Keys to car-sharing

Introduction

All European cities share the same problem: an increasing number of cars consuming more and more urban space.

But there is a solution. Car-sharing is practical and innovative and can benefit whole cities and individual citizens at the same time.

Initially, car-sharing may look strange: how can the offer of easy access to a car lead to less use? Is it a kind of transport methadone programme to cure our ‘addiction’ to cars?

In fact, the experiences of many towns and cities over the last 15 years demonstrate very clearly that car-sharing provides people with more independence from cars. Car-sharing is an easy, cost-efficient and reliable service which has developed to become a good alternative to car ownership.

Less car ownership does not restrict people's access to activities. On the contrary, the moses project – set out in this DVD – shows how a more comprehensive understanding of the various transport modes – trains, buses, trams, bicycles and so on – provides individuals with the choice of combining these different modes. In this model the car is only one of a number of different ways of travelling. For cities with good public transport services or cycle networks, car-sharing serves as a perfect complement to these more environmentally-friendly modes.

Car-sharing has many benefits for the individual user (link to chapter 1), including saving time and money. Car-sharing customers usually have a choice of cars to drive depending on the type of journey they are making. Existing car-sharing services based on the pay-as-you-drive principle have demonstrated a change in mobility patterns (link to chapter 2) which has led to less pollution.

Car-sharing can be well integrated into urban development (link to chapter 13). Intelligent planning with car-sharing services allows a future-oriented urban lifestyle, with more green space, less pollution and less costs. Car-sharing helps to regain street space through reducing the amount of traffic and parked cars. It is the basis for building new developments with less provision for cars; this is less costly and should lead to better urban design. It is clear that car-sharing can make a substantial contribution to sustainable urban development which will be necessary to create the ‘city of tomorrow’.

But we are still a long way from fully exploiting the potential for car-sharing. In some places car-sharing is still a niche market catering for small numbers of users (for example Bremen in Germany which, at the end of 2004, had about 3.300). But in other locations car-sharing is much more widespread: in Switzerland the density of car-sharing is actually 14 times higher than in Germany.

Many European cities still have to start from scratch. The moses project shows that some barriers and obstacles need to be overcome to develop car-sharing, and that there is a risk of it not being economically viable. However, there are car-sharing operators who have proved that car-sharing can be a sustainable professional business service. This means that newcomers don't have to reinvent the wheel: they can obtain the experience of car-sharing operators on a commercial basis, and find out about the lessons of municipal councils and public transport operators via network exchanges.
About the DVD

The *moses* project set out to develop knowledge transfer and sharing of experiences across six European states. The results of this three-and-a-half year project are summarised in this DVD called *Keys to car-sharing*.

The DVD summarises the key findings of the project. It will be of great interest to decision-makers, potential car-sharing providers and their partners, urban planners and public transport operators.

Throughout this DVD you will find answers to some of your most pressing questions, including:

- How do I get started?
- How do I promote car-sharing?
- How do I set up a car-sharing business?
- How do I implement quality standards?
- How do I utilise state-of-the-art technology?
- How do I penetrate the market and satisfy customers through optimised workflow management?
- How can I help to create an environmentally-friendly mobility network?
- How can car-sharing influence urban planning and development?

As well as answers to these questions you will find much more information from different car-sharing partners about how to get car-sharing beyond its niche market so that it contributes towards achieving the more sustainable ‘city of tomorrow’.

This DVD contains various reports and video elements from the *moses* individual projects. You will be able to see how car-sharing works in each of the *moses* cities and view the statements of politicians and other decision-makers involved in these car-sharing projects.

I hope this *moses* DVD will inspire you to take action to set up a car-sharing project where you live.
1. Car-sharing: what’s in it for the customer?

Introduction

This chapter describes the benefits of car-sharing for customers.\(^1\) It compares the service with private car ownership and provides an easy step-by-step guide for how it works in practice. We have also supplied a list of Frequently Asked Questions at the end of this chapter.

If you have just purchased your own car, you have now committed yourself to paying off the purchase cost, the insurance, tax and mandatory inspections (like MOT in the UK) - whether you use your car often or not. You have also committed yourself to finding a parking space. If you live in the city, this might not be easy.

But, if you think there is no alternative, you may be wrong. There are options to simply use a car only when you need it - without owning it.

Introducing car-sharing

A ‘car on call’

Car-sharing gives you a ‘car on call’, whenever you need it. Car-sharing has developed as a modern service in many European cities and is a good alternative to car ownership. It is easy, reliable and may reduce your costs for transportation.

How car-sharing works

Car-sharing provides customers with full personal mobility. Car-sharing cars can be rented by customers at any time of day by the hour, on a daily basis, or for longer. In many European cities car-sharing services are now available or will be developed within the next years. Different operators offer slightly different arrangements, but the basic principles are the same. Most of the operators use modern smart-card access, some use other electronic access systems. Combining this with PIN codes - similar to automatic teller machines (ATMs) – allows for high standards of security and reliability.

\(^1\) For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.
1. Become a customer
When you become a customer of a car-sharing service, you receive your PIN, your personal smart-card and a booklet with technical information, locations of the cars and so on. Booking a car is easy, and you will have access to the cars at any time of the day.

2. Reserve your car
Reservations can be made by telephone or on the Internet 24 hours a day, seven days a week. You can reserve a car in advance or on the spur of the moment. You can make a reservation with a good car-sharing operator for as little as one hour.

Most of the car-sharing operators offer various types of cars to fit in with your purpose for travelling. The cars are modern, well maintained, low-emission vehicles. The website of each car-sharing operator will show you all the available alternatives, locations and tariffs.

3. Access your car
Your will find the car-sharing vehicles in reserved parking places. You may have direct access to the car with your smart-card (in some case also by infrared key fobs, others by mobile phone), or you will obtain the car keys from intelligent lockers (‘key managers’) at larger stations. These stations sometimes have special additional services (for example open-ended bookings).
4. **Drive**

There are no staff where the car is parked, so you need to check it for cleanliness and so on. You are expected to return it in the same condition.

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5. **Return your car**

At the end of your trip, return the car to its reserved parking place. Your data (mileage and time) is recorded and will be transmitted to the central booking office. Your monthly invoice will show every trip with the car you used to make each journey, time of use and mileage.

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6. **And the cost?**

Every operator has their own specific tariffs – you can check them on their websites (for example Germany, [www.cambiocar.de](http://www.cambiocar.de); Belgium, [www.cambio.be](http://www.cambio.be); Italy, [www.ics.it](http://www.ics.it)). But there are usually common features:

- a low monthly fee;
- a mileage-related fee;
- a time-related fee.

Here are some examples from Germany:

- A 3 hour, 20km shopping trip with a family car costs about €12.
- A 100km weekend trip to the countryside with a 2-seater costs about €60.
- A 6 hour, 200km business journey costs about €60 (business tariff).

This short video ([Internal hyperlink to video](#)) provides more information on the practicalities of car-sharing.
### What are the advantages for car-sharing customers?

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<th><strong>No maintenance of a car</strong></th>
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<tr>
<td>If you have your own car you have to get it repaired and take it for regular services and inspections. But with a car-share this is all part of the service. Instead of washing the car on a Saturday, you can read a book, enjoy a coffee or play or watch a game of football.</td>
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<tr>
<th><strong>No insurance or hidden costs</strong></th>
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<tr>
<td>The costs of car-sharing are transparent. All costs are included, and there is no extra fee for insurance, extra taxes and so on, as is quite often the case with car rental.</td>
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<th><strong>Financial benefits</strong></th>
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<td>You can easily compare the costs of owning a car versus car-sharing. Don't forget to include the costs for parking and the time involved in taking your own car to the garage for maintenance and so on. The real cost of each car-sharing journey is easy to calculate as it is the figure that appears on your invoice.</td>
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If you have an annual mileage of about 10,000-12,000km or less then you can save money with car-sharing. The detailed comparison depends on the specific costs of the car-share provider, and the expense of car ownership in different countries (link to Chapter 10).

Driving less means you pay less - this means that car-sharing is a good chance to save money!
Frequently Asked Questions

Would I benefit from becoming a car-share user?

Ideal car-share customers fall into the following categories:

• People who currently own a car and have a low annual mileage – less than 10,000-12,000km (5,000-7,000 miles).
• People who do not currently own a car, but would like to have access to one occasionally, perhaps two or three times per week for social or business trips.
• People who own an older more unreliable vehicle, or whose finances are stretched by car ownership.
• Two-car families who would not need their second car as a result of car-sharing.
• Businesses and public organisations that use pool cars or employees’ own vehicles for business trips.

Will a car be there when I need it?

Reliability of access is typically above 90%, with cars being more in demand at evenings and weekends. The larger the system becomes, the more flexible it is. If your desired car at your preferred station is booked, the booking office or website will offer you alternatives: the same type of car at another station, another type of car, or in some cases (like for a removal van) other times of booking. Customers can also use taxis or rental cars, often at discounted rates.

Can I book on the spur of the moment?

Yes! As a registered car-sharing customer you can book using your mobile phone and be driving in no time. Usually, car-sharing stations are either equipped with an intelligent locker or the cars have an on-board computer to facilitate access. These modern systems make it possible to book spontaneously. Cars can also be booked in advance for important engagements or regular trips to ensure peace of mind.

What about refuelling?

The fuel costs are included in the fee. There is a tank-card in the vehicle, which means that payment for refuelling comes out of the car-sharing operator’s account. You may be need to refuel if the tank is less than a quarter full.

What are the additional costs?

Besides a small monthly fee, the only other costs are those associated with using the car. Fuel, insurance and taxes are included in the price. Cleaning, maintenance, repairs, replacing tyres and so on are included in the fee. You will get a monthly bill where each trip, its cost, time and mileage are listed. You therefore know how much each journey costs you.
Some operators charge an initial fee. Others – especially if they are organised as a cooperative – will charge a kind of membership fee or deposit, which will be paid back if you leave the scheme.

**Q** What happens if I am delayed or need to extend or cancel a booking?

**A** Contact the booking office. The office will try to sort out the problem to your satisfaction. Some car-sharing providers also offer ‘open-ended’ booking at larger stations, which gives you even more flexibility.

**Q** Will I be able to use car-sharing to book a car for longer periods, for example to use on holiday?

**A** Most car-sharing operators will have negotiated a special rate with a car rental firm for members who want to book cars for a longer hire period - or for one-way bookings - so that the car-sharing vehicles are still available for short-term use.

Some operators allow customers to book cars at any of their branches, so you can travel by public transport to your destination and make use of car-sharing when you arrive.

**Q** Can a car-sharing operator provide a range of cars to choose from?

**A** This will depend on the size of your local operator but even an operator with two cars could offer a city car and an estate.

Larger operators offer a greater choice, from open-top sports cars to family cars to small vans. The operators will list the choices available on their websites.

See an example: (link to Cambio Germany)

**Q** How does insurance work?

**A** The insurance is included in the fee. You will be covered for driving cars booked through the operator. There is an excess if you are responsible for an accident. Membership is only available to people with a fairly clean driving licence and, depending on the insurer, to people who are over 21 years old.

**Q** What happens if I have an accident?

**A** You will be made aware of the procedure for reporting any accidental damage. The police must be informed if you are involved in anything other than a minor accident, or if anyone is injured. The operator will take the necessary measures and settle damages. The cars are fully insured. If the accident is your own fault, you only have to pay up to the agreed excess.

A good operator will change the later bookings for that car so that other customers are not inconvenienced.
What happens if the car breaks down?

The risk of this is quite small as car-sharing cars are usually modern and quite new. But you are entitled to use breakdown services. The booking office will guide and support you in this.

Is car-sharing also a possibility for corporate users?

Car-sharing can help to optimise fleet management of companies and public administrations. It allows for a better and less costly management of peak demand. Typically, company cars are usually not in use at evenings and weekends – but they still cost the organisation. Car-sharing means that individuals can use the cars in these off-peak times and help to reduce costs. This also means that companies can reduce their leasing and parking costs which in inner city areas can add up.
2. Car-sharing: what’s in it for society?

Introduction

This chapter examines the societal and environmental benefits of car-sharing, especially through increasing the efficiency of transport infrastructure, reducing the number of cars and changing behaviour through alterations in mobility patterns.¹

Transport is a vital element in our daily life and society. A car-based society can have some benefits for the economy, but there are also severe negative impacts such as noise, pollution, risk of accidents, the occupation of space, and the inequity of different social groups’ access to mobility. Ever-increasing consumption of energy and carbon dioxide emissions from transport are further problems. Technical solutions may help with the pollution problems, but to reduce the space required for parking, an approach is needed that takes car ownership into account.

Car-sharing can benefit cities for all

All strategies to win back space in our cities for other environmental and social uses need to tackle the problem of too many cars. This means reducing the amount of space used for parking as well as decreasing congestion on the roads. Car-sharing is an important tool in improving the efficiency of transport infrastructure.

Social and environmental benefits

Car-sharing has already demonstrated its potential to reduce the negative impacts of mobility, without reducing access to the various modes of transport.

Environmental gains

There are three key benefits for the environment:

- Each car-sharing vehicle replaces four to eight private cars. Thus car-sharing reduces the space given over to parking and helps to regain space for environmental and other social uses.

- The pay-as-you-drive system of car-sharing provides an incentive for people to use cars less and instead use public transport, a bike or walk. Car-sharers have a greater variety of transport options available to them as when deciding how they will travel.

- Usually, car-sharing operators offer a variety of cars, which can be used for a range of purposes, from the small city car to medium-sized family cars, vans and mini-buses.

¹ For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.
Car-sharing vehicles are generally recent models, and are therefore less polluting and more energy efficient.

**Fewer cars**
It seems that, in all cities, parking is a sensitive political issue. Car-sharing is a much less expensive alternative to extending parking space underground and seems to make much more sense.

"The most intelligent development since the car came onto our streets"
The space in our cities is limited. The increasing demand for space by motorised transport has reached its limits. Public space should serve more than transport needs, because it is also valuable for other social and environmental uses. Strategies for making our cities more family friendly, for improving local environments and also for reclaiming space for pedestrians and cyclists need to tackle the parking requirements of cars.

Experience shows that every car-sharing vehicle within a modern car-sharing system replaces four to eight private cars. In Bremen, for instance, about 90% of car-share users do not have a car in their household. In 6% of households, car-sharing replaces the need for a second car.

As an alternative to private car-ownership, car-sharing offers a service with easy access, decentralised locations (link to Chapter 9) and a choice of different vehicles.

Car-sharing is an innovative service which seems to be the best way to reduce the number of cars on our streets and to reclaim street space at the same time. In the case of Bremen, car-sharing has replaced about 700 private cars – reclaiming more than 4km of street space from the demands of car parking. The cost of achieving this same impact with parking garages would be at least €7-10 million.

One calculation for Zurich (342,500 inhabitants, 10,000 car-sharing customers, 330 car-sharing vehicles) shows that about 1,650 vehicles have been replaced. These cars would

otherwise require a parking space of 25,000m² – the size of five football pitches! This has saved an investment in underground parking of around €33 million.\(^3\)

**More mobility options**

Car-sharers have more options for how they move around. They also use public transport more often. Several studies of car-sharing systems in Germany and Switzerland have identified similar results: previous car owners have reduced their car mileage by about 1,000-1,600km annually, and doubled their mileage on public transport.

This results in a direct reduction of energy consumption, carbon dioxide emissions and noise. The Swiss study stated a reduction in individual transport-related energy consumption of 55\%.\(^4\)

![Diagram: The mobility behaviour of CarSharing participants who give up their own car is similar to that of people who do not have access to a car](source: Energie 2000/Muheim 1998)

### Car-sharing changes behaviour

The results of this study suggest that people who give up their car after joining a car-sharing scheme use public transport, bicycles, scooters and walk more, while still having the benefits of easy access to a car whenever they want it.

### More efficient vehicles

Other benefits of car-sharing arise from using more efficient vehicles. An environmentally friendly car-sharing provider will offer low emission cars. A fleet of various types of vehicles will be available to choose the one which is most appropriate for the purpose. A small city car is usually most energy efficient and less polluting. An estate car may be necessary for family trips, and a van required for group trips or journeys with lots of luggage and so on. In some cases alternative/renewable fuels may increase the energy efficiency. However, the main impacts result from the principle of car-sharing: fewer cars, less car mileage, and higher efficiency.

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\(^3\) See paper of the Association of German PT operators (vdv - Verband Deutscher Verkehrsuntemehmen) and the Federal Association for CarSharing (Bundesverband CarSharing bcs), Mobilitätsbaustein CarSharing; Empfehlungen zur Kooperation mit dem ÖPNV, vdv Mitteilungen 10.009; Cologne, 2004

\(^4\) Muheim, Peter; „CarSharing - the key to combined mobility“, study for the Swiss federal office of energy, Berne, 1998
Choice and efficiency

Some car-sharing operators (link to Chapter 3) - especially in Sweden, Italy and France - have alternatively fuelled vehicles in their fleets. The exemption of ‘clean vehicles’ in congestion charge initiatives (as in Italy, Sweden and London) may provide a further incentive for the use of such cars. However, at present it seems to be important to offer cars which can show an equivalent performance in terms of reliability and costs as conventional cars, rather than offering alternatively fuelled vehicles with reduced mileage or limited performance.

An element in the sustainable city of tomorrow

Car-sharing is one of the most efficient ways of reducing energy consumption and carbon dioxide emissions generated as a result of personal mobility; at the same time it allows for more choice and greater mobility options than conventional car ownership. With car-sharing, energy consumption for personal mobility is approximately halved. The Bremen car-sharing system shows (in a life cycle analysis) an annual carbon dioxide reduction of about 800 tonnes!

With its potential to reduce the need for a private car, car-sharing is a vital element of strategies for sustainable urban development (link to Chapter 13). Less parking is not only a financial question but also one of urban design and the quality of urban living. Car-sharing can also lead to more use of public transport (link to Chapter 12) and bicycles.

Creating attractive urban environments provides an alternative to the still ongoing trend of suburbanisation.

To be set: Internal hyperlink to ‘Car-Share city’ (animation...)

4
3. How do you get started?

Introduction

Car-sharing has now come of age as a fully-fledged and professional mobility service, on the verge of becoming mainstream. The concept and service standards are now well defined. However, there is no one-size-fits-all approach to setting up a successful scheme from scratch in a city or region. This chapter provides an overview of a number of schemes, showcasing varying approaches. Related aspects are explored separately in other chapters.

So, car-sharing seems like a good idea to you and you want to set up a scheme in your city or region – but how do you go about it? Unfortunately, there is no single answer to this question. Car-sharing schemes operating today do so using a variety of models or strategies, and over the last 20 years the approach has gone through quite an evolution.

From grassroots initiative to mainstream professional mobility service

Car-sharing has come a long way since its origins as small-scale, local, cooperative initiatives. Historically, people have informally shared their cars with family, friends and neighbours. More structured car-sharing came about when groups of neighbours worked out some rules to share their cars, because they found it more efficient, cheaper and more environmentally friendly. In this way they were able to share the costs and the burdens of a car, as well as the benefits and the comfort. And, of course, it meant they could manage with fewer cars. But what we are looking at today is an altogether different concept, on a much larger scale:

- Car-sharing is now run by professional operators. Clients are rid of all the hassle and they simply book, drive and pay.

- Sophisticated services and technology have allowed schemes to spread over entire cities.

- Operators are now collaborating in networks, while some schemes even cover a whole country, as in Switzerland and Italy.

- Within the moses project, the first inter-country scheme has begun, between Germany and Wallonia (Belgium).

- The potential for growth is clear, and the final aim should be a European-wide integrated network.

The concept and the service standards have become progressively better defined. Car-sharing has turned into an attractive commercial venture, as well as a tool for mobility.
planning and management. It is now ready to become just as widespread, mainstream and accepted as public transport.

**How to mix your car-sharing ingredients**

In the pioneering countries, mainly Switzerland and Germany, car-sharing has grown ‘organically’. Cities, countries or regions wanting to launch car-sharing from scratch face a different challenge: how to tap into the know-how and experience of existing schemes in order to launch car-sharing as a fully-fledged mobility service. The whole purpose of Keys to car-sharing is to explain what has been nurtured over the last 20 years. Each chapter allows you to explore a number of key issues, covering the entire range of practical aspects that experience and research have shown to be crucial. They explore the important questions you need to ask and identify the choices you will face, including:

- What is the local context and how should you deal with it? ([link to Chapter 4](#))
- What support can/should/will public authorities lend? ([link to Chapter 5](#))
- Does the legal system favour or hinder car-sharing, and should adjustments be made? ([link to Chapter 6](#))
- Which technology should be used to operate the system? ([link to Chapter 7](#))
- What service standards should be set? ([link to Chapter 8](#))
- How should car-sharing stations be designed? ([link to Chapter 9](#))
- What should be in the business plan and where will initial funding come from? ([link to Chapter 10](#))
- What should be the marketing and promotion strategy? ([link to Chapter 11](#))
- To what extent can and will public transport be a partner? ([link to Chapter 12](#))
- How can car-sharing and urban planning fit together? ([link to Chapter 13](#))

The answers to these questions can vary greatly because of local factors. You could call this a list of ingredients, but there is no one recipe. To show how different the mix of ingredients can be, the remainder of this chapter provides an overview of six schemes, highlighting the range of possible approaches in getting started. These are titled:

- cambio goes to Wallonia (Belgium): a cross-border success story;
- ICS – the Italian way: a national push for local car-sharing;
- Mobility CarSharing has Switzerland covered: a nationwide cooperative model;
- stadtmobil Dresden: car-sharing as public transport;
- Sweden innovates: in-company car-sharing;
- Bucharest: car-sharing transfer to accession countries.
cambio goes to Wallonia (Belgium): a cross-border success story

From the main page of the cambio Belgian website, clients can now click through to book cars in Germany (and vice versa).

Following years of research and planning by a potential operator and various authorities, it was decided to set up a nationwide Belgian car-sharing scheme, starting in all major cities, as part of a sustainable mobility policy. The purpose was to create a network where a customer in one city could use a shared car in another, making the journey in between by public transport.

A key strategic decision was to first build up a robust and self-supporting mobility service in its basic form. The use of clean cars and car-sharing for low-income groups or in rural areas are being considered as additional sustainable mobility options, but were deemed too risky in the early stages.

In order to offer a full-fledged, professional service from the start, the operator set up a partnership with the well-established German operator cambio to create Optimobil. The technology (link to Chapter 7), the product, the services, the pricing, customer relations and promotion tools were all tailored to suit the local situation. After a six month test run in a pilot car-sharing station, the scheme was fully operational as a high quality service (link to Chapter 8) relying on sophisticated and tested technology.

The Wallonia regional authorities (link to Chapter 5) were instrumental in creating the right conditions for success. Besides modest financial support, they were the driving force in setting up conventions between the operator, city authorities and public transport operators. They are continuing efforts to consolidate car-sharing by integrating it into policy documents and transport plans.

Authorities from all levels collaborated in drawing up a legal definition of car-sharing (link to Chapter 6), and setting out regulations allowing for dedicated on-street parking bays for shared cars with an appropriate traffic sign.

Public transport operators (link to Chapter 12) were taken on board from the very start. Partnerships with the car-sharing scheme resulted in shared facilities, joint promotion campaigns and joint ticketing. The resources and communication channels of public transport operators helped to put across the crucial message of promoting complementary services, and to target a key potential client group: public transport users.

The collaboration with cambio Germany allows clients from both countries to use shared cars in either country; this is a type of use that is on the increase.

www.cambio.be
In Italy, strong political commitment (link to Chapter 5) by national government has given powerful backing to the launch of car-sharing schemes all over the country.

Car-sharing was included by the Italian Ministry of Environment in a package of strategic measures to improve sustainable mobility in 1998. In 2000, approximately €9.3 million (link to Chapter 10) was set aside to support the development of car-sharing services.

This approach recognised two concerns. On the one hand, the role of local authorities and economic operators in an open market was considered crucial. On the other, it was equally important to avoid fragmentation and instead create a national ‘brand’, so that customers could easily use a clearly recognisable service across the country.

Iniziativa Car Sharing (ICS) was the answer, set up in October 2000 in the form of an Agreement (Convenzione) between municipalities (link to Chapter 5). ICS’s mission is to stimulate the development of car-sharing, to guarantee that nationwide service and system standards are respected, and to manage the allocated funds. ICS does not hand out funds, but provides goods and services. It does not intend to be a lasting service provider.

ICS offers municipalities and their car-sharing operators assistance in:

- designing and setting up a system, in all its technical, legal and administrative aspects;
- providing the technology (link to Chapter 7) for operating the service, including on-board computers, call centre equipment, communication links and assistance;
- managing customer services (link to Chapter 8) through a call centre or contact centre;
- carrying out marketing activities (link to Chapter 11) such as communications and promotion.

Investments (link to Chapter 10) during the first three years are co-financed by ICS and the local schemes. Local operators can allocate ICS resources freely according to the needs of the project.

Any municipality willing to set up car-sharing has access to these benefits through a standard application procedure. ICS has so far worked with many of Italy’s most important cities: Bologna, Brescia, Florence, Genoa, Modena, Palermo, Parma, Reggio Emilia, Turin, Venice, Novara, Milan, Rome, Taranto and Padova, as well as the provinces of Milan and Rimini. Many others have shown interest.

www.icscarsharing.it
Mobility CarSharing has Switzerland covered: a nationwide cooperative model

All through Switzerland, using RailLink is an easy way to combine train and shared car on a single trip.

Car-sharing in Switzerland began in 1987; two groups of friends in two different cities founded a car-sharing cooperative, each sharing one car. Ten years later, on 13 May 1997, Mobility CarSharing Switzerland was officially created as a national scheme, on the basis of the fusion of the two pioneer cooperatives.

Mobility CarSharing Switzerland was established as a nationwide high technology company and currently has around 1,700 cars in 930 different locations for more than 60,000 customers (representing 1.5% of all Swiss driver’s licence holders). Around half of them are members of the cooperative (owners).

The legal basis of the cooperative (link to Chapter 6), as well as the national coverage of the scheme, and the user-friendliness (link to Chapter 8) of its system (fully automated and commercially oriented) are the key factors of its success.

The legal basis of the cooperative means that the customers also own the business. They are therefore much more loyal to their company than normal customers. Members do not pay annual fees and are rewarded by a discount of 20% on the kilometre tariff: the ‘better’ the customer is, the higher the dividend they receive!

Strong partnerships have been developed since 1996 with 15 public transport operators (link to Chapter 12) all over the country. Zurich (ZVV), Lausanne (tl) and Geneva (TPG) have all created special combined season tickets. People can choose between very low cost access to car-sharing for CHF 25 per year (by paying an extra Swiss Franc per hour), or normal access for an annual fee of CHF 190.

In 2001 the RailLink scheme was founded as a joint venture by the Swiss Railway Company (which provides customers and stations and a national sales and marketing network), DaimlerChrysler Switzerland (supplies cars and technological know-how) and Mobility CarSharing Switzerland (provides process know-how, technology and maintenance). The target is to integrate transport options. RailLink gives people the opportunity to catch a train for the main part of a trip, then pick up a RailLink car at the station and drive it for the last part of their journey. [insert picture]

Since 1999 the Denzel company in Austria has run its nationwide car-sharing scheme called DenzelDrive with MobiSys, the highly sophisticated and tested fully automated hard- and software-system from Mobility CarSharing Switzerland.

www.mobility.ch
Stadtmobil Dresden: car-sharing as public transport

In Dresden, shared cars are part and parcel of public transport. For Dresden’s Public transport operator, DVB AG, this was part of a strategy to broaden and upgrade their offer.

Dresden’s public transport operator (link to Chapter 12), DVB AG (Dresdner Verkehrsbetriebe AG), aims to be a comprehensive mobility service provider. As such, it wants to offer public transport alternatives to the private car for all journeys, not just at rush hours and in the city centre, but also at times of low demand and in lower density areas. Car-sharing has been recognised as part of this package.

As early as 1997, DVB AG signed a contract of cooperation with the Dortmund car-sharing provider Stadtmobil CarSharing GmbH. Together they launched Stadtmobil Dresden CarSharing e.V. The joint organisation, a public-private partnership (link to Chapter 10), set up 36 cars in 10 locations as a pilot project.

The next step was to consolidate this partnership as Stadtmobil Sachsen Carsharing GmbH in 1999. In 2000, the public transport operator Chemnitz joined, and Stadtmobil Chemnitz was launched. Stadtmobil Sachsen now also cooperates with Deutsche Bahn AG, on the basis of franchises; it operates more than 60 cars in 18 places, near public transport interchanges.

Stadtmobil Sachsen also serves institutional and corporate customers, such as DVB AG itself. Employees use shared cars for business trips which cannot be made by bus or train.

Pricing reflects the integration of services: regular public transport users pay a reduced monthly car-sharing fee – €5 instead of €10 – and receive a 10% discount on fares.

Customers can clearly identify car-sharing as an integral part of the public transport on offer. The branding (link to Chapter 11), image and corporate design of car-sharing and public transport are aligned, and promotion makes the link explicit, for example in slogans such as ‘Stadtmobil Dresden – the public car from DVB AG’. The message is that this innovative service is offered to them by their established and trusted public transport operator.
Sweden innovates: in-company car-sharing

The first grassroots car-sharing organisation in Sweden began in the 1970s, but the number of participants did not reach 1,000 until the late 1990s. Most of the car-sharing organisations are still small and organised as cooperatives.

In the last few years a number of more professional car-sharing services have developed. There are now two private providers who offer a complete service to clients, mainly in the two largest cities, Stockholm and Göteborg. SunFleet Carsharing offers its services to companies and organisations only, but employees at those companies and organisations can also, by a special agreement, use the cars at evenings and weekends. CityCarClub offers car-sharing to both organisations and households.

Another type of car-sharing is also growing strongly in Sweden. This is a concept which could be described as ‘in-company car-sharing’. This means that a number of cars are owned/leased by a company and organised for shared use by the employees for work trips. The cars are reserved in advance in a booking system which is sometimes connected with on-board computers. The City of Stockholm (link to Chapter 5) was one of the first organisations to be involved in the development of an IT system (link to Chapter 7) that handles the reservation process as well as access to the cars, mileage and so on. This internal car-sharing concept is attractive to companies that do not have a car-sharing provider in their city or who do not want to mix with household customers. In the long run, though, the most economically efficient concept is to mix corporate and individual customers (link to Chapter 10).

[insert web address]
Bucharest: car-sharing transfer to accession countries

The beginnings of car sharing in Bucharest can be traced back to the public transport operator RATB’s participation in the European project TOSCA (Technological and Operational Support for CAR-sharing), which studied the feasibility and acceptability of a car-sharing scheme in Bucharest. This study was optimistic about the prospect of starting a scheme and, with local municipality support and participation in the moses consortium, there were further incentives to develop a car-sharing service in Bucharest.

The next stage was to create a car-sharing experimental area, where the functionality and acceptability of car-sharing could be tested on a real application. The rationale was to provide data about a real car-sharing service in order to assess the best way of progressing to a large scheme, taking into account the unstable business and legislative environment, as well as the uncertain behavioural aspects.

The service was integrated from the beginning with RATB. This was the result of a municipality initiative to promote new mobility solutions for reducing the effect of the increasing number of vehicles, and to provide integrated transport services as a way of achieving land use and mobility objectives.

Personnel from Romania attended training at the German partner ECOLO, in order to provide a professional car-sharing service in Bucharest which is similar to more longstanding schemes from EU countries such as Germany and Switzerland.

The major impact of the moses project in Bucharest has been that local authorities are already started to consider the car-sharing concept as a real option for the city’s mobility problems. This could be the precursor to the design of a larger car-sharing scheme, and may also provide the financial support in order to continue the development of an integrated car-sharing service in Bucharest.
4. What is the market for car-sharing?

Introduction

When setting up a new car-sharing scheme, a thorough understanding of the local context is indispensable. Are there enough potential customers? What are people’s mobility needs and how are they met? Will people be open to the idea of car-sharing?

It is also important to explore key indicators like urban density, spatial and mobility patterns, and perceptions and attitudes. An in-depth survey of these issues will help you to prepare a more effective strategy which can make the most of the local opportunities and tackle local obstacles. Success stories from all over Europe and elsewhere prove that car-sharing can and does work. But specific local factors can play havoc with even the most carefully planned new scheme.

The following checklist suggests some key indicators that you should examine, based on the experiences of established schemes. Some of these factors may be quantified, for instance using census data, although most will require qualitative analysis.

Urban density: are there enough potential clients to make car-sharing viable?

Urban areas offer the best chance for operational and commercial viability for several reasons:

- **Population density**: If a car-sharing scheme is to have a chance of being self-supporting there is a threshold of population density in the catchment area that needs to be achieved. Healthy schemes have a rate of about 30 clients per car, in areas defined by approximately a 10 minute walking distance. Their penetration rate is around 1% of people with driving licences in the area being served – Mobility Switzerland attains 1.8% for the whole country, but several studies agree that the market potential is a multiple of that – the moses user needs report (link to report) provides an overview. This means that a density of 3,000 inhabitants per km² yields a statistical potential of 30 customers within easy walking distance.

- **Potential customer density**: Having more customers living closely together means that you can have either larger car-sharing stations or a closer-knit network of small stations: users will have a larger choice of cars and stations closer by. There is a virtuous circle at work between higher density and better service, making it more attractive to new customers.

- **Reduced car-dependency**: Urban areas also generally have well developed public transport and a density of employment and services within walking or cycling distance, reducing the need for car travel. This reduced car-dependency in itself makes car-sharing a more attractive option for those trips where a car is still desirable. Existing

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1 For the benefit of readers from the UK, throughout *Keys to car-sharing* we use the term car-sharing for what in the UK is generally known as car clubs.
schemes consistently show that public transport users (link to Chapter 12) are a primary target group for car-sharing.

- **Potential business customers:** Businesses are potential daytime users which are needed to balance the evening and weekend use of individual customers. This mix of users is commercially vital. Car-sharing is often a financially attractive fleet-management option for large companies, as well as a clever option for smaller-sized shops and more broad-minded professionals, for their deliveries, service trips or visits to clients.

However this does not exclude car-sharing in low density areas. In these locations, a scheme will need a strategy to diversify and maximise the use of the cars. It will also probably need additional funding through partnerships or other sources. It may make sense for a well-established urban scheme to extend its network into lower density areas, even at a lower profitability rate. More profitable stations would pay for the less profitable ones, and such a move would increase the overall attractiveness of the service being offered.

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**Preparing for rural car-sharing in Wallonia**

In Wallonia’s rural and forest areas, low population density makes it difficult to maintain traditional fixed-line public transport at attractive levels of service. This tends to make the use of private cars indispensable.

The regional government has developed a strategic plan aimed at reducing car dependency in rural areas, while providing a minimum level of mobility access. This policy is guided by a plan for sustainable rural development. A key action is the use of demand-responsive public transport. Car-sharing is considered to be a logically complementary service.

Interested local communities are presented with guidelines for how to share the risk: the commercial car-sharing operator can provide cars and handle bookings, while local authorities can guarantee minimum revenue. Tailor-made solutions are negotiated, possibly including partnerships with regional authorities and public transport operators.

Local authorities need to carefully plan how to maximise use of the vehicles by diversifying users. In addition to the relatively few individual customers, they can attract corporate clients as well as using the cars themselves. In time, this may result in a financial win-win situation because the local administration may be able to reduce or get rid of its fleet of cars by using the car-sharing service systematically.

Car-sharing is a tool for spatial planning, stimulating increased urban density, through facilitating, for example, low-car and car-free housing (link to Chapter 13). Urban density in itself, however, does not guarantee that a sufficient number of people will actually adopt car-sharing. We also need to look at other factors.

**Spatial and mobility patterns: can the combination of car-sharing and public transport adequately cover people’s mobility needs?**

People will only consider adopting car-sharing if it is an attractive proposition in their particular situation. It will definitely not be attractive to those who need a car for their daily commute (although we should keep in mind that car-sharing is increasingly becoming an alternative to a second car for households).

So, a key question is: do people have viable alternatives for their daily commuting? Walking and cycling are certainly options, provided distances are fairly short and the infrastructure is in good condition. But, in most cases, the major alternative for commuting...
trips will be public transport. Put differently, the combination of public transport and car-sharing should be able to fulfil people’s mobility needs. Neither car-sharing nor public transport (link to Chapter 12) can offer a complete alternative to a private car, but in tandem they can.

We recommend undertaking three steps to ensure that car-sharing and public transport are integrated.

**Step 1: Understand the ‘demand side’ of mobility**
Where do people live in relation to where they work, shop, send their children to school and have their leisure activities? How do they get there? What transport do they use for business trips? We can analyse this by looking at spatial and travel patterns, car ownership and modal split. In many cases, existing transport plans will contain this information.

**The case of Louvain-la-Neuve**
The success of car-sharing in the small university town of Louvain-La-Neuve goes against the intuitive notion that the larger the city, the higher the chances of success. It must be said, however, that its spatial structure and transport conditions provide a set of favourable conditions.

Louvain-La-Neuve has a moderate urban density, covering an area of 6km² with a population of less than 20,000 – half of them are students. It is structured around a dense central pedestrian area, which contains a wide range of services. This means that a car is not necessary for local trips.

The centrally located railway station sits on the important line connecting Brussels and Namur (the regional capital). Frequent connections to these two main employment hubs mean that a large number of people commute by train.

However, a number of leisure and shopping trips go towards smaller suburban centres in the wider metropolitan area of Brussels, which takes a kind of polycentric shape. For these trips, public transport is insufficient and a car is almost indispensable. This is the gap that car-sharing fills.

Wallonia’s most successful car-sharing station so far is the one in Louvain-La-Neuve, named Gare. It is centrally located, next to the train station, and with direct access to and from the pedestrian area. It is within walking distance of most areas of the university new town.

**Step 2: Understand the ‘supply side’ of mobility**
How easily can people get about by public transport and by car? This should be analysed by examining, from a user’s point of view:

- the public transport on offer: key indicators are network spread, density and topography, frequency and speed of service;
• driving conditions: key indicators are road network quality and capacity, congestion levels, parking levels and management.

In general, car-sharing is more attractive where public transport is sufficiently developed for regular trips but, at the same time, car travel is indispensable and relatively easy for other trips.

Car-sharing will be less attractive where:

• public transport is so under-developed that owning a car seems unavoidable, whether driving conditions are good or bad;
• public transport (including taxis) is so well developed (reliable, fast, affordable) that it can cover most trips, and, at the same time, driving conditions are so difficult (high levels of congestion, severe parking problems), that public transport is the most attractive overall option.

The case of Brussels: the right balance?
The success of car-sharing in Brussels illustrates what can be achieved in a medium sized city. In spite of its European significance, Brussels is far from being a giant metropolis. The administrative unit of the Brussels Region only covers an area of about 160km², with about one million inhabitants. Population densities range from 2,000/km² (on the outskirts) up to 19,000/km² (in the inner city). The functional metropolitan area stretches further than that and contains about three million people.

The Brussels railway stations form the hub of the Belgian railway network, carrying thousands of commuters from distances of over 30km. But the radial lines are not geared to orbital journeys within the wider metropolitan area.

The Brussels urban public transport network is quite dense and popular, but it stops at the administrative boundaries. This means that for trips in a range of 30km around the central area, a car is easily the most attractive option. So, public transport in Brussels gets people wherever they need to be within the central area, and car-sharing helps out for trips around it.

Step 3: Find opportunities for car-sharing and public transport to integrate
To make the combination of car-sharing and public transport actually work, it is important to create the best possible conditions. Two key factors need to be addressed:

• Locate stations near public transport hubs: (link to Chapter 9) Car-sharing stations near railway and bus stations smooth the integration of both modes. Customers then have a range of options for any trip, and users who live further away can catch a bus to pick up a shared car. In addition, these sites are highly visible and strengthen the image of a mobility service which complements public transport. (link to Chapter 12)

• Create and advertise a reduction in total mobility costs: If public transport, in combination with car-sharing, is clearly cheaper than owning a private car, people will see a reduction in their total transport bill. Pricing strategies need to take into account the price structure of public transport. Combined tickets (link to Chapter 12), which offer reductions to users of both public transport and car-sharing schemes, are fast becoming a staple of car-sharing services. Making people aware of this financial gain requires good communication (link to Chapter 11). Surveys show that up to three out of every four people have no idea of their total mobility costs and systematically
underestimate the cost of owning a car and, subsequently, of the gains car-sharing can offer. Looked at from another angle, car-sharing itself is a tool for mobility policy, helping for instance to bring about a modal shift, in tandem with public transport support and incentives.

Perceptions and attitudes: will people take to the idea of car-sharing?

People’s minds may be convinced, but will their hearts follow? The ‘rational choice’ factors set out above are one thing, but people’s perceptions and feelings are another. An attempt should be made to assess the attitudes set out in the table on the following page.

The case of Turin: the city of car makers

The city of Turin has about one million inhabitants and its population density is about 6,900 people/km² (in the inner city). The Turin urban public transport network is dense and well used by the local population as well as commuters. It covers the entire metropolitan area.

The most important Italian car maker - Fiat - has its headquarters here, and also has some production plants in the metropolitan area. Citizens are used to having and driving their own car. However the Municipality of Turin supports car-sharing with a range of interesting measures such as permission to access traffic limited streets and areas and reserved lanes, and the option of using a car every day and free parking in the town centre.

These supporting measures seem to be the key element in the success of car-sharing in Turin. Many companies who are located in urban centre find it saves time and money to be a part of a car-sharing scheme. Many individual customers have also chosen to become car-sharers to take advantage of these benefits, as well as enjoying the traditional advantages of using a car-sharing service.
### Attitudes towards the private car

| People who see cars as a utility and as just one among a range of available transport options are likely be open to car-sharing. | If people have a strong emotional attachment to their cars or feel that not having their own car will make them ‘outsiders’, their chances of adopting car-sharing are slim. To what extent is owning a car perceived as a status symbol, and a factor of social integration? |

### Attitudes toward public transport or any kind of collective transport

| People who feel that public transport is, on the whole, a reliable, comfortable and mainstream way of moving about may see car-sharing as a practical extension of that. | People who feel that public transport is for the ‘poor’, uncomfortable and/or offers a bad service, may project that attitude onto car-sharing. |

### Environmental awareness and commitment

| People who care about the environment, pollution levels, traffic congestion, the degradation of public space, and who are willing to make an effort themselves, may be enthusiastic about taking up car-sharing. | If improving the environment is something people associate with making sacrifices, ‘tightening belts’ and reducing their quality of life, then stressing environmental arguments for car-sharing will backfire. |

### Attitudes towards sharing and cooperation

| If cooperative initiatives or shared facilities (such as public gardens, libraries, kitchens or laundries) are well-accepted, then it will only be a small step for people to accept car-sharing. | If people are strongly attached to their individual possessions, spaces, and the associated privacy, then car-sharing may seem too much of a threat. |

### Attitudes towards novelty

| People who easily take to new concepts and are willing to try them, and for whom novelty is a value in itself, may see car-sharing as the new thing to do. | People who are set in their traditional ways may feel car-sharing upsets their habits too much and will doubt whether it can actually work. |

### Awareness of the concept of car-sharing

| The more people are familiar with car-sharing, the more they will be inclined to consider it. Surveys generally agree that media coverage and mouth-to-mouth publicity have the largest influence. | People who have never heard of car-sharing before may be put off by the unusualness and apparent complexity of the scheme, and need some time to realise the benefits. |

All the above also applies to the business world. If businesses are environmentally committed (for example have a green transport plan), have a culture of sharing facilities and tools (such as car pools), encourage public transport use and like novelty, they will be more open to car-sharing. If company cars are valued as status symbols or benefits on top of employee salaries, then car-sharing is up against formidable hurdles.

These factors are notoriously difficult to quantify and influence with any reasonable degree of certainty, but it is worth making the effort. Many people will readily offer you their opinions on people’s attitudes in your city, region or country. But beware of accepting these as untested self-evident truths. Explore the range of attitudes that exist and their importance within a number of target groups.

Some statistical indicators such as age, level of education and social category can be used as a rough first indication, but are to be interpreted with care. Marketing surveys (including questionnaires and focus groups) can be carefully targeted and should ask people directly about their attitude towards car-sharing. Sometimes they show surprising results, for instance that more people than expected experience a private car as
something which is indispensable, but mostly a lot of bother and a burden, rather than a source of joy and freedom. (link to survey results PPt Louvain-La-Neuve)

When determining who your market should be, always aim for the mainstream. The car-sharing idea was originally stimulated by cooperatives and people with environmental concerns, and these can still be persuasive. In today’s market, the novelty value may also attract some other customers. But, if car-sharing is to grow further on a European-wide scale, the main efforts need to be directed at attracting a mainstream audience. Car-sharing will succeed if it is perceived as a modern, streamlined and proven mainstream mobility service. The most successful new schemes have been launched and promoted on this premise. (link to Chapter 11)
5. What support can public authorities provide?

Introduction

Dealing with parking problems has become a key issue for many cities. Car-sharing offers one attractive solution where fewer, but better used, cars still guarantee individual mobility, while helping to reduce congestion and easing the space requirements for cars in our cities. The space saved can be dedicated to much needed parks and other green areas, and facilities for pedestrians and cyclists to help make the city environment more attractive. There are many ways public authorities can influence and support car-sharing and there are now a number of successful examples based on cooperation between local authorities, public transport operators and car-sharing operators. This chapter shows how each level of central, regional and local government can contribute to the success of car-sharing.

National and regional authorities

Traffic regulations
As car-sharing is a new concept, it is likely that national regulations will need to be amended to deal with issues such as signage, the scope of traffic regulations or the permissibility of allocating on-street road space for car-sharing vehicles. There might also need to be a national definition of what car-sharing is to clarify what type of organisations could benefit from any new regulations. (link to draft definition)

National support for schemes
National governments have the scope to support car-sharing both in terms of policy and funding support. The Italian Government's support for a nationwide pilot of car-sharing is one example of this. Strategic plans at national or regional level could support the concept of car-sharing and encourage municipalities to facilitate the introduction of this quasi public transport mode of transport.

Standard setting
So far the Blue Angel eco-label for car-sharing is the only adopted standard available. This was produced by a committee of national and regional authorities and NGOs in Germany. It serves as a useful benchmark for car-sharing schemes throughout Europe and could be emulated elsewhere. (link to Blue Angel)

Research into car-sharing
There is still a role for complementary research into car-sharing to develop this mode of transport further; there is a strong role here for national governments and the European Commission.

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1 For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.
National support for car-sharing

The Italian Government provided €9.3 million in 2000 for car-sharing schemes in eight Italian cities – six (Bologna, Modena, Rimini, Torino, Venezia, Palermo) now have active services. Genova, Firenze and Palermo are also going to establish schemes. In January 2004, approximately 97 cars and 1,700 members were using the new car-sharing facilities. Further Funds are provided for CS operators for purchasing methane gas supplied vehicles.

Local municipalities

In many cities car-sharing is one of a few key solutions that will help reduce the adverse impact of cars. Support can come from a range of authorities within the city, which ideally should work together for the best possible impact.

City planning

City planning departments can provide the overall framework for the development of car-sharing:

- **In the strategic planning of the city**: This level of planning develops the policy for car-sharing for the city, sets out the expectation that new developments contain car-free elements, and identifies land that should be safeguarded for car-sharing infrastructure.

- **In detailed planning advice**: Many cities are now so short of space that they will insist on low-car or car-free developments and this can be linked firmly to the provision of car-sharing infrastructure and support. The city can issue planning guidance or standards required for new developments, which need to be satisfied before permission for development can be granted. ([link to Chapter 13](#))

- **In encouraging car-free or low-car developments (both housing and commercial) for the municipality’s own developments**: Where a city authority is the developer there is considerable scope for building with car-sharing in mind. This provides the city with scope to experiment and set a good example. There is scope here to support low-car social housing using car-sharing in conjunction with public transport to provide transport accessibility.
Planning car-sharing in the city
Some local authorities in London have set out supplementary planning guidance, which sets out the expectations of the city planning administration for new developments in terms of car free development and car-sharing content. The location of new car-sharing infrastructure is influenced by demographics, population density and so on. A census analysis has been carried out to identify areas which would be most likely to generate customer support for new car-sharing stations.

(link to SPG)
(link to Criteria as defined by Smart Moves / LBSutton for new vehicle stations)

Land and property administration
City authorities often control and manage many sites and properties and are likely to have a separate administration which manages this. They may also technically own the highways. There are several opportunities here to support car-sharing:

- **Making land available for parking car-sharing vehicles:** There is scope for the administration to provide space both off-street and, where the legal framework permits this, on-street space dedicated to car-sharing. The allocation of space needs to relate to the needs identified in city plans for car-sharing.

- **Assembling land for parking car-sharing vehicles:** Where the development process makes available land for car-sharing cars to park, there may be a need to administer such land until it can be handed over to the car-sharing operator.

- **Administering car-sharing funds:** Where the development process has generated funds from developers in support of car-sharing infrastructure and set-up costs, there is likely to be a need to manage such funds in an effective way until they can be used for car-sharing purposes. (link to Chapter 10)

- **In selecting and supporting competent operators:** It may be in the interest of a city authority to limit the number of car-sharing operators, or to choose one preferred operator, which can manage the network of car parking spaces owned by the city and set aside for car-sharing use. The process of selecting a preferred operator may be through tender; contracts could for example be awarded for a period of 10 years.
Administering funds received through the development process

The London Borough of Sutton expects developers to fund nominated car-sharing operators directly as a result of planning agreements. The support lasts three to five years, after which it is expected that car-sharing operators will be financially secure. There is no administrative involvement by Sutton in this process although it does have an auditing role.

The London Borough of Southwark has secured substantial funds for traffic improvements, including the support of car-sharing, and will at some stage need to convert that funding into new sites, car-sharing memberships and other support.

Operational management

Municipalities employ large numbers of staff and it is not uncommon for a local authority to be among the biggest generators of local traffic. They therefore have a self-interest in promoting car-sharing and making it more attractive to their employees through the following:

- **Municipality staff membership:** The administration can support car-sharing by making car-sharing vehicles available to city staff instead of car pools. There are several models for this – cars might be hired on the same terms as private users or ‘block booked’ during office hours and available to other car-sharers at evenings, weekends and so on. This arrangement can work out to be financially advantageous to the local authority. ([link to Chapter 10](#))

- **Working with public transport operators:** The administration can encourage local public transport operators to link in with car-sharing operators and create advantages for users of both public transport and car-sharing. ([link to Chapter 12](#))

City administrations become car-sharing customers

Turin and Palermo Municipality as well as Sicily Region uses car-sharing vehicles on a daily basis from 8am to 5pm. This provides valuable support to the car-sharing operator.

In the London Borough of Sutton the local car-sharing operator has helped to support the use of the vehicle stations as private membership builds up (see left).

Publicity

Municipalities often have public relations or information sections that regularly communicate with the local population. The administration can:

- **Disseminate information:** This can include, for example, carrying information about news items relating to car-sharing, new sites or initiatives in its regular publications, such as newsletters, to all residents, businesses and websites.

- **Communicate with public transport operators:** It can encourage public transport operators to provide information on car-sharing.
City administration disseminates information on car-sharing
The London Boroughs of Sutton and Southwark distributed information to their households through regular newsletters.

Highways management and planning
It is common for municipalities to have responsibility for maintenance and construction of roads and car parks. Through these functions a city administration can lend support to car-sharing in several ways:

- **Car-sharing parking bays and stations**: The administration can plan for and lay out dedicated on-street car bays and ensure that there is adequate access to off-street car-sharing stations.

- **Enforcement**: The city can provide an enforcement regime that will prevent unauthorised use of both on- and off-street car-sharing bays. This is particularly important in busy inner city areas where there is always fierce competition for car parking space.

- **Car-sharing station infrastructure**: The administration can provide car station infrastructure such as information posts, and ensure a recognisable design for such stations throughout the city.

- **Signage**: It is important that there is clear signage directing people to car-sharing stations and that the stations themselves are signed in a uniform, easily recognisable manner. (link to Chapter 9)

Safeguarding parking for car-sharing
The Municipality of Turin allows free parking for car-sharing vehicles in the city centre. It also allows the chosen operator (CCC) to set up parking areas without paying any fee to the municipality.

The London Borough of Southwark is experimenting with Road Traffic Orders that ensure that car parking spaces for car-sharing are only available to designated car-sharing operators.
Creating a network of car-sharing stations

The map opposite of Turin, showing car-sharing stations, demonstrates what can be achieved in a relatively short period of time.

The Region de Brussels-Capitale together with the local public transport operator (STIB) and an NGO Taxistop introduced car-sharing with their chosen operator Cambio in June 2003. Within four months, seven stations were put in place with between two and three cars; 17 stations are planned by 2005.

Parking and access management

Municipalities will be responsible for setting the conditions for car parking in their area and enforcing it. Recently, London and several Norwegian cities have started to influence access to city centres through congestion charging mechanisms. Car-sharing vehicles could be helped in several ways:

- **Preferential car parking**: Parking charges for car-sharing vehicles in the city could be reduced or free. This could apply to multi-storey car parks as well as specially designated zones such as Controlled Parking Zones.

- **Access to congestion charging areas**: Preferential or reduced rates could apply to registered car-sharing vehicles and this could also apply to traffic control measures such as high occupancy rates. The congestion charging experiments in London and elsewhere have shown that the electronic systems could easily accommodate such a measure.

- **Enforcement**: Any such measures will need to be adequately monitored and enforced to avoid abuse, and this needs to be competently planned and executed.

- **Joint operations between car-sharing stations in other local authority areas**: In dense urban areas, with several administrations jointly managing the urban fabric, it is not inconceivable that there will be competing car-sharing operators. City municipalities will need to recognise this when making plans for parking of car-sharing vehicles.
Giving car-sharing vehicles parking and access advantages
The London Borough of Southwark provides car-sharing vehicles with a permit that allows parking in all Controlled Parking Zones in the borough.

The Greater London Authority exempts low emission vehicles (such as LPG or electric) from the £5 a day congestion charge.

The Municipalities of Turin and Palermo support car-sharing, allowing car-sharing vehicles access to the ZTL (Zona Traffico Limitato) and streets reserved for public transport, and to use lanes reserved for public transport.

Public transport operators
Public transport companies are key players in making car-sharing more successful. They are generally positive to car-sharing, which is seen as quasi public transport provision. There are several ways in which public transport companies can cooperate with city administrations and car-sharing operators to make car-sharing more successful. (link to Chapter 12)

Integrating car-sharing and public transport
Bremen has much experience with joint action with the local public transport operator ranging from the Bremer Karte, to joint publicity on trams and buses.

Brussels... [insert text]

Sutton has carried out a joint marketing exercise with the local rail company to encourage commuters to sign up for car-sharing membership.
6. How to tackle the legal issues

Introduction

In most countries car-sharing has developed within the existing legal framework.¹ It has therefore demonstrated that it can operate without needing special legal measures. However, since car-sharing creates benefits for both wider society and individuals, there are good reasons to amend existing laws to further stimulate growth and increase the gains. There are a number of areas where this can be done, for example introducing a legal definition of car-sharing, using a common road sign and reserving on-street parking bays. Other legal issues that affect car-sharing are the taxation of benefits for corporate members using cars off duty, development gain via conditions attached by the planning process, and congestion charging.

Legal definition of car-sharing

There is currently no national legally valid definition of car-sharing in any European country. Belgium may become the first to do this, as it is developing a legal definition, which for example will allow police to enforce reserved parking bays. Car-sharing has also recently been included in the new Belgian Highway Code, making it possible to use the term on signage for reserved parking bays.

Some organisations in other countries have tried to establish standards for what car-sharing is, but without legal status (for instance the German eco-label Blauer Engel – Blue Angel – or the definition proposed by the Swedish National Road Administration, the definition by ICS in Italy etc). These can help to create a common understanding of the car-sharing concept, and increase knowledge of the environmental benefits. They can also help to cultivate public support and promote the benefits of car-sharing schemes.

The ratification of a binding legal definition of car-sharing, valid in all EU countries, is probably the most important legal issue to resolve to ensure further expansion of car-sharing.

(See annex 6.1 and 6.2 for proposed definitions for Belgium and Sweden, and the German "Blue Angel" eco-label for car-sharing.)

Other legal issues to consider

Reserved on-street parking bays

On-street parking bays have numerous positive impacts for the concept of car-sharing as well as practical benefits for users and operators. They help to market a car-sharing scheme, especially if the parking bays are in central locations or at places where a number of people pass by. Locating parking bays next to taxis, public transport stops and bicycle parking can help to integrate car-sharing with other green modes of transport. Provision of this parking can be very important financially for a car-share operator, and also in turn to

¹ For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.
the users. It provides free advertising of the service and therefore subsidises marketing costs. This can be achieved using a minimal amount of public money.

Example of on-street parking provision
Italy has modified the national traffic regulations so that car-sharing can be considered a complementary service to public transport. This modification, together with a positive approach by local administrations, has made it possible to reserve on-street parking for car-sharing (the picture to the left is of Turin), as well as provide free access to car parks, restricted traffic zones and so on.

In Germany, on-street parking has only been provided in special circumstances, either through re-dedication of road space to non-public use, or designation as a ‘special use’ such as for demonstration/pilot project purposes.

Example of on-street parking provision
In Bremen this has been done through the concept of "Mobilpunkt", an area including public transport stop, car-sharing and taxi-station, bicycle parking and a digital information desk.
Example of on-street parking provision

In the UK, the department for transport has approved a law that makes on-street parking possible for car-sharing vehicles. A national sign is used which means that the bay is reserved for one specific vehicle, which is controlled by a permit that must be present in the car, with a permit number referring to the number on the sign. The sign is put up by the local boroughs by a so-called Traffic Management Order.

The examples in the boxes above demonstrate that on-street parking can be arranged in different ways, but the legal framework will often cause many difficulties. The complexity of the issue mainly stems from the lack of a clear definition of car-sharing. Most national traffic regulations are very rigid systems, and not easy to change, and this is also a barrier.

A common road sign

By establishing a national road sign, the concept of car-sharing can be further recognised as an important element of the transportation system. It can probably also speed up the process of providing certain benefits to car-sharing, for example reserved parking bays and so on.

Great Britain and Belgium are the only countries within the moses consortium who have a national, legally valid sign for on-street parking. Italy has a general standard for parking signs, even though some differences can be noted between different cities. There are also a few countries outside the moses consortium that have national signs that can be used, such as Finland and the Netherlands.

In most cases a national legal definition of car-sharing will be a prerequisite for a national road sign to be accepted. (link to Chapter 9)

In-company car-sharing can induce taxation of benefits

Many companies have a fleet of cars that are shared by their employees for on-duty trips, a concept called “in-company car-sharing”. In some countries, for instance Sweden and the UK, efforts have been made to let employees rent those cars during evenings and weekends so that the cars can be used more efficiently. This is by some tax authorities considered a benefit to the employees, which means that extra tax is put on such use, even if the employees pay for the usage. This situation can be viewed in two perspectives:
1. In-company car-sharing has many positive effects in terms of reduction of cars and mileage, especially if employees (and others) can use the cars in evenings and weekends. The concept is attractive to companies who do not have a car-sharing provider in their city or who do not want to mix with household clients. A change of the law would mean a boost for internal car-sharing and make the concept even more efficient.

2. In-company car-sharing is not the most effective kind of car-sharing, since it is only used within one company and therefore often lacks the possibilities to the scale effects as traditional car-sharing with an external operator. Further utilisation of the company fleet only reduces the market for the car-sharing business, which means a sub optimisation. If mixing with household users the concept can also induce insurance difficulties.

The problem of taxable benefit can be solved by opening up the car fleet at evenings and weekends to the public. Another way is to change the tax law, or the interpretation of it, so that there is no benefit involved if reasonable fees are paid for the usage. How to deal with this issue naturally depends on which of the two perspectives above you have; whether you believe in-company car-sharing as a good concept or if it is a sub-optimisation.

Developer contributions via the planning process
Introducing car-sharing in the land development process can be an effective way to reduce space for parking. In the moses project, the London site negotiated with developers to offer car-sharing to future tenants. By 2003, a total of 450 car-sharing memberships had been created via deals with developers.

Apart from the UK and Germany (see below), the principle of connecting the development process with facilitating car-sharing is something that hasn’t been practiced widely elsewhere. There is no reason why linking car-sharing provision with the granting of permission for new developments could not also be tested in other European cities.

Low-car or car-free housing
In Germany, some states have made special arrangements to provide a framework for low-car or car-free developments, for instance in Bremen Beginenhof (see picture) where the car-sharing station meant that underground parking could be reduced to a third of what it would have been. As in Great Britain, planning law in Germany provides the option of ‘urban development contracts’ that can contain special arrangements for the integration of car-sharing stations into developments. This kind of contract has also been used in Sweden (Hammarby Sjöstad, Stockholm) where the parking requirements where reduced and car-sharing introduced.
Congestion charges
London introduced congestion charging in February 2003. By Summer 2005, Stockholm will have begun to run a full scale test with congestion charging in the central area, lasting for 13 months. The attractiveness of car-sharing would probably increase if car-sharing cars were excluded from congestion charges, since it would raise their economic competitiveness compared with private cars (at least for cars stationed inside the charging zone). At the moment this is not the case in London, nor is it proposed for Stockholm. However, LEVs (Low Emission Vehicles) are exempt from the charge, which provides an ideal opportunity for car-share operators to exploit.
Annex 6.1 Belgium draft definition


Comment
This decree sets out to define the requirements for a car-sharing ‘card’ or ‘label’, to be displayed in shared cars. In doing so, it actually defines the requirements for a car-sharing system to be recognised as such. Only cars displaying the label will be allowed to park in dedicated parking bays on public ground (indicated by the traffic sign). This will allow the police to control the use of these spaces.

Translation of key passages:

Article 2 – Car-sharing card
2.1 The card can only be delivered to a car-sharing organisation disposing of minimum 3 vehicles and at least 1 vehicle per 40 members, and at least 10 members per vehicle.
2.2 The vehicles must be equipped with the most up-to-date safety and environmental technology for their class of vehicle. Vehicles must never be older than 4 years.
2.3 Each vehicle must be covered by an ‘omnium’ insurance, covering the maximum number of passengers.
2.4 The organisation and the users of the vehicles must be bound in a long-term relationship by a system of membership.
2.5 Cards or labels […] must conform to the model in annex 1.
2.6 The information on the card or label must be legible for an observer in front of the vehicle.
2.7 Copies of cards and labels are invalid.

Article 3 – Application for authorization
3.1 The application introduced by the organisation must contain the information set out in appendix 2 [apart from the information on the organisation, it requires a list of vehicles with full details, as well as a list of members with names and addresses].
3.2 The application must be addressed to the Federal Public Administration of Mobility and Transport.
3.3 The organisation will inform [this service] of the number of members and the full list of vehicles.
3.4 This list will be updated yearly by the organisation. The [Federal Service] can demand to be informed of any modification as to vehicles and membership.
ROYAL DECREE (draft 06.02.2003)

Comment
This decree is a recent update of the Highway Code, adding the notion of car-sharing. This being a penal code, it allows police to enforce the respect of car-sharing bays.

Translation of key passage relating to car-sharing
“car-sharing” [“véhicule partagé” in French, “autodelen” in Dutch] indicates car vehicles put at the disposal of members against payment for a limited duration of use according to contractual conditions determined by [the car-sharing organization], to the exclusion of car rental and leasing.

Annex 6.2 Swedish definition, as proposed by the National Road Administration

Definition
Car-sharing means that a number of persons share the use of one or more cars. Use of a car is booked beforehand, the user paying a fee based on the distance driven and the length of time the car was made use of. Although this is similar in some ways to traditional car rental, it differs in the possibility it provides of booking a car for short periods of time and in the rental agreement being made for an extended period of time, rather than each time a car is used. In addition, each household has its own set of keys, and cars are placed in the vicinity of where members live. In the case of company car-sharing, the keys and the cars are being readily available at the place of work. “Key” is here equal to smartcard or the like.

Comments to definition
There can be many different variations in how car-sharing is organized. This depends in part on who is in charge or bears responsibility (a cooperative, a private firm, a municipal government, or whatever). In addition, car-sharing organizations can be classified as being either open or closed. A closed car-sharing organization has a set of vehicles used by a limited group of persons, such as the employees of a firm or of a municipal authority. An open carsharing organization, in contrast, is one that in principle anyone can belong to. This is the case in the majority of Sweden's car-sharing cooperatives. Many different combinations of the forms of car-sharing organizations just described are possible.

Although the definition given above covers basically all forms of car-sharing presently found in Sweden, it is important that the concept be distinguished from traditional car rental.

The car-sharing concept as just described is very broad. It includes basically all forms of shared vehicle use regarded as car-sharing. If those engaged in car-sharing are to be provided special benefits, however, society should be able to demand that certain quality requirements be met. These requirements amount to expecting a car-sharing organization to act in accordance with the best interests of society. The exploitation of car-sharing
simply to take advantage of potential benefits should not occur. Having quality requirements should involve the possibility of these being revised as the scope and quality of car-sharing develops. The requirements should not be too strict initially, although the basic quality level expected should be made clear. A high degree of environmental sustainability and traffic safety should be aimed at.

**Quality requirements that are recommended**

1) An administrator; Responsibility for a car-sharing scheme is to be borne by an administrator, understood as being a legal entity (a corporation, a cooperative, a municipal authority, or the like).

2) A sufficient number of drivers; There should on the average be at least 6 drivers who make use of each vehicle belonging to a car-sharing organization. A general exemption from this requirement is made during the first year.

3) Adequate accounting practices; The administrator should use an accounting system which makes it possible to compile, for each user, a list indicating each use of a vehicle, the length of time it was used and the distance it was driven. It should also be possible to compile a list for each of the vehicles of the total distance it was driven in the course of a year.

4) Ownership of the vehicles; Each vehicle used in a car-sharing scheme is to be registered in the name of a legal entity (not necessarily the same as the administrator mentioned above).

5) Requirements placed on the vehicles
   - None of the vehicles should be more than 4 years old.
   - All of them should have at least a four-star Euro NCAP rating.

**Comments to quality requirements**

The quality requirements aim at ensuring that advantage can be taken of the benefits to society that car-sharing provides, allowing the potential societal gains to be optimized. How this can best be achieved is discussed below.

The major aim of presenting a definition of car-sharing presented here together with the quality requirements referred to is to encourage car-sharing. It is important that the cars involved be high in environmental sustainability and traffic safety, but the requirements should not be so stiff that large numbers of the presently existing car-sharing schemes would be unable to meet them. The requirement that the cars not be more than 4 years old means the environmental and traffic-safety performance of the cars clearly being better than that of cars in Sweden generally, a requirement that the cars of most car-sharing schemes in Sweden already meet.1 The requirement that all vehicles have at least a four-star Euro NCAP rating means car-sharing organizations' ensuring a very high level of traffic safety in their vehicles.

The requirements are also needed for clearly distinguishing car-sharing from "fictive carsharing" such as might be established for the sole purpose of taking advantage of special benefits that genuine car-sharing schemes should be eligible for. The requirement of the administrator of a car-sharing scheme being a legal entity (requirement 1) and of each vehicle being registered in the name of a legal entity (requirement 4) reduces the
risk of misuse. Requirement 2 also reduces the possibilities of registering car-sharing schemes that fail to live up to the goals implicit in the definition of them presented here.

The requirement of adequate accounting practices (requirement 3) ensures its being possible to follow up the use to which a car-sharing organization has been put, e.g. in terms of the number of users. Obtaining relevant statistics on car-sharing organizations on a regular basis also makes it possible to study their effectiveness.

**Annex 6.3 Criteria the German Eco-label “Blue Angel”**

- Access for everybody (driving license, credibility)
- 10 customers / vehicle at least
- Performance of operator
  - 24/7 reservation
  - 1 hour reservation
  - Hour rate not higher than 15% of day rate
  - Using costs: time & mileage
  - No free mileage
  - Car maintenance according to producers
- Fleet ecology
  - Emission according to EURO II / legal guideline 98/69/EG
  - 165 g CO2 per km
  - 1,0 g CO per km
  - 0,1 g HC per km
  - 0,08 g NOX per km
  - 73 db(A)
  - Diesel vehicles: EURO III
- Recommended: EMAS for car manufacturers (recycling concept; environmentally friendly materials)
7. Selecting the right technology

Introduction

Like private cars, car-sharing should provide high levels of reliability, comfort and flexibility. This includes:

- ease of use across all aspects;
- high availability of the service over a given area;
- high level of satisfaction of requests for cars;
- transparency in reporting and invoicing;
- easy payment options;
- safety and assistance during the use of the car;
- a professional service overall.

This can only be achieved by using a high quality, reliable technological system. This technology should ensure that users have all the advantages of a private car, linked to a professional service, which avoids complicated procedures for picking up and returning the car, paying for the service and so on.

What are the characteristics of a good technological system?

To be competitive, car-sharing must have limited costs, but nevertheless deliver a high-quality service. Technology can assist a car-sharing operator to be successful through helping them manage all the operations in a centralised way, with minimal need for staff. More sophisticated technologies are now available, which can help manage special fleets for companies and public administrations.

It is therefore important, especially when setting up a service, to make strategic technological choices and choose a high performance system which also pays attention to user needs. The system must be customer-friendly - flexible, clear and with help easily on hand if there are any problems.

How to build up a good technological system

This section describes the typical functions and design of a high-end integrated car-sharing technological system. This kind of system is always made up of the:

1. central system;
2. on-board equipment system;
3. communication system between the cars and the central system.

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1 For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.
The diagram below sets out a typical design for a car-sharing technological system.

**Central system**
The central system provides strategic management from the car-sharing operator’s point of view. It generally consists of an information system which can be built using different designs and solutions, for example:

- a single central system for each operator;
- a central system which gives services to different local operators using local equipment, connected via the web to the central system (cambio’s solution);
- a network of local independent systems for single operators, connected to each other and to a single central reservation and user-assistance system (such as Italian ICS’s solution).

Although the various technological solutions use different organisational models and have varying functionalities, they all need to perform the following:

- reservation management and its related functions (modification, cancellation and so on), often supported by web access for users;
- tariff management;
- fleet and parking places management;
- service reporting to users, invoicing and penalties management;
- customer database and preferences;
- commercial database;
- support to operators to manage general users’ requirements and procedures (computer assisted interface for operators to improve the quality of reservation, assistance, emergency management);
- reports on general service and related statistics;
‘service’ functions such as diagnostic system administration and configuration and so on.

**On-board equipment system**

Each car is equipped with an on-board computer (with keyboard and display) and a system for allowing users to access the car. This technology needs to be very customer-friendly. The main functions performed by this sub-system are:

- access and release of the car;
- security (engine lock/unlock, windows and so on);
- report of the use of the vehicle (distance travelled and time);
- management of the emergency and assistance calls.

The sequence of pictures below illustrates the process for accessing a car using car-sharing technology.

**Unlocking the car**
The easiest way to manage the access to/unlocking of the car is through a personal card (generally a contactless chip card).

**Before driving the car away**
Once users have unlocked and entered the car, they enter a PIN number or other security mechanism to identify themselves. The technology then records the distance travelled and the time the car has been used.

When an on-board computer is not present, a limited access function is provided by automated lockers, where the car is parked, which contain the keys. In this case the data collection (kilometres and time) is made by the user by hand. The new generation of so called ‘electronic lockers’ are able to communicate with the central booking system and send driving date via electronic touch keys. Voice communication is also possible. Both systems have advantages and drawbacks, depending on what you intend to implement in your city.
Advantages of Key Manager system:
- this system is more economically than on-board systems as soon as you got five or more cars at one location.
- clustering of reservations (occupancy of the fleet and the allocation ratio)
- “Instant access” through direct connection to the call centre
- Car exchange: cars can be switched much more easily from one location to another
- Solid data communication through connection to the traditional telephone network

Advantages of stand-alone system:
- Trip mileage data are transferred directly via SMS towards your back-office. No key fob transponder chip is required
- direct phone call from inside the car towards the call centre. By this the customer can prolong or cancel his reservation by a push on the button on the on-board computer.

Communication system between the cars and the central system
The on-board computers are connected through a radio frequency network for mobile communications (typically GSM/GPRS technology) to a central system which manages all the operations. The connection should allow for both data and voice transmission.

Choosing what technology to buy
The general moses recommendation regarding technologies is: ‘don’t reinvent the wheel’. Any skilled programmer can design software that would assign car reservations, register trips and create invoices. However, car-sharing has become a very sophisticated business and the software products available for reserving cars, customer administration, fleet management, trip calculation and invoicing are the result of many years of experience resolving car-sharing challenges. It is now possible to either buy this technology or enter into a service-based agreement; you can select the one that is most appropriate to your needs.

Suppliers have taken two main kinds of approach:
- an integrated supply of on-board equipment and central software sold directly to a car-sharing operator, or on a basis of a contract for operational assistance;
- a separate supply of on-board equipment sold to the operator and a contract for operational assistance for the services provided by the central software.

The market for car-sharing technological systems is at its early stages and is limited; so far different systems have only been applied on a geographic basis. However, thanks mainly to the operator cambio, a single technology is being launched throughout Europe. With a growing interest in car-sharing, we can now start to envisage a real market for car-sharing technological systems.

When choosing a product, special attention should be paid to:
- the reliability of the on-board equipment and the technology that users will be interacting with;
- the ease of use from the customer’s point of view;
- the flexibility and expandability of the system;
the range of different uses of the software.

Related to this last item, many aspects should be examined according to the different management models and procedures adopted by single car-sharing operators (link to chapter 8).

Key questions to consider
These are some of the simple questions which potential buyers need to consider:

- Does the reservation software and the overall system allow for processing of modern reservation requirements such as open-ended, advanced bookings, one way, last minute and so on?
- Does the reservation software provide an information system for the location of cars and the specifics of each vehicle?
- Does the reservation software include an automated complaint workflow module (automatic forwarding of complaints to management and fleet staff members in charge)?
- Is there a good interface between the reservation software, the communication software and the on-board equipment?
- Does the software offer optimised clustering of reservations?
- Does the software include an online reservation module?
- Does the software offer separate administration of car maintenance reservations?
- Is the mileage/time registration accurate and does the software record the trip data and references to allow for checks of the information?
- Does the software allow for different forms of payment (direct invoicing on bank accounts, prepaid cards, credit cards, and so on)?
- Does the invoicing software provide the option for the administration of different tariffs and automated tariff change procedures?
- Does the invoicing software include special functions such as 'best price' or 'single invoice'?
- Does the software produce good and exhaustive statistical data about the service?
- Does the fleet management software include the administration of recurring maintenance tasks?
- Does the fleet management software allow for the administration of car access technology items and car-sharing location items and information?
- Does the software contain special features for the management of dedicated fleets for companies or public administrations?
8. Providing a customer-focused car-sharing service

Introduction

This chapter is dedicated to both people who would like to set up a car-sharing service, and those who are already existing operators.\(^1\) It focuses on improving the quality of the overall management of a car-sharing service, with an emphasis on promoting good customer relations.

For customers, a high quality service means that everything should function without problems. Yet we know from practice that with car-sharing, as with any other business, not everything runs the way it is supposed to. When things go wrong, customers can be upset. In the worst case scenarios, a series of errors may mean that a customer cancels their membership. It is therefore wise to seek regular feedback by carrying out an annual survey of customer satisfaction, although many customers do complain about an unsatisfactory situation directly after it occurs. These complaints are valuable and should be taken seriously as they point to areas of quality management which need improving.

What customers dislike – a short collection of possible complaints

The table below illustrates a collection of possible complaints and indicates reference numbers to the paragraphs in the following section which set out suggested responses and ways of avoiding future complaints.

<table>
<thead>
<tr>
<th>Examples</th>
<th>See paragraph...</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Complaints about the cars</strong></td>
<td></td>
</tr>
<tr>
<td>‘The car is dirty’</td>
<td>2.1, 2.3, 2.5, 3</td>
</tr>
<tr>
<td>‘The car is damaged’</td>
<td>2.1, 2.3, 2.5, 3</td>
</tr>
<tr>
<td>‘The car needs repair’</td>
<td>1.1, 2.1, 2.5, 3</td>
</tr>
<tr>
<td>‘The car is missing’</td>
<td>1.2, 1.4, 2.1, 2.5</td>
</tr>
<tr>
<td>‘Don’t know how to drive/open/lock this car’</td>
<td>1.4, 2.1, 2.2, 3</td>
</tr>
<tr>
<td><strong>Complaints on locations</strong></td>
<td></td>
</tr>
<tr>
<td>‘The location is soiled’</td>
<td>1.3, 2.1, 2.3, 2.5</td>
</tr>
<tr>
<td>‘The location is dark/scary’</td>
<td>1.3, 2.1</td>
</tr>
<tr>
<td>‘The location is hard to find’</td>
<td>1.3, 2.1, 3</td>
</tr>
<tr>
<td>‘The location is hard to access’</td>
<td>1.3, 2.1</td>
</tr>
<tr>
<td>‘The parking space is occupied’</td>
<td>1.3, 2.1, 2.3, 2.5</td>
</tr>
<tr>
<td><strong>Complaints on car access technology</strong></td>
<td></td>
</tr>
<tr>
<td>‘The car/key locker does not open’</td>
<td>1.2, 1.4, 2.1, 2.4, 2.5</td>
</tr>
<tr>
<td>‘The key is missing’</td>
<td>1.2, 1.4, 2.1, 2.4, 2.5</td>
</tr>
</tbody>
</table>

\(^1\) For the benefit of readers from the UK, throughout *Keys to car-sharing* we use the term car-sharing for what in the UK is generally known as car clubs.

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*The moses guide: Keys to car-sharing  
Chapter 8: Providing a customer-focused car-sharing service*
Complaints on the invoice

<table>
<thead>
<tr>
<th>Complaint</th>
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<tbody>
<tr>
<td>‘Wrong mileage amount’</td>
<td>1.4, 2.2</td>
</tr>
<tr>
<td>‘Wrong reservation times (too many hours)’</td>
<td>1.4, 2.2</td>
</tr>
<tr>
<td>‘Cancellation not registered’</td>
<td>1.4, 2.2</td>
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<tr>
<td>‘Wrong tariff applied’</td>
<td>1.4, 2.2, 3</td>
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Complaints on product

<table>
<thead>
<tr>
<th>Complaint</th>
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<tbody>
<tr>
<td>‘Why don’t you offer a ... (sports car, van, motorbike)?’</td>
<td>2.1, 2.2, 3</td>
</tr>
<tr>
<td>‘Your prices are too high’</td>
<td>2.1, 2.2, 3</td>
</tr>
<tr>
<td>‘The insurance excess is too high’</td>
<td>2.1, 2.2, 3</td>
</tr>
<tr>
<td>‘I never get the car I want’</td>
<td>2.1, 2.2, 3</td>
</tr>
</tbody>
</table>

Complaints on the reservation service

<table>
<thead>
<tr>
<th>Complaint</th>
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<tbody>
<tr>
<td>‘I had to wait for a long time in the telephone queue’</td>
<td>1.4, 2.1</td>
</tr>
<tr>
<td>‘Your agent could not tell me where the location was’</td>
<td>1.4, 2.1</td>
</tr>
<tr>
<td>‘Your agent was rude’</td>
<td>2.1</td>
</tr>
<tr>
<td>‘Your online reservation tool is too complicated’</td>
<td>1.4</td>
</tr>
<tr>
<td>‘Your online reservation tool is too slow’</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Keep your customers satisfied – keys for successful quality management

1. ‘Hardware’ – things you can purchase
Although most of the items referred to below can already be purchased or rented on the open market, the crucial point for quality management is to make the right choice in order to avoid complaints in the future.

1.1 Reliable car types
Of course, one main criterion for the choice of a car is its price. However, the purchase price is just one significant element of the overall cost. Keep in mind that expenses for breakdowns and repair will cost twice: as an item on your workshop’s invoice and as a negative experience for a customer. A simple but effective way to select the right types of car is to find out which ones are preferred by car-sharing companies that have been successfully operating for more than 10 years. Make sure that your car access technology provider has experience of installing their on-board computers into the type of car you are interested in.

1.2 Reliable car access technology
Accessing a car-sharing car – in most cases done by smart card – is an important interface between the customer and the car. It should function seamlessly. However, car-sharing practice reveals that many customer complaints arise from this part of the process. The reasons why a person might complain about a car that doesn’t open or a key that is missing are manifold – and in the majority of cases the technology is not to blame. Nonetheless, there are several hidden tricks in the interaction between the reservation software, message server, telecommunications provider and on-board computer (or intelligent key locker) that might cause a variety of frustrating situations for your customer.
Because the number of providers of car access products is very small, we recommend getting in touch with companies that use these products and asking them whether they are satisfied. Developing your own access technology requires a significant investment and technological know-how, as well as years of troubleshooting. Collaborating with an existing supplier and adapting their proven products to your local needs is a clever alternative; this way you can have a professional service up and running in a very short time (the implementation of car-sharing in Belgium is a good example of such an approach). (link to Chapter 3)

1.3 Appropriate locations
In most countries, kerbside parking or comparable parking spaces dedicated for car-sharing is difficult to implement and sometimes impossible. Car-sharing companies therefore need to find adequately sized locations on privately owned sites. These locations should be situated in places that are easy to access, safe and well-lit at night. The company’s fleet staff should carry out regular cleaning to keep it tidy. The parking spaces should be equipped with noticeboards, barriers, gates, bollards and so on in order to avoid people parking there who shouldn’t. Customers should be given a precise description of how to get to the location. This should be supplied in the customer’s manual, on the Internet or by telephone if customers call the reservation call centre.

1.4 Reliable and tested software
Car-sharing has become a very sophisticated business and the software products available for taking reservations, customer administration, fleet management, trip calculation and invoicing are based on over 10 years of experience of resolving car-sharing challenges. When purchasing software you should consider the following (link to chapter 7):

- Does the reservation software and the overall system allow for processing of modern reservation requirements such as open-ended, advanced, one way and last minute bookings?
- Does the reservation software provide an information system for the location of cars and the specifics of each vehicle?
- Does the reservation software include an automated complaint workflow module (automatic forwarding of complaints to back office and fleet staff members in charge)?
- Is there a good interface between the reservation software, the communication software and the on-board equipment?
- Does the software offer optimised clustering of reservations?
- Does the software include an online reservation module?
- Does the software offer separate administration of car maintenance reservations?
- Is the mileage/time registration accurate and does the software record the trip data and references to allow for checks of the information?
- Does the software allow for different forms of payment (direct invoicing on bank accounts, prepaid cards, credit cards, and so on)?
- Does the invoicing software provide the option for the administration of different tariffs and automated tariff change procedures?
- Does the invoicing software include special functions such as ‘best price’ or ‘single invoice’?
- Does the software produce good and exhaustive statistical data about the service?
• Does the fleet management software include the administration of recurring maintenance tasks?
• Does the fleet management software allow for the administration of car access technology items and car-sharing location items and information?
• Does the software contain special features for the management of dedicated fleets for companies or public administrations?

2. Your staff - a quality car-sharing service depends on human beings!
The right technology and cars will help to ensure a seamless functioning of your car-sharing operations. However, the best cars and the best technology are futile investments if your employees are ignorant of the importance of customer care and quality management.

2.1 Call centre staff
The only regular, direct contact of customers with your staff will be when they telephone the call centre to make a reservation. A customer's perception of your company will mainly depend on the quality and availability of cars, and on whether they were attended to politely and rapidly when carrying out their reservation, extension or cancellation. Although a 24 hour car-sharing call centre requires the administration of approximately 500 cars to be economically feasible, it is wise to operate this service, at a minimum, during the daytime on weekdays by your own staff members (although please note: this applies only in countries where no specific car-sharing call centres are available).

If the call centre service is provided by your own staff, make sure they are well trained and avoid frequent personnel changes. Highly skilled call centre employees are quite important for issues that arise in relation to reserving a car, such as proposing alternative locations or cars, providing information on locations, public transport connections and so on. It is even more important when dealing with complaints. Many problems can be solved directly by a well-trained call centre agent. In combination with intelligent reservation software, they can ensure that many complaints are avoided in advance. Since customers are used to talking to call centre agents, they are more likely to mention general criticisms to them and not, for example, to the front office. It is therefore quite important that your agents report these comments to the manager in charge. Customer feedback is one of the main ways you can improve your service.

2.2 Front office staff
Your front office employees will deal with any question or trouble that might occur. As a result, these employees should have both broad and in-depth knowledge of your car-sharing business. Front office staff should also report persistent complaints and criticism to the manager in charge.

2.3 Effective management of car maintenance
Make sure your cars are frequently cleaned and checked, and ensure that your fleet management software helps you to do this. It is a well known phenomenon that, once a car becomes dirty, the next customer is even less likely to be clean and tidy. It is indispensable that each customer not only gets a clean and impeccably serviced car - they also have to be aware of the fact that it is quite likely the car will be cleaned up again after their trip. Just as for car rental, they need to know that any soiling or damage they commit will be detected at once. If, however, a legitimate complaint is passed on to the
car maintenance staff, your employees should be satisfactorily skilled to give useful troubleshooting hints or to quickly solve the problem on-site.

2.4 Highly trained staff for technology troubleshooting
Modern car-sharing is a very technology-based service. Your company should therefore have at least one technology/IT expert at its disposal. Many malfunctions of the service can be caused by technological failure and your staff should be able to detect such failure in the IT network as well as in the telecommunications area, or within the car access technology. Before choosing a car access technology product, ask existing car-sharing companies whether their access technology provider is cooperating satisfactorily in terms of joint troubleshooting measures.

2.5 Quick complaint management
If you have chosen software that provides automated complaint management workflow (for example from call centre to fleet management), then you have already made an important step towards quality management. But, again, your software can only be as good as its users. Make sure the staff members of your different departments are cooperating in a quick, knowledgeable and seamless manner.

3. Your product – it’s up to you
Of course, the design of your car-sharing product will very much depend on your own circumstances, local and national legal frameworks and so on. However it is worth summarising with some general suggestions:

- Provide a decentralised network of locations, but not too many.
- Provide different types of cars, but not too many.
- Provide different tariffs, but not too many.
- Provide complete car insurance, but not without excess.
- Don’t count too much on your customers’ sense of responsibility: apply penalties – as low as possible, but as high as necessary.
- Apply attractive cancellation conditions.
- Try to combine a sufficient occupancy of the fleet with necessary availability.
9. How to set up a car-sharing station

Introduction

This chapter sets out the detailed considerations that apply when identifying and designing car-sharing stations. While most images in this chapter are from demonstration sites, some are still only at the design stage.

Choosing the location of a car-sharing station

In Chapter 4 we set out the general characteristics which we believe determine whether car-sharing operations will succeed at a city-wide level. Here we highlight the localised criteria which point to whether a station could be a success or not. The diagram below highlights these factors: they include pressure for parking spaces, good public transport links, local commercial and amenity interests, social and community characteristics, and the character of the street scene and local environment.

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1 For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.
Finding a design language for car-sharing operations

Having identified appropriate locations for car-sharing stations there is a need to design the stations, both on- and off-street, in such a way that they become recognisable as a form of public transport. There are many good examples of symbols or unifying designs which have achieved this in the past. The question is whether each city creates its own designs or whether some national or international joint approach will be of greater benefit.

Creating a design presence for car-sharing stations

There are many opportunities for creating a bigger presence for car-sharing stations. This could be as part of new commercial or housing developments, or for example when designing a new bus station. Integrating the two will provide an ideal opportunity for making any change of mode of transport more convenient for customers.
Designing off-street car-sharing stations

Off-street stations provide the greatest opportunities for design innovation. These locations are also not normally hampered by the restrictions that relate to highways land. Design considerations include shelter, signage and information kiosks, as well as:

- cycle parking: this helps members to access the site more easily;
- storage: secure storage for child car seats, cycle racks and so on;
- shelter/charging points: this may be especially relevant where electric vehicles require regular recharging;
- advertising: to market and advertise the site as well as raise revenue;
- lighting: this is critical for to maintain the security and safety of the site and to increase awareness of the site as a 24 hour facility;
- public transport information: this could include timetable information relating to other forms of public transport in the vicinity;
- Internet access: where providers exist this presents an opportunity to directly access local information, booking systems, timetables and methods of payment.

Off-street car-sharing stations

These present an opportunity to create safe and secure stations, which are attractive and provide a positive image for the user. The picture to the left is a site in Sutton which has been reclaimed from a car park, fenced off and dedicated to car-sharing. Note the protective barrier, the I+ (information point) and the advertising banner.

The photographs above illustrate two sites from Wallonia, both of which have secured access.

On the left an example from Palermo.
Designing on-street car-sharing stations

These are likely to be more limited in design scope, where they are permissible, but it is still possible to design them well, for example in a similar way to bus stops and designated areas for parking. Signage is likely to be subject to a number of rules; for example any equipment placed on adjacent pavements will be subject to space restrictions. One way of highlighting the stations is by surfacing the spaces in a different colour.

On-street car-sharing stations
Creating a presence for on-street parking spaces can be difficult. The pictures to the left illustrate examples from Southwark, Torino and Palermo. The Southwark site is marked by coloured tarmac and banners advertising the presence of the site. This is not a permanent feature and more thought needs to be given to how best an on-street site can be clearly marked, almost in the same fashion as a sheltered bus stop.

The Torino and Palermo sites (above and left) show new street furniture signposting the site and a clear marking of the reserved car-sharing spaces.

Security and access of stations

Security is an essential part of a new car-sharing station’s design. Several options to increase security have been tested during the moses project. These include:
• **Closed Circuit Television (CCTV):** this is a sensible choice in areas vulnerable to vandalism (CCTV, although popular in the UK, is not a common feature in other European countries).

• **Access control via barriers:** secure access via a lifting arm operated by a transponder installed in each car guarantees availability of spaces.

• **Enforcement:** Where parking is on-street, tight enforcement will be necessary to guarantee that car-sharing users can return their cars to allocated spaces. So far, in the UK, this has only been possible in Controlled Parking Zones, where spaces are clearly identified. The situation requires a clear definition of car-sharing and an explicit understanding of which operator is entitled to use which car bays.

### Signage

This is as yet an underdeveloped area with a number of different signs existing in the various car-sharing cities. A European sign, or even coherent national symbols, would be welcome. The box below illustrates a range of signs that the various moses partners have used.
The moses guide: Keys to car-sharing
Chapter 9: How to set up a car-sharing station
10. What about the money? Financial issues for running a car-sharing business

Introduction

What is the financial basis for running a successful car-sharing business, and what should operators consider before starting out in what is still an innovative business area? What are the right questions to ask and what are the answers which will make operators’ lives easier?

The success of a car-sharing business is highly dependent on local conditions. In this chapter we will focus on the broad questions that you need to ask before setting up a car-sharing business, which include:

- What is the market potential in your city/region?
- Who are the main target groups?
- Do you want to start big or grow slowly in stages?
- Are you aware of the products that already exist like booking software, car access technology and so on?
- What financial/in-kind support can local authorities offer?
- What is the right mix of individual and corporate users?
- How are mobility demands generally satisfied in your city/region?
- What information exists about modal split and transport preferences?
- What are the key economic factors to consider when deciding where to locate your new service?
- What contacts exist for potential collaboration?

You should consider all these questions in detail as part of your background for preparing a business plan. The following two sections describe some of the key indicators which should lead you through the maze of relevant financial issues. They reflect the lessons of those with more than 10 years of experience running car-sharing businesses. The specific issues for municipalities to consider and the potential benefits for them of investing in car-sharing are described in Annex 10.1.

What are the key elements of a financial plan to set up a car-sharing business?

These include the following:

- Attract individual and corporate sector customers to maximise the use and running of the vehicles. You should try to achieve at least a 35-40% use rate per vehicle in your fleet, which means 8-10 hours of use per car per day by customers.

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1 For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.
• You should be aware that, for a customer, the point at which car-sharing is cheaper than a private car is around 10,000-12,000km/year travel by car (see Annex 10.2 for own calculation).

• You should build your marketing around whether you want to persuade people to replace their first or second car. Almost 70% of car-sharers haven’t owned a car before. Depending on the region, every shared vehicle replaces four to six private cars provided your service reaches a significant size (more than 800 users with an average of at least 20 users per car).

• Your car locations should be close to your customers. This can reduce maintenance costs as customers may be more likely to observe and take responsibility for the cars. You should also have bigger locations with more cars to reduce servicing costs.

• You should ensure that at least 90% of ‘first choice’ bookings are satisfied. In-depth data evaluations are necessary to find the right mix of cars per location. You should respond to changes in demand through highly flexible systems for shifting cars from one location to another.

• Booking should be possible 24 hours a day. Depending on the size of your organisation you have to choose between having your own call centre or using external services. Be aware that your customers’ experiences of using the booking centre will significantly influence their views of the quality of the whole service. Your booking service should also be Internet-based to reduce personnel costs (in any case, more than 30% of all bookings are made through the Internet, in some cases this can be more than 60%). You can use other call centres to reduce personnel costs out of hours.

**Creating a business plan**

We have evaluated a selection of car-sharing surveys from the last few years and come up with the following key indicators to help potential operators create a business plan:

• The lower the number of customers, the lower the rate of customers per vehicle. To put this into context: <500 = 10-15 customers/vehicle; >500<1,000 = 20 customers/vehicle; >1,000<2,000 = 25 customers/vehicle; >2,000<3,000 = 30-35 customers/vehicle.

• To achieve a decentralised approach and satisfy booking demands you need more locations with a small number of vehicles at each. You can only have large car-sharing stations if you have more customers; these will then be cheaper to equip and maintain. The average distance to car-sharing stations should be less than 15 minutes walk/cycle, and they should also be close to public transport stops. (link to Chapter 9)

• The same ratio is valid for the number of staff you require. With less than 1,000 users your ratio is around 1 employee/200 customers; with more than 2,000 users you only need 1 employee/300 customers.
• Your personnel costs should be 20-30% of turnover.²

• Vehicle costs are between 30-40% of turnover. The decision about whether to lease or buy the fleet depends on the daily interest rate of banks as well as your existing capital.

• Turnover per customer should be more than €500/year. You should avoid ‘sleeping’ customers (that is, customers who are members but don’t hire a car regularly). The structure of your tariff system will depend on the different user profiles, however the lower the number of different tariffs, the easier it is for you to administer.

• At the beginning you should invest at least 10% of your budget in marketing. Over time you can try to create synergies with potential partners (for example, local public transport operators; (link to Chapter 12), and higher rates of direct client contact.

The allocation of costs in a well-run business is shown in the diagram below. It is obvious that in the starting phase of a new service you should spend much more than 3% of the budget for advertising and marketing activities to increase the number of users, because the best promoter of car-sharing services is a satisfied customer. This is the reason why operators should invest in maximising the convenience to customers. (link to Chapter 1)

² The so-called grass-roots organisations which started in the late 1980s and 1990s began with enthusiasm and as not-for-profit organisations, often as neighbourhood-oriented services or as a club. People worked voluntarily with just small allowances for expenses.
What are our key recommendations?

- Think big if you want to create business.
- Create a balanced mix of corporate and individual users.
- Invest in marketing and customers as they are the best promoter of your service.
- Look for the support of local authorities.
- Cooperate with local public transport operators.
- Use existing products which already have a proven record – don’t reinvent the wheel.
Annex 10.1: The financial perspective for local authorities

Many surveys show that the typical private car is in use, on average, less than one hour a day. For the remaining 23 hours it is just consuming parking space. But space is one of the assets of the urban environment which is in short supply. To tackle the politically sensitive problem of inner city parking, many communities have invested heavily in neighbourhood parking garages. But this is rather costly and may cause additional transport problems. Garages are also quite often ugly constructions, and do not contribute positively to the urban landscape.

Car-sharing is an alternative which helps to regain street space. (link to Chapter 2) Bremen provides a good example of how public money can be saved through car-sharing. The car-share service cambio now has 3,150 users (as at Spring 2004) and as a result of this the number of cars in the city has been reduced by approximately 700, which is equivalent to more than three kilometres of street space. Another way of reducing the number of street parking places by 700 could have been to install garages, but this would have cost Bremen at least €7-10 million.3

There are also the external benefits of car-sharing through changes in transport patterns. In Bremen, the reduction of private car use through modal shift is calculated to be about five million kilometres per year, which is a direct reduction in carbon dioxide emissions of more than 900 tonnes per year.

The financial perspective for public transport operators

Bremen has a history of cooperation between the public transport operator and the car-share provider. In June 1998 Bremer Straßenbahn AG (BSAG) and StadtAuto Bremen launched the ‘Bremer Karte plus AutoCard’, an annual season ticket which includes access to car-sharing at an attractive price. A survey by the University of Bremen has shown that the mileage travelled on public transport by car-sharers has increased on average from 3,534km to 3,704km per person – an annual increase of 170 kilometres; 8.5% of car owners got rid of their car, and 26% chose car-sharing instead of purchasing a car.

There are more than 3,100 car-sharers in Bremen and almost one third have chosen the combined public transport season ticket. The figures also indicate a shift from monthly season tickets to annual season tickets, up from 52% to 78%. This shift results in an obvious financial benefit for the public transport operator which receives a gain of about €148 per change from monthly season tickets to annual tickets. With about 1,000 users of the combined offer, and a shift of 26%, this provides around €38,500 per year in extra revenue for the public transport operator.

In addition, there are other benefits for public transport operators that are more difficult to quantify financially. For example, car-sharing customers often use public transport at off-peak times, when every additional passenger is welcome as they contribute to a kind of informal surveillance and their presence increases security. This in turn makes public transport safer and more attractive.

3 This is based on the official calculations for costs of parking facilities in different zones of the cities. In the inner city, the costs are calculated at €20,450 per parking space, in the fringes of the inner city at €12,680 per parking space (Erlass zur Ablösung von Stellplatzverpflichtungen, 2003) - this has been adopted by the Bremen Parliament as part of the building regulations.
So, for public transport operators, car-sharing customers should be an important focus of customer relations management and marketing.
Annex 10.2: How to calculate your own expenses

Earlier in this chapter we noted the comparison between the costs of a private car and those of car-sharing. The difference in these costs has been calculated using software specifically developed for this purpose. Costs have been calculated for:

- exclusive use of a private car;
- exclusive use of a car-sharing car belonging to the same category of the private car considered;
- mixed use of a car-sharing car belonging to the same category of the private car considered and public transport.

The costs have been calculated using the following formulas:

\[
C_{\text{VP}} = A + I + C_A + C_P + (C_c + C_m) \cdot \text{km}_{\text{anno}}
\]

\[
C_{\text{CS}} = Q_A + T_{\text{km}} \cdot (1 - R_P) \cdot \text{km}_{\text{anno}} + T_h \cdot (1 - R_P) \cdot R_{\text{hkm}} \cdot \text{km}_{\text{anno}}
\]

\[
C_{\text{CSTP}} = Q_A + T_{\text{km}} \cdot (1 - R_P) \cdot \text{km}_{\text{auto}} \cdot \text{km}_{\text{anno}} + T_h \cdot (1 - R_P) \cdot \text{km}_{\text{auto}} \cdot R_{\text{hkm}} \cdot \text{km}_{\text{anno}} + C_{\text{TP}}
\]

where:

- $C_{\text{VP}}$ [€/year] = annual cost of the private vehicle;
- $C_{\text{CS}}$ [€/year] = annual cost of the car-sharing vehicle (exclusive use of car-sharing);
- $C_{\text{CSTP}}$ [€/year] = annual cost of the mixed use of car-sharing vehicle and public transport;
- $\text{km}_{\text{anno}}$ [km] = number of kilometres covered during the year.

The cost parameters appearing in the formulas are the following:

- $A$ [€/year] = amortization cost of the car, it is function of the selected car and of the number of kilometres covered in one year;
- $I$ [€/year] = ownership tax, it is function of the power of the selected car;
- $C_A$ [€/year] = annual cost of insurance, function of the selected car;
- $C_P$ [€/year] = annual cost for parking or garage renting;
- $C_C$ [€/km] = fuel cost, it is function of the kind of fuel and of the selected car consumption;
- $C_M$ [€/km] = maintenance cost, it is function of the selected car;
- $Q_A$ [€/year] = car-sharing annual fee;
- $T_{\text{km}}$ [€/km] = kilometric fare of car-sharing service, it is function of the selected car;
- $R_P$ [p.u.] = reduction of the annual distance covered using car-sharing;
- $T_h$ [€/hour] = hourly fare of the car-sharing service, it is function of the selected car;
- $R_{\text{hkm}}$ [hour/km] = ratio between the travel time and the kilometres really covered;
- $\text{km}_{\text{auto}}$ [p.u.] = share of the travelled kilometres which have been covered by car in case of mixed use of car-sharing and public transport;
- $C_{\text{TP}}$ [€/year] = annual cost of the public transport (annual subscription cost).

The data use a 2001 baseline and are based on Italian figures. The amortization cost of the vehicle has been evaluated as a function of the technical life of the car, estimated to be 14 years and 140,000 km.
The parameters that have been used which aren’t a function of the selected car had the following values:

- \( R_p \) [p.u.] (reduction of the annual distance covered using car-sharing) = 0;
- \( R_{hk} \) [hour/km] (ratio between the travel time and the kilometres really covered) = \( \frac{1}{9} \);
- \( k_{\text{Auto}} \) [p.u.] (share of the travelled kilometres which have been covered by car in case of mixed use of car-sharing and public transport) = 0.7;
- \( C_{TP} \) [€/year] (annual subscription cost of public transport) = 185.92.

The car-sharing costs have been evaluated as follows:

- annual fee: €129.11;
- the variable costs have been calculated according to the fare system listed below:

<table>
<thead>
<tr>
<th>Category</th>
<th>Kilometric fare [€/km]</th>
<th>Time fare [€/h]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1 (micro cars)</td>
<td>0.28</td>
<td>1.29</td>
</tr>
<tr>
<td>Category 2 (economy and little cars)</td>
<td>0.31</td>
<td>1.45</td>
</tr>
<tr>
<td>Category 3 (medium, station wagon and multi-purpose cars)</td>
<td>0.34</td>
<td>1.55</td>
</tr>
</tbody>
</table>

The results, summarised in the following table, indicate that the convenience of car-sharing is strictly related to the amount a car is used (in terms of km/year driven), and that the convenience threshold is a function of the car category and the kind of car (petrol or diesel).
11. How to raise awareness about car-sharing

Introduction

This chapter examines the problem of low awareness of car-sharing and how this can be overcome through targeted information for specific user groups.¹

Raising awareness

There is low public awareness about the concept of car-sharing. Even in Germany – where car-sharing has been available since 1990 – no more than 15-18% of the population have heard of it, and only about 5% can explain more precisely what car-sharing is.

If you want to develop car-sharing in your city or country you have to raise the general awareness of this innovative service – and of course you have to convince potential customers that car-sharing is worth trying. The best way to do this is to tailor publicity to reflect the interests of your target groups and to promote positive messages.

Defining your target groups

Your target groups are likely to be:

- politicians and decision makers;
- potential or existing partners (for example public transport operators, developers);
- potential customers.

Politicians and decision makers

The interests of politicians are of course usually different from potential customers. They are more interested in the politically relevant impacts of car-sharing on transport and the urban environment. The key point for them is that car-sharing reduces the number of cars which potentially relieves urban parking problems and reclaims street space for other purposes. The financial consequences of this shift are also important.

Key message for politicians

This poster illustrates the key message of interest to politicians: car-sharing helps to regain street space and is therefore a policy they should support and develop.

¹ For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.
Partners (for example public transport operators, developers)
The specific interest of car-sharing partners is usually economic. Developers are interested in reducing the demand for parking. Public transport operators want to promote their services and benefit from integration with car-sharing schemes. (link to Chapter 12) In both cases, a basic understanding of how car-sharing works is necessary, and positive real life examples may help to persuade them of the benefits.

Potential customers
Car-sharing is in competition with privately owned cars. Car manufacturers use emotional messages to convey the benefits of owning a car. While the environmental advantages of car-sharing are politically important, potential individual customers will be more interested in the concrete benefits for them. (link to Chapter 1) These include:

- lower costs than car ownership;
- less stress with finding a parking space;
- no hidden costs of tax, insurance and so on;
- more flexibility, as each car-share service has various cars available.
What are the relevant media?

Raising awareness through conventional advertising is rather costly and therefore probably not a real option for most of the car-sharing providers.

A survey by cambio, the experienced car-sharing operator in Bremen, reviews the effect of different types of advertising, and highlights the value of customer satisfaction being key to raising awareness.

How did you become aware about Car-Sharing?

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer as CS user</td>
<td>4%</td>
</tr>
<tr>
<td>CS Station</td>
<td>8%</td>
</tr>
<tr>
<td>CS vehicles</td>
<td>13%</td>
</tr>
<tr>
<td>Information campaign</td>
<td>3%</td>
</tr>
<tr>
<td>personal recommendation</td>
<td>2%</td>
</tr>
<tr>
<td>PR letters</td>
<td>2%</td>
</tr>
<tr>
<td>Information leaflets</td>
<td>7%</td>
</tr>
<tr>
<td>Information evenings</td>
<td>7%</td>
</tr>
<tr>
<td>advertisements</td>
<td>13%</td>
</tr>
<tr>
<td>Poster</td>
<td>7%</td>
</tr>
<tr>
<td>Cinema commercial</td>
<td>13%</td>
</tr>
<tr>
<td>editorial media reports</td>
<td>42%</td>
</tr>
</tbody>
</table>

Data: cambio 2001

There is a saying in marketing that a good experience is told to seven other people, while a negative experience is shared with 27. Customer satisfaction is a key part of marketing. Your car-sharing stations and cars are also elements of your corporate design and may be a positive way of getting the attention of potential customers.

The graph also highlights the importance for new operators of attracting media coverage. Press conferences and information for the media are key elements of success. Try to convince journalists of the benefits of car-sharing by letting them sample your services.

Targeted information

People who use public transport regularly are more likely to be potential car-sharing customers than those who only use their private car.
Using public transport to raise awareness about car-sharing

Cooperating with public transport operators can help to demonstrate the relevance of a car-sharing service, as well as improving the image of the public transport operators.

Posters at public transport stops can help raise the awareness of waiting passengers. The poster on the left has the slogan: ‘With the Bremer Karte [public transport season ticket] you can now also drive a car’. The same approach can also be used in buses and trams to target passengers while they are travelling (below).

The City of Bremen produced a low-cost cinema commercial, which was shown for free for several months in major cinemas. Those groups who are perceived as more likely to take up car-sharing are also identified as likely to go to the cinema more often. The message in the commercial is based on the broader transport choices you have as a car-sharing customer – and its relevance for a first date. (link to cinema commercial)

A car in your pocket

This campaign targets students in the Belgian university new town of Louvain-La-Neuve. It markets car-sharing as an attractive, flexible and hip option. The compact university campus is largely pedestrianised. However one survey showed that more than half of all students have access to a car, but only need it occasionally. Parents, however, usually pick up the costs. They are being alerted to the financial benefits of car-sharing through information kits which are being disseminated by the university. Getting young people on board early is a way to foster loyal customers for the future.

Further information on how to develop effective communication programmes to support sustainable transport policies in Europe can be found on the website of the Tapestry project (Campaign solutions for transport): (link: www.eu-tapestry.org)
12. Why is car-sharing beneficial for public transport?

Introduction

Although only around 10 years old, car-sharing has already demonstrated its ability to complement public transport.\(^1\) The combination of public transport and car-sharing creates a win-win situation for both transport modes because they are stronger together than separately. Public transport gains more customers as car-sharers tend to have more informed mobility patterns and use a car less often than car owners. At the same time, car-sharing can penetrate markets more quickly and strongly when combined with public transport. Various studies have also shown that car-sharing clients who were previously car-owners change their mobility patterns: they reduce their car mileage and use public transport much more often.\(^2\)

**The Bremen experience**

Bremen has a history of cooperation between the public transport operator and the car-sharing provider. In June 1998 Bremer Strassenbahn AG (BSAG) and StadtAuto Bremen launched the ‘Bremer Karte plus AutoCard’, an annual season ticket which includes access to car-sharing at an attractive price. A survey by the University of Bremen has shown that the mileage travelled on public transport by car-sharers has increased on average from 3,534km to 3,704km per person – an annual increase of 170 kilometres; 8.5% of car owners got rid of their car, and 26% chose car-sharing instead of purchasing a car.

There are more than 3,100 car-sharers in Bremen and almost one third have chosen the combined public transport season ticket. The figures also indicate a shift from monthly season tickets to annual season tickets, up from 52% to 78%. This shift results in an obvious financial benefit for the public transport operator which receives a gain of about €148 per change from monthly season tickets to annual tickets. With about 1,000 users of the combined offer, and a shift of 26%, this provides around €38,500 per year in extra revenue for the public transport operator.

Main role of the public transport operator

The main role of the public transport operator in car-sharing schemes is to find ways to integrate the transport options, and therefore to help customers find their way around in an easy and stress-free manner. This can only be achieved by combining public transport with individual transport modes such as car-sharing, car rental, taxis and bicycles.

In this context, many cities in Germany, Switzerland, Italy, Austria and other countries have introduced cooperation between public transport and car-sharing. In most cases, public transport operators cooperate with car-sharing providers, offering special incentives (reduced tariffs) for users to combine both services.

There are also examples of where the public transport operator itself becomes a car-sharing provider (for example Wuppertal or Palermo), or at least a shareholder of the car-

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1 For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.

sharing operator (such as Brussels). The framework of cooperation might be different, but a similar comprehensive ‘product’ is available for customers.

The experience of Switzerland

In 1999, VBZ won the UITP Secretary General’s ‘Prize for Innovation in Public Transport’ for the implementation of its new combined mobility offer ‘zürimobil’, now changed to ZVV-Kombiabo. The results of this initiative include a more frequent use of public transport by customers, even though they can obtain a car near where they live. In the years 1996-98, research showed that car-sharing customers learned to use ‘their’ cars more efficiently and therefore lowered car-sharing travel distance by some 20%. They have also bought more season tickets: a 14% increase. (link to chapter3)

The strategy of VBZ, the public transport operator, is to develop the company into a comprehensive customer-oriented service supplier. The company cooperates with specialised partners such as Europcar and Mobility CarSharing Schweiz to offer the following products:

- a dense public transport network, with a maximum distance of 330 metres to the nearest stop, a frequency of six to seven minutes during rush hour and not less than 15 minutes off-peak, and an integrated fare structure;
- a dense network of car-sharing stations: 450 vehicles are available at 250 locations in the city;
- additional services like car rental for holidays, vans, bicycle rental, and so on.

These products are supported by a customer-oriented approach, with a city-wide information system, a 24 hour reservation and information centre, and 24 hour car ordering in a self-service system

Guidelines for successful synergies between public transport and car-sharing

Guidelines for successful integration between public transport and car-sharing are set out below:

- Both operators need to implement high quality services. By doing so, public transport authorities make sure that car-sharers can rely on an efficient service, and will only need a car on very specific occasions.

  Combined tariffs
  An integrated mobility service should be attractive to the potential customer, and offer an additional benefit in terms of tariffs and services. It usually implies the introduction of combined season tickets (as illustrated by this picture), making the use of both systems cheaper, but mainly a lot easier.

- Car-sharing stations should be located close to public transport stops whenever it is possible and suitable. They may also be arranged at public transport sites, which allows car-sharing vehicles to be used jointly by the public transport operator.
Promote joint services
Marketing is particularly important because it raises awareness of car-sharing services. Stations, stops and vehicles provide suitable information and advertising outlets, and enable specific targeting of selected groups. The public transport provider can generate a great deal of benefit for the combined service in return for low additional outlay. Links to the information and reservation pages of the car-sharing operator should also be provided as a matter of course.

- Finally, to ensure seamless mobility, it is fundamental that **the information on the different modes of transport is centralised and widely disseminated**. A city information system on mobility should be set up to provide advice on each public transport mode, locations of car-sharing vehicles, taxi stops, parking facilities, pedestrian areas, and walking and bicycle paths. It should be disseminated in several ways, for example as a printed city map, on the Internet and at all public transport stops and car-sharing stations. It is important that the public transport operator’s information personnel are trained so that they are also able to provide reliable information about car-sharing – just as the car-sharing operator should also know about the public transport services which are available.

Implementing all these guidelines at the same time will ensure successful cooperation between public transport and car-sharing schemes, bringing benefits to both.
13. Car-sharing and low-car housing: how to manage urban planning without cars

Introduction

When planning new developments or regenerating older parts of a city, there are many opportunities to reduce the potential impact of cars. This chapter looks at the practicalities of using urban planning and management to support and sustain car-sharing operations.\(^1\)

In the project we have seen several types of approaches to encourage low-car developments. We have seen examples where a change in the planning conditions for developments requiring fewer car parking spaces resulted in an offer by the developers to future residents to join a car-sharing arrangement. We have also seen examples where the municipality has received substantial funds through the development process as a result of reducing numbers of cars and where such funds have been used to support infrastructure or even marketing of car-sharing.

Urban land is generally very expensive and if less space is needed for cars, more housing or office space can be provided. This can provide a financial incentive for lowering car parking provision, provided that the mobility of future residents is assured. Car-sharing could help provide for that mobility. Fewer car spaces can also mean that funds can be made available to make city areas more attractive by replacing space previously required for cars with green space, areas for pedestrians and cyclists.

Type of developments

There is now considerable experience in building housing with a reduced amount of car parking. Providing less car parking means more space for additional dwellings or open space, and might result in more attractive overall layouts. However such designs will only achieve their objective if future residents don’t acquire cars and park them either on- or off-site, thereby clogging up the streets of the neighbourhood. This can be achieved through:

- new brownfield/greenfield development with standards for reduced car parking and a requirement to fund car-sharing facilities for a number of years;
- infill developments with no car parking on site, and provision of car-sharing infrastructure for the benefit of future residents.

\(^1\) For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.
Low-car housing: examples of practice

There are many opportunities to design car-sharing infrastructure into new developments and green up the city environment in the process.

BedZed, a zero emission housing scheme in Sutton, has a car club for its residents.

Beginenhof in Bremen provides reduced car parking and two spaces for car-sharing vehicles. The station is dedicated to the residents of the development, but operated by Cambio. Cambio customers living outside the development can also use these cars, while the residents of Beginenhof have access to Cambio’s other cars located in different parts of Bremen.

Since 2003, Deptford in London has provided free membership to a car club for all residents in new developments. Take up has been gradual but slow and there is concern about residents buying their own cars and creating parking problems on- and off-site.

Hammarby Sjöstad in Stockholm was built with tough environmental, technical and traffic conditions. The city's parking requirements were reduced when the developer agreed to offer car-sharing to residents. The goal was that 10% of residents should join the car-sharing scheme. By May 2004, 150 households had joined which amounts to 7% of the households.
New developments approved: some examples

65 residential and 2 business units
Developer to establish car-sharing service before 60% of the development is occupied; default cost to developer £100,000.

175 flats, 602 $m^2$ of floor space for businesses
Provision by developer of £185,000 as a contribution towards car reduction measures and/or public transport assistance, less the costs to be agreed for the car-sharing membership fees for the first year for all residents of the development.

224 flats, 18 live/work, business and retail
Provision of dedicated car parking spaces for use by car-sharing vehicles; first year membership costs paid for between 61-78 members.

124 flats, retail, restaurant, doctor's surgery
Five dedicated car parking spaces, first year membership paid for 124 flats, eligibility for on-street car parking permits withdrawn

Construction of a six and seven storey building to provide office and telehotel £230,000 secured for green travel measures.

Developer contributions to car-sharing: how can this be implemented?

Where planning regimes permit there is considerable scope for urban planners to support the introduction and development of car-sharing through a continuous flow of sites, resources and support for new car-sharing users. As awareness of car-sharing is still low, potential developers must be provided with information which indicates clearly what is possible and what is expected of them.

Potential funding arrangements
Once a municipality has set its sights on reducing car parking associated with new development, developers will be keen to ensure the mobility of future occupants, as this can have a strong influence on lettings and sales of new flats and houses. Developers can therefore be invited to make contributions to car-sharing infrastructure, either to be used within their site, or if this is too small, in the vicinity. Where there is strong development pressure the cumulative flow of funds can be substantial and can help the city to achieve a network of car-sharing stations within a relatively short period of time (10 years).

Types of contributions
Unless it is left to the developer to make arrangements with local car-sharing operators, it will be important for a local authority to have in place a policy that explains the types of
Financial contributions could be used for land, designing car-sharing stations, and purchasing any associated equipment such as IT information points. It could also be used for vehicle support or purchase, for example at the start-up phase where any potential operator will require support. It could also be used to pay for annual fees for individuals subscribing to a car-sharing operator for a number of years. Obviously funding will need to be carefully calculated and assessments made about the minimum required to ensure that the mobility needs arising from the development can be satisfied. (link to Chapter 10)

Longevity of contributions
The model of developer contributions is based on the assumption that the contribution asked for will be sufficient to deal with the mobility needs arising from providing less car parking. This assumption will depend on the projected growth patterns of car-sharing users. We typically assume that it will take between three and five years for sites to become commercially self-supporting in the UK, and that funding support is needed to achieve that position. The introduction of car-sharing systems in Belgium and Italy suggest substantially shorter periods.

Managing funds
Where there is strong development pressure, considerable funds can accumulate for investment in car-sharing infrastructure. Funding may not be able to be used until new developments are complete. The key issue for a municipality is to establish how such funds will be released and at what speed. It is also critical to establish whether revenue support (for the running of car-sharing operations from new developments) or capital support (for sites and other infrastructure) is the best way to encourage car-sharing growth in an area.

Preferred provider
Where a number of development sites with a range of contributions come together it is important for the municipality to ensure that the operator providing the car-sharing service is competent and that the risk of failure is minimised. The city administration may want to select a preferred operator for a period of time through a tendering process. A certification of the operator to prove that the service is in conformity with the Blue Angel eco-label (link to eco label) would provide quality assurance.

Developer contributions: how long should they last?
The London Borough of Sutton requires developers to set up car-sharing arrangements for new developments with a nominated car sharing operator. Developers need to provide enough funding to last for three years. After this time the operator is expected to be able to run the service for the development on a strictly commercial basis.
Managing car-free developments

If car-free developments are to succeed in the long term then it is important to ensure that, as far as possible, future residents do not start to acquire additional cars, which will cause substantial environmental problems. Several considerations need to be taken into account, and these are set out below.

Removal of opportunities to park
Residents that buy a flat or house in a car-free development can have their right to obtain permits to park in Controlled Parking Zones removed. This will seriously reduce the availability of car parking spaces should they decide to acquire a car at a later date. The intention of this and similar measures is to ensure that residents living in car-free developments do not undermine the intention of the original planning permission.

A complete chain of contractual agreements
There are many, and sometimes complicated, ownership arrangements in new developments. There may be the developer that secures the permission to build and who owns the land. On completion of a development, a management company might be appointed to be responsible for the upkeep of any communal areas and facilities while the flats are sold to individual owners. For low-car development provisions to remain, the obligations placed on the developer must be transferred to the management company and the residents in their leases. Without such arrangements the intention of car-free or low-car development can very quickly be undermined.

Securing the services of the car-sharing operator
While a developer might agree to contract with a car-sharing operator to provide services, it will be important for the management company appointed by the developer to have this requirement translated into day-to-day duties. These might include the enforcement of the dedicated car parking spaces for car-sharing vehicles and other requirements which are needed to facilitate the smooth operation of car-sharing within the site.

Managing for the long term
In Deptford, London AVIS was asked by the developer to introduce car-sharing. This has taken a long time, partly because of communication difficulties with the management company, which has not been involved from the beginning.

Southwark intends not to provide Controlled Parking Zone permits (illustrated below) to residents from car-free developments.
**Funding other parts of the city infrastructure**

Car-sharing can have a role in the regeneration of urban areas to help make cities attractive places to live. By freeing space previously given over to cars, street space could be reallocated for pedestrianised areas, green spaces and a better infrastructure for cyclists. Developers' funds can be used to pay for this infrastructure.

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**Investing in greening municipalities**

The German traffic regulations – as in other European countries – do not yet allow space to be allocated for on-street car-sharing stations. Therefore Bremen has created intermodal Public Mobility Stations – called ‘mobil.punkt’ - which link bikeracks, taxi ranks, public transport stops, car-sharing stations and an Internet-based information terminal (these opened on 2 April 2003). The picture to the left shows bike racks replacing space for parked cars. The other photo is of an intermodal car-sharing station (see www.mobilpunkt.de).

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**Possible ways forward**

The experience of the moses project shows that much can be done to connect the development process to car-sharing in our cities. The higher the pressures for development, the greater the opportunities, but also the more important it is to manage the process extremely carefully.

- **First step:** Secure the planning and building framework. Many municipalities can set their own planning or development regulations, and can therefore insist that a proportion of all new developments are low-car or car-free. This requires a firm political will in the face of strong pro-car lobbies. ([link to Chapter 4](#))

- **Second step:** Determine what contributions for an evolving car-sharing infrastructure are needed from new development.

- **Third step:** Determine how these contributions will be managed and eventually transferred to the car-sharing operator to ensure the desired long term transport benefits.
•  **Fourth step**: Ensure that a seamless string of contracts bind all those benefiting from a permission to build and develop car-free or low-car housing, including the developer, any managing company and agent, and residents buying, leasing or renting in the development.
14. Car-Sharing in Eastern Europe - the Bucharest case

Introduction

The cities in Central and East European (CEE) countries face a dramatic change. For several decades the amount of private car travel was comparatively low and public transport was the main mode of transport. With more widespread access to cars, private car travel has increased rapidly. From 1990-99, the new member states of the EU had an increase in car ownership of 61%.

The urban areas were not built to cope with this number of cars. There are now severe problems with traffic congestion and access to parking. Where once, for many, there was no alternative to public transport, the situation has now changed: passenger numbers have fallen, fares have been increased and services have been reduced.

Cars have become deeply entrenched in the way people live; the percentage of car travel has continued to increase even in countries with high fuel and vehicle taxes, dense land use patterns and high quality public transport services. Cars are becoming so dominant in many countries that most people no longer think about their transport choices, and use private vehicles for all their metropolitan trips. It seems clear that the cities from CEE countries will run into even more problems in the future as increased capacity for cars is likely to be introduced.

As a part of the moses project, the Bucharest public transport operator, RATB, joined the established car-sharing consortium.¹ The Romanian experience has shown that innovative car-sharing schemes rely on much integration between all partners, and significant public support, if they are going to be successful within the specific conditions of a transition country.

¹ For the benefit of readers from the UK, throughout Keys to car-sharing we use the term car-sharing for what in the UK is generally known as car clubs.
The private car has become a symbol of personal wealth and freedom to move, and for many people the idea of car-sharing seems a step backwards rather than forward. Overcoming that perception is a key challenge for the sustainable development of cities in the transition countries.

The experience of transportation in Bucharest

The experience of transportation change in Romania, and in particular Bucharest, has been typical of the CEE countries. Since 1989, many families have chosen to buy second or third cars for children or a spouse, and these cars are often only used for short periods. In addition, many companies use a number of vehicles. This has led to a decrease in the number of available off-street parking places and an increase in traffic jams and pollution.

Bucharest has a population of about two million people. It faces complex problems in relation to mobility. Traffic management technology is not in use to assist with traffic flows, and congestion is considerable. Within the broad city area, it is only possible to get from north to south, or west to east, via the city centre. Although several traffic management projects are in progress, the solutions put forward are insufficient. It is imperative that measures are put in place to restrict car use and to encourage travel by other modes.

The Bucharest Master Plan states that the key transport strategies for Bucharest are to reduce traffic in the city centre, especially car traffic, and to develop good parking management. A car-sharing scheme could therefore be an important part of the implementation of this strategy. Furthermore, Bucharest, as the first Eastern European city to implement car-sharing, could offer an interesting analysis of car-sharing, with particular reference to the specific socioeconomic characteristics of this region.

Earlier chapters have shown that anyone who proposes alternatives to the privately owned car rarely succeeds alone. Achieving success in competing with this dominant transportation mode requires total support from a range of organisations.

For RATB, the opportunity to receive financial and information support were clear incentives for it to participate in the moses project. RATB is an important local stakeholder.
in developing the transport strategy. It was important for RATB to convince the local
decision makers to consider the car-sharing concept as one of the mobility solutions for
Bucharest's worsening traffic situation.

There was both managerial and political support for attempting car-sharing. RATB had
begun experimenting with the car-sharing concept as part of the TOSCA project
(Technological and Operational Support for Car-sharing project) which included
developing a Business and Implementation Plan and undertaking a feasibility study.
Decision makers reacted positively to this and gave their permission for RATB to
experiment, design and integrate a car-sharing scheme into their organisational structure.

Technical aspects

The transfer of technology and experience is vital with this kind of project. Within the
moses project, the experience accumulated by the partner from Bremen was the most
important support for overcoming the technical and organisational obstacles which arose
during the system implementation process.
Staff training
Staff training is a key aspect, since car-sharing is a service and involves more than simply equipping cars with the necessary technology. From within the moses project, the German company Ecolo provided training for two Romanian staff, including learning about the technical, economic and functional aspects of how a car-sharing scheme works.

Technology costs
There is reliable technology available on the market, although the cost of Western technology is comparatively high for implementing in Bucharest. These costs could influence the extent to which car-sharing systems are developed, especially when considered against the cost of other transportation modes, especially taxis, which come with a low tariff per kilometre of about 15-20 Euro cents per kilometre. In Bucharest, the costs of the car-sharing technology adds to the cost of the tariff; as a consequence, the attractiveness of car-sharing considerably declines. The costs of owning and travelling by car in Romania are still low compared to most other EU countries. The question remains, of course, about how much it will cost in the future, for both car owners and the costs to the wider public of infrastructure. For now, the financial support for car-sharing from the European Union is a crucial element while the other modes are so cheap, and for as long as the economic break-even point for car-sharing has not been achieved.

Given all these aspects, and in order to decrease the costs, we developed a relationship with a local IT-partner who provided a technical solution based on Bucharest’s specific requirements and economic conditions.

Infrastructure
The infrastructure obstacles for car-sharing primarily concern access to proper parking facilities in the cities and the low tariffs for use of special parking facilities. These two major problems should be solved as a pre-condition for extending car-sharing within Bucharest. For the trial car-sharing station set up as part of the moses project, a large secure private parking facility was identified; this location offered the best conditions in terms of security and accessibility issues.

Economic aspects
The premise of car-sharing is simple but, unfortunately, often potential users’ perceptions of it are not. It is therefore important to find the best way of informing potential users about the benefits of using the car-sharing system. This means providing a professional service and ongoing awareness-raising work. The ideas behind car-sharing also need to be integrated further into urban development planning.

Households access a fleet of shared-use vehicles as needed. Individuals gain the benefit of private car use without the costs and responsibilities of ownership, and society gains large economic, environmental, and social benefits as a result of more efficient vehicle use. All these theoretical benefits must be proved by practice. It may also be that the more important benefits of car-sharing are its indirect and unforeseen consequences. It may be that car-sharing is best seen as facilitating inter-modal travel, and as the precursor of a new transportation mode, filling the gap between public transport and private cars, or as a real alternative to a car fleet for private companies (as was the case in Bucharest).
The transformation of travel, from collective modes to private vehicles, has generated a number of benefits, but also significant costs. Although the relative magnitude of these costs and benefits is uncertain, it is likely that the transportation services and activities could be managed more efficiently.

As with all new businesses, the costs and benefits of running a car-sharing business could only be estimated, and many of them were based on data from experienced car-sharing operators, specific market research and a feasibility study.

Car-sharing offers a middle option between having no car and owning one (or more than one in some cases). While a privately owned car implies very high fixed costs and low variable costs, the opposite applies to car-sharing – the fixed costs are low and the variable costs high. The cost structure of car-sharing provides good grounds for cutting down on driving. The variable costs are three to four times higher than for a privately owned car. This difference fosters far more conscious transport behaviour, where the means of transportation for each trip is closely considered. This gives consumers an incentive to drive less and use other transportation options when possible. This also makes public transport much more competitive.

According to the analysis undertaken as part of moses, the situation in Romania is different: the percentage of fixed costs is lower than variable costs, due to low parking fees, annual ownership taxes, insurance, and so on. All these can actually make it less attractive for potential users and also creates a barrier for the development of car-sharing systems.

**Public and private investment**

An alternative for reducing the costs of car-sharing in Bucharest could be public subsidy although surveys showed that people are not supportive of the idea of a subsidy for another public service like car-sharing. A private local investor could play an important role in financing and supporting a car-sharing operation, knowing that revenues can only be possible on a long term perspective.

**Social aspects**

The advantages of car-sharing could be divided into two categories: mobility benefits and efficiency benefits.

Mobility benefits imply that more people gain access to greater mobility. People who previously had no car are able to participate in activities they could not take part in previously. Efficiency benefits entail financial benefits for both society and the individual user. This means that users of car-sharing save money by not having their own car. They can choose between various car types and do not need to bother with maintenance and repairs. At the same time, society gains a number of infrastructure benefits in the form of a reduction in demand due to changed transport patterns.

With the constant increase in the number of cars on the street it will be a major problem to drive in Bucharest in a few years time. New solutions to reduce traffic congestion must be found immediately. These solutions must combine the traditional measures set out in
the Bucharest Master Plan with initiatives that try to make the use of cars more efficient. Car-sharing could contribute to this.

The car-sharing scheme in Bucharest currently seems to be used by customers in an impulsive way, and is not so based on economic calculations and better travel planning. More people appear to like the idea of a luxurious car-hire scheme that could be interpreted as having an 'upper class' image but at a low cost.

According to a survey of potential users among Bucharest residents, one possible use of car-sharing could be for leisure trips. The next phase of the project could promote this as an advantage of a car-sharing scheme, both for society and individual users. At the moment, the data is only draft, and the final conclusions will only be available at the end of the trial period.

The quantitative research also suggests that there are some benefits for society from car-sharing: approximately 30% of the respondents have decided not to buy a new car. A survey has been carried out within the area where the pilot car-sharing station is placed and this has shown that 152 out of 535 people who are likely potential members of a car-sharing scheme would give up their own car if they decided to use a car-sharing vehicle. (link to chapter 2)

**Legal aspects**

The major problem which was confronted by RATB was the acceptance of car-sharing as a legal financial activity within its own objectives. In the future these activities should be strictly regulated, like any other transport activity, by providing specific rules and standards.

**Market potential**

It is difficult to estimate the reaction of the market when you are trying to promote innovative services based on new technologies, and when customers have no experience of those products. A marketing strategy is therefore essential. Determining the demand for shared cars could be especially difficult because it implies some reorganisation of a household’s travel patterns and lifestyle. People use and view their cars in many different ways, and these are poorly understood. Cars are valued not only for utilitarian travel, but also for carrying heavy items, leisure and so on. Attitudes and values vary greatly among different people. An integrated, well-publicised transport policy could help to influence people to reconsider their attitudes to car use, and to think about car-sharing as a real alternative to the private car.

A central issue in marketing is costs. Cost are determined in part on how the services are packaged, and how these are marketed is therefore vital.

Based on both qualitative and quantitative research, there is an important car-sharing market potential within private companies as they are increasingly careful with their resources.
In Bucharest, the probability of becoming a member of a car-sharing scheme is strongly related to monthly income per member (about €330), and on their likelihood of travelling by public transport. The section of the population which meets both criteria can be targeted with a mixed package of public transport and car-sharing.

Car-sharing clearly has the potential to provide significant economic, social, and environmental benefits. These benefits would be larger if car-sharing was widely accepted and services were reliable and efficiently provided. We conclude that, in general, car-sharing is most likely to succeed in Bucharest if the following exists:

- a simple and reliable technical solution;
- a dense network and variety of vehicles;
- a diverse mix of users;
- joint marketing partnerships;
- a flexible simple rate system, which can be easily adapted to client requirements;
- easy emergency access to taxis and public transport;
- independence from government entities to assure firm adherence to business principles.