in suburban and rural areas. Call-a-bus Services extend the mobility options for users and increase the quality of public transport. Connected to the main public transport lines, they strengthen the whole public transport network and improve regional accessibility. Call-a-bus Services can become an important element of sustainable urban and rural transport systems.

Increasing cost-efficiency

MultiBus operates with 4 low-floor minibuses. The cost per year is approximately 400,000 €. The cost advantage compared to the replaced traditional bus service is approximately 40,000 € per year.

Still, the fares are kept on the level of normal bus line services, which was a political decision. It is planned now to introduce a supplementary charge and to combine a parcel delivery service with the passenger transport to further increase cost-efficiency.

Costs

In many cases it could be demonstrated that demand responsive services can be operated slightly more **cost-efficiently** than traditional public transport with only low usage.

Like other forms of public transport, call-a-bus schemes **need public co-funding** and are not financially self-sustainable.

Their cost depends on **local requirements and the technical approach chosen** (e.g. computerised disposition system vs. manual disposition).

Principal cost factors to consider when implementing a call-a-bus scheme are:

- **Capital cost**: Vehicles, disposition system and call centre equipment, office equipment.
- **Operating cost**: Drivers' and call centre employees' wages (shared call centre can contribute to lower them), maintenance, fuel, insurances.
- **Administrative cost**: Marketing campaigns, wages of administrative staff.

Users & Stakeholders

Users and target groups

Call-a-bus Services are suitable to address a wide range of potential users.

Population of low density areas: Target groups are particularly public transport customers that live in suburban or rural areas - locations with low demand that cannot be efficiently served by line bound services. Users expect a better service quality in such areas and usually show higher customer satisfaction after a flexible service has been introduced (see practical example on the right).

Users in times of weak demand: Travellers in times of low demand (e.g. evening and night services) in urban and rural areas can also be served by Call-a-bus Services. PubliCar for example operates a number of services for this target group in several Swiss regions.

User characteristics and trip purposes: A target group survey before the start of the German MultiBus service showed that the core user groups would be children, teenagers, families and seniors. The PubliCar case showed that the main users are female (75%) and between 26 and 62 years old. The main trip purposes of the Swiss PubliCar service are leisure activities (38%), commuting (27%), visits to doctors and hospitals (16%), and shopping (13%).

High customer satisfaction and increased ridership

The MultiBus, which replaced a line bound service, could gain 30% more users and is particularly prominent among seniors, families, teenagers and children. It reaches a high user satisfaction.

In the preparation phase, a thorough analysis of the market for the new service was undertaken, which enabled to tailor the service design to potential user groups.

DrinBus Genoa
Photo: AMT/AMI, Genoa

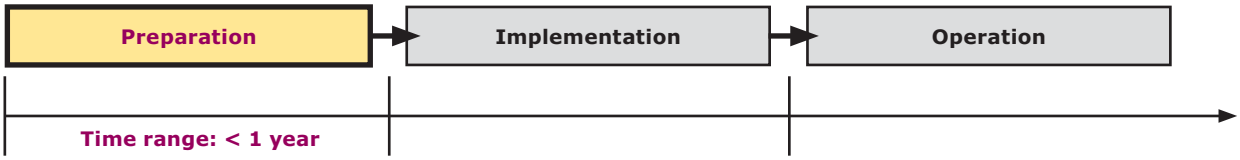
Key stakeholders for implementation

The implementation of a Call-a-bus Service needs a cooperative arena, which involves the following key stakeholders:

- **Public transport operators**: Main responsibility for the introduction and operation of call-a-bus schemes as substitute or complementary to traditional public transport.
- **Local and regional authorities**: Provision of political support and funding. Option to open tendering processes to flexible public transport services.
- **Higher level authorities**: Provision of political support and funding. They may have a role in setting a suitable legal and regulatory framework, or in granting exemptions.
- **Providers of disposition technology**: Facilitate technology and organisational schemes for flexible transport.
- **Taxi companies**: Potential partners in running call-a-bus schemes (also to avoid conflicts when introducing flexible public transport services that might be seen as competitive services).
- **Expert consultants and research institutions**: May assist with the implementation and evaluation (as in the case of MultiBus).

From concept to reality

Preparation



The implementation of a call-a-bus scheme is a complex but manageable task. It requires good preparation. Experiences from existing schemes give hints on some aspects that seem to be crucial in this phase.

Key aspects at this stage

Identification of areas where call-a-bus schemes show their competitive edge: Call-a-bus Services can substitute inefficient traditional public transport in areas or times of low demand, or be an additional element to fill gaps in the public transport network. A systematic analysis of the cost coverage and user numbers of existing bus lines in areas and times of weak demand can help to identify areas where call-a-bus schemes show a competitive edge in terms of cost and service quality. To design a locally tailored scheme it is also crucial to analyse the market of potential users in advance.

Check of legal and regulatory framework & funding conditions: The legal and regulatory framework, and the – often related – funding conditions, are decisive for the layout of the service (e.g. possibility of door-to-door service) and for receiving the necessary public co-funding.

In many countries it is no problem to operate flexible public transport services. In others (e.g. Germany, UK), legal and licensing issues may be barriers for the implementation of these services.

Demand responsive services frequently do not fit licensing regimes and funding structures that have been designed for traditional line-bound public transport. However, there are often ways around these problems. The German MultiBus for example was designed to run as a “flexible line-bound service” (flexible bus stops near the customers’ homes) to qualify for public co-funding, which was designed for traditional public transport services. The legal obstacles for Call-a-bus Services need to be well analysed when preparing the implementation.

Building a cooperative arena: The implementation of call-a-bus schemes relies on the cooperation of a wide range of stakeholders on different levels, e.g. operators, local decision makers and administrations, traffic commissioners and users. This is particularly important where licensing and funding issues need to be resolved. Also higher level authorities that deal with these issues need to be involved at an early stage. In many cases it can be recommended to link up with local taxi operators to avoid that they consider the call-a-bus scheme as competition and lobby against them.

Choosing the right service design: Call-a-bus schemes need to be well planned within the available budget and the given legal and regulatory framework. There is a wide range of options for service design, which is relevant for the cost and quality of the service. Finding the right approach needs to build on a good knowledge of the area served and the expected demand and user groups.

This determines for example the service route concept. It also needs to be analysed if a manual disposition of the vehicles can be used, or if a more costly computerised disposition system is needed. The set up of a call centre, e.g. potential for the joint use with other services to reduce costs, needs to be well examined. External expertise from specialised consultants may be helpful to choose the right approach.

Determination of the business model and responsibilities: Finally, there also has to be a decision on which business model to use for running a call-a-bus scheme. There is a wide range of options: operation by a public enterprise, tendering to a private company, cooperation with taxi operators that run the service as a franchise business, and others. Relevant stakeholders should be involved in this decision process in order to avoid conflicts and to find the most suitable solution.

A "cooperative arena" as success factor for MultiBus

The realisation of the German MultiBus service was an innovative undertaking which needed to overcome many barriers (e.g. difficult legal and regulatory framework).

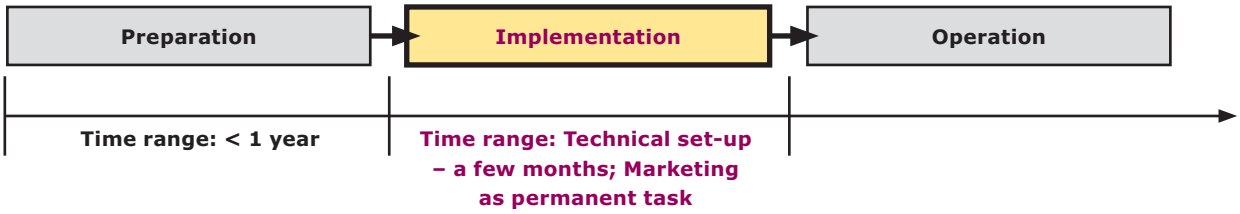
A good cooperation between the local authorities, the regional public transport operator and a consultant that was coordinating the service development was crucial for the successful preparation of the service implementation. A research institute accompanied the process with analyses on potential users, the market and economic issues.

The district government (Bezirksregierung) as authorising body for licensing issues was also co-operative when working out the right licensing conditions for MultiBus.

Ready for implementation?	✓
Suitable legal and regulatory framework conditions	
Public co-funding available	
Relevant stakeholders involved in preparation and decision process	
Market analysed	
Suitable service design options evaluated	
Suitable business models evaluated	

Photos: © Team VK, Heinsberg Project coordination, HHS Ingenieur GmbH, Aachen

Implementation



The implementation phase includes the technical set up of the service and accompanying measures (e.g. marketing), which are equally important.

Key aspects at this stage

Disposition system and call centre set-up: The service design determines the set-up of the disposition system and the call centre. This can be a major cost factor.
It is favourable if call centres can be used for multiple purposes and cover different call-a-bus areas. At the same time it is necessary to provide sufficient capacity to handle incoming requests from customers efficiently and with high service quality.
A range of mature disposition technologies is available. In cases of low demand, it may also be considered to operate a manual disposition system (e.g. tested in the Yellow Taxibus scheme, Scotland).

Integration with existing public transport services: The integration of Call-a-bus Services with existing public transport services is crucial to provide a high service quality for the customers.
The provision of well-timed connections to the main network is a challenging task which puts high demands on the planning and disposition of Call-a-bus Services.

Marketing is a crucial element in successfully implementing innovative services such as flexible call-a-bus schemes. Positive media coverage, a good image of the operator that runs the service, public information and word-of-mouth advertising do not only help to make the service known to potential users, but also to increase its acceptance. Free tickets as incentives to use the service for a first time can help to lower entry barriers as well. The message should be that Call-a-bus Services are a new, easy and comfortable transport service, which complements existing public transport systems in a particularly favourable way and are no “second class” services.

Political support and the involvement of “local champions” in the implementation phase can help to reach a wide and positive media coverage, which is crucial to make the service known and to increase acceptance among users.

Social marketing to reach the users

The MultiBus implementation was accompanied by the innovative instrument of social marketing, trying to reach potential users by appealing to their emotions and values.

This included the identification of potential customers and a marketing campaign that aimed to change the mobility behaviour in the long run.

Service implementation was also promoted using concepts of event marketing, e.g. kick-off events, special tours or appearances at soccer games.

Photo: Swiss PostBus Ltd/ D.Brueschweiler

Communication with users: Call-a-bus Services need to be well explained to new users. Frequently there are unrealistic expectations of what a call-a-bus scheme can offer. It is not a taxi, but it can provide a high quality service to the costumer. Many users have a problem in fully understanding that the service is only operating when ordered in advance. This needs to be clearly communicated.

Possible introduction of a new fare: Many existing Call-a-bus Services require that the user pays an extra service charge on top of the normal public transport fare. This is justified by the higher quality of flexible transport services and in most cases accepted by the users. In other cases it has been a political decision to charge only the normal fares. If a new fare structure is introduced, it needs to be easy to understand and well communicated to the users.

Integration with overall transport policy: To increase the overall impact of a Call-a-bus Service, it is needed to integrate it within the overall transport policy. “Carrots” as an increased quality of the public transport system in general, and “sticks” as access restrictions or parking fees can help to enhance the use of public transport services.
The implementation of the service should carefully consider such links and exploit potential synergy effects.

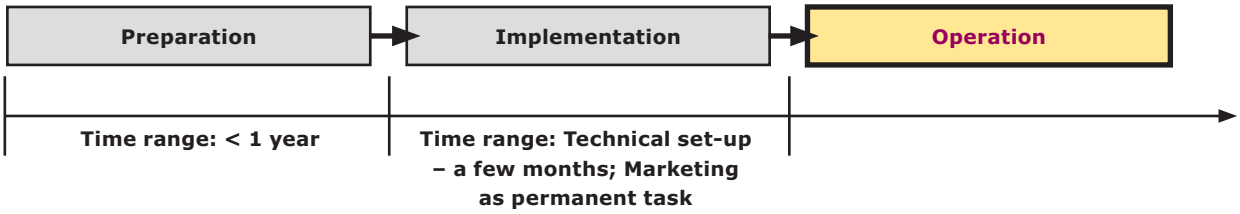
Communication and/or cooperation with taxi companies: In many cases taxi companies see the introduction of Call-a-bus Services as threat to their business and lobby against it. To avoid such conflicts, the implementation of a flexible bus scheme needs to be well communicated to taxi operators.
In many cases taxi companies have been subcontracted to run a call-a-bus scheme, which led to a cooperative environment.

PubliCar, Switzerland

PubliCar is a fully flexible demand responsive door-to-door minibus service in Switzerland which can be booked via call centres. It was developed by the public transport operator Swiss PostBus. The scheme is seen as complementing or as alternative to traditional public transport. It does not only offer flexible public transport for low density areas, but also for small towns or during times of weak demand, e.g. as night service. In many cases, PubliCar provides connections to the main public transport network. The service started in 1995 as pilot project. It proved to be very successful and was continuously expanded to 32 areas nationwide.

PubliCar uses modern disposition technology and bundles incoming reservation calls in two centralised call centres for German-speaking and French-speaking customers. This allows for a relatively efficient handling of phone calls and disposition. The call centres can be used for additional multiple purposes, which can even enhance cost efficiency.

Operation



Call-a-bus Services that have been well introduced have become a normal element of the public transport system in many places. In the long term, existing schemes need to be amended according to changes in the market and context conditions.

Key aspects at this stage

User side dynamics: Different barriers from the user side in the operational phase have been mentioned by practitioners. Operators cannot always guarantee the transport, as capacity is limited or call centre lines may be busy, which is negatively perceived by customers. Service operators must provide sufficient capacities to avoid such problems. The timely connection to the main public transport network is of particular importance to the users. This requires a well planned operation and disposition of Call-a-bus Services.

Analysis of demand and ongoing marketing activities: The demand for transport services and user needs are constantly changing. It is important to observe such developments and to amend an established call-a-bus scheme accordingly (e.g. expanding the capacity of the call centre, changing service areas). Marketing activities are crucial not only in the introductory phase of a Call-a-bus Service, but also as ongoing task to stabilise or increase user numbers.

Cost control and securing of funding: Public co-funding is and will be essential to the operation of call-a-bus schemes. The understanding of a high quality service that is worth the public spending is important in this context. It can be considered a crucial task to lobby decision makers for sufficient public co-funding for demand responsive transport services, which are frequently not treated equally to conventional public transport services.

Enhancing integration with existing transport services: Working on a good integration with other transport modes is crucial to strengthen the potential of Call-a-bus Services in the long run. This is still challenging, but ITS solutions offer opportunities to enhance this field.

Yellow Taxibus, Scotland (test phase ended in 2005)

Yellow Taxibus started in 2003 as a fully commercial call-a-bus scheme. It was operated by the company Stagecoach and was targeted at the inhabitants of 3 residential estates in Dunfermline. The area served was “Edinburgh overspill” housing. Yellow Taxibus mainly served for interurban trips to and from Edinburgh (approximately 40 min drive).

Despite the good acceptance among the users, the service was discontinued in November 2005. Only 50% of the total cost of the Yellow Taxibus service could be covered by the revenues. Although the “experiment” Yellow Taxibus failed, it can provide important insights as it underlines that ongoing public co-funding seems necessary to operate Call-a-bus Services.

Further information & contacts

Further information

MultiBus scheme, Germany,
www.hhs-online.com (see Projekte/MultiBus) (German)
Complete final project report:
www.hhs-online.com/content/multibus.htm

Project reports from the Wuppertal Institute,
which did preparatory and accompanying research.
www.wupperinst.org/de/projekte/projektdetails/index.html?&projekt_id=48&bid=43&searchart=projekt_uebersicht
(German)

PubliCar scheme, Switzerland
Basic information on the successful Swiss call-a-bus service.
www.postauto.ch/de/pag_publicar_angebot
(German, French, Italian)

Demand responsive transport in Genoa, Italy
Innovative services operated by the AMI - Azienda Mobilità e Infrastrutture S.p.A., Genoa, Italy.
www.amt.genova.it/orari/drin_bus.asp (Italian)

Connect – Research database on DRT
CONNECT is an EU project on demand responsive transport (DRT), which developed a database that provides a good overview on flexible transport schemes.
http://projectapps.vtt.fi/Connect/portal/alias__Rainbow/lang__en/tabID__1/DesktopDefault.aspx (English)

Good Practice Guide, UK
Guide for Demand Responsive Transport Services using Telematics. University of Newcastle upon Tyne. Transport Operations Research Group.
www.ceg.ncl.ac.uk/info/pdf/goodpracticeguide.pdf (English)

NICHES - further documents with more details
Reports on the state of the art, analysis of success factors and barriers for implementation, transferability potential and integrated strategies are available on the NICHES websites (English):
www.niches-transport.org
www.osmose-os.org

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