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1 Preliminary remarks

The present report provides an overview on the current situation of Car-Sharing in Europe. In its first part, it focuses on what has been achieved up till now in terms of operations, technology, marketing, political and intermodal framework. In the second section the reader will get information on offered system services and technology for Car-Sharing companies.

The intention however is not to draw a picture in completeness: The survey outlines the most important developments within the different topics and tries to file them in a general frame. There will be no lexical mentioning of all Car-Sharing suppliers in each European country thus, nor any statistics of uncertain use.

The present information is principally based on my ten years of professional Car-Sharing experience, on-site visits and on data collected by means of a questionnaire (see annex) that was sent to more than 100 European Car-Sharing companies in Austria, Danmark, Finland, France, Germany, Italy, Netherlands, Norway, Sweden, Switzerland and the UK. The stress however lies on data from German and Swiss suppliers. Further information were drawn from personal phone calls to Car-Sharing, system service or technology providers. In most cases all partners or colleagues who have been asked were prepared to give detailed information, which is by no means a matter of course since the survey was worked out in the name of cambio, Bremen (see chapter 3.2.1) who must be seen as a prospective competitor to many of the questioned companies. Some companies therefore comprehensively were not prepared to give any information at all. I tried however to present the current state of the art in the most unbiased way respecting my reputation as a political scientist.

Finally I would like to thank all persons who contributed to the success of this report, especially to Dagmar Engel from cambio for her meticulous data collecting work.

Roy Traue, December 2001
2 Description of status quo in European Car-Sharing

2.1 Introduction

After more than ten years of existence, the European Car-Sharing market seems to be coagulating. Even if there are still lots of individual organisations dealing mainly in smaller towns the process of merging and expansion in big cities is well on its way. Still there are no standards acquired. Customers who want to use a car in another town still need to get an additional smart card or key and must deal with other using conditions and prices - at least in most cases.

The following chapters will inform about the different ways of how Car-Sharing is organised, which services are offered and which technology is applied. Moreover the significance of integrating Car-Sharing into multi-modal services and urban development will be pointed out.

In many cases a distinction is made between “smaller, mid-size and bigger” Car-Sharing companies. This eclectic differentiation is based on the experience that similar developments, needs or problems are often related to a similar size of the respective companies. I define

- “Smaller” companies as organisations with < 500 customers
- “Mid-size” as organisations with > 500 and < 2000 customers
- “Bigger” companies as organisations with > 2000 customers.

The following graph based on data of the German national branch association “Bundesverband CarSharing” (BCS) displays the spread of customers in Germany.

It illustrates the fact that mainly the developments and problems of bigger companies have an impact on the reality of a current Car-Sharing customer as 65% of all German customers are served by “bigger” companies.
Adding Switzerland to this analysis the corresponding value would actually be 82%:

### 2.2 Organisational framework

#### 2.2.1 Company status

##### 2.2.1.1 Legal form

In many cases Car-Sharing organisations started as an association - a quick and cheap way to give it a shape. In Germany there are still numerous smaller associations left, even though most of them have converted or started directly as a limited company\(^1\) in order to be a reliable business partner on the mar-

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\(^1\) Please note that German limited companies (GmbH) require a minimum capital of 25,000 €.

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ket. Ltd. therefore is the predominating legal form for mid-size companies all over Europe.

With increasing size of the company however the needs of financing namely technological developments become more and more important. The integration of customers as shareholders seems to be a way to satisfy this capital need. Bigger companies therefore have converted to legal forms which make this integration easier and more interesting for the customer as well: PLC or joint-stock companies (as the Berlin Stattauto AG) or limited partnerships (e.g. cambio KG). In Switzerland, the easy and socially very much accepted way of building up a company as a co-operative made "mobility" choose this form, which still allows the declaration of the customers deposit as a co-operative share.

2.2.1.2 Structure

According to differences in legal forms, also the structure changes with increasing size of the companies. Smaller associations usually serve quite a restricted market in only one town. Mid-size LTD's often offer their services in up to 5 cities frequently situated in the vicinity of the companies headquarter city. These branches usually have no legal form on their own and sometimes not even a customer office. In Germany, bigger suppliers regularly serve their local customers in an own office or sales point sometimes with (Stadtmobil Dortmund, cambio) sometimes without a legal form (Stattauto AG). In Switzerland and in the Netherlands the structure is centralised, which means, that services are managed from one national office without any local offices.

2.2.1.3 Spread of Locations

The biggest national differences in terms of spread occur in serving in rural areas or not. In Germany only small associations offer their services in small towns (exception FAG Freiburg) whereas in Switzerland and Austria but also in the Netherlands the national suppliers do not seem to be afraid of setting up an offer in rather rural villages, e.g. Denzel Drive Austria's smallest town provided is of 1.000 inhabitants. Especially in Switzerland it is very likely that this phenomenon is related to a comparatively good supply of public transport.
2.2.2 Operations

2.2.2.1 Fleet management

2.2.2.1.1 Purchase organisation
Since the receiving of interesting price discounts from car dealers depends on the Car-Sharing company’s size and importance on the market, more and more smaller and mid-size companies are joining new purchase-pools (e.g. Shareway AG). Another way of outsourcing the hard negotiation work with car dealers is to instruct independent car purchase and financing companies, such as SynCar (www.syncar.de). Moreover, in Germany the national branch association BCS (Bundesverband CarSharing, www.carsharing.de) has worked out various contracts with car producers, which signify some 1 to 5 rebate points for the member-companies.

2.2.2.1.2 Staff recruiting, Service fleet and outsourcing
As most Car-Sharing companies across Europe do not dispose of a fleet maintenance garage on their own, this work is done by the local car dealer or by an independent garage. Still lots of troubleshooting, cleansing and logistic trips have to be done by the own company staff. The requirements for the staff’s skills differ astonishingly from company to company. Even bigger suppliers sometimes still work with so-called “car-godfathers” or “car-chiefs”. These persons normally are customers who take care for one or more cars, receiving a monthly compensation on their bill. The skill requirements of those persons implicitly are rather modest and limit themselves to a “good technical know-how”. Most small and mid-size companies therefore still do not dispose of a special service car or fleet.

Numerous big suppliers however employ car mechanics and other technically skilled persons with own service cars in order to organise the maintenance. Also the outsourcing of maintenance and cleansing for a part of the fleet is recently practised (and investigated upon) by several companies. Stattauto Berlin reports to have made very good experiences with the complete outsourcing of car maintenance which has led to a 50% cost reduction and to a better state of the cars.

2.2.2.1.3 Damage management
For the damage management the questioning showed very clearly, that almost only bigger companies dispose of specially skilled personnel. Oddly enough even for those with specialised personnel, in most cases the handling towards car insurance's is still made individually per damage, evoking at least the suspicion, that damage balances are not taken too much into account.

2.2.2.2 Customer care

2.2.2.2.1 Local office
All mid-size and bigger European companies dispose of an own local or central office with slightly differing opening hours from Monday to Friday. Information for new customers, customer care and administration is done from there. As numerous mid-size companies still do not serve as much customers as they could, the number of customers per customer-service-employee differ too much to extract any benchmarks. Figures from bigger suppliers however show, that more than 1,000 customers per employee are manageable (Denzeldrive Austria, cambio, ...).

For the contract completion of new customers, respectively the way new customer get their smart card or other access means, the traditions within the companies are varying. Some do offer or even impose the attendance to an information evening in the local office, giving not only dense information and practical on-site explanations but also the possibility to show the driving license and passport and to get the smart card straight away. Other companies do not offer these evenings at all and receive their customers one by one within the regular opening hours or even never get in personal contact with them at all, as all contract communication is done by mail (e.g. Greenwheels, Netherlands).

Those differences do depend not only on the company’s traditions of dealing with that topic but also on geographical reasons and maybe even on the local population’s mentality.

2.2.2.2.2 Reservation service
Apart from a few very small associations (1 to 5 cars) in Germany, all companies offer a 24/7 reservation service. Bilkollektivet Oslo compensate the service gap of its 9/5 reservation service by access to internet reservation. Denzel Drive Austria offers in a similar situation (14/7) the additional possibility of
reservation via automatic reservation system (ARS). The organisation of these 24/7 services may be classified in three types.

1. Service made by an external call centre. Those call centres often are local companies such as taxi or security services headquarters and petrol stations. In some cases (e.g. Stattauto Munich) calls are partly transferred to the Car-Sharing office during the day-time.

2. Service made by an external Car-Sharing call centre. More and more Car-Sharing companies recently use the services of specially skilled Car-Sharing call centres as mentioned below at point 3.

3. Own call centre. As the reservation service is the most important link between the Car-Sharing company and its customers, some of the "big players" in Car-Sharing have installed a call centre on their own (mobility, O-Ton Dortmund, Halle, cambio). The fact that such a service means enormous (personnel) costs to the company’s budget leads to the phenomenon that, apart from mobility all call centres are offering this service also to other companies. Nevertheless Halle and cambio are still in the need of outsourcing this service to an external call-centre during a few night-hours with low call frequency.

Beside the usual reservation service (booking, altering, cancelling) only a few call centres offer additional services such as damage coaching, troubleshooting and trip registration or billing. Information services on Car-Sharing for potential new customers are normally not carried out by any call centre.

The company's satisfaction with these services differ very much. It is alright for small companies with just a few cars and also for big players with a call centre of their own. Mid size and bigger companies with the reservation service made by an external call centre sometimes feel unsatisfied and dependent.

Ultimately the importance of internet reservation is of rising importance. Several companies charge each phone call to their call centre with an additional fee while the web-reservation is offered for free. By this e.g. teilAuto Halle/Saale reports to have risen the web-quota to more than 40%.

2.2.2.3 Administration workflow

Whereas most differences in the state of the art among Car-Sharing companies often are related to the different sizes of the companies, the heterogeneous picture drawn in the field of administration covers the whole industry. Only very few companies have ever analysed the effectiveness of their administration
workflow in order to improve them. Nonetheless half of the asked managers declared themselves not satisfied with the administration’s effectiveness. It is obvious, that particularly these companies are very much interested in the take over of defined and optimised workflow services.

2.2.3 Product innovation

Recently the combination of estimated market needs and new technological possibilities have led to a variety of new Car-Sharing related services. Those services should be explained before giving an overview on where they are already offered.

2.2.3.1 Glossary

2.2.3.1.1 Open End

One of Car-Sharing’s biggest drawbacks is the fact that the customer has to define the returning time of the car. Also private persons but mainly business customers feel themselves very much limited by this necessity.

Open end means, the possibility of reserving a Car-Sharing car without the need of stating the returning time. The car then is blocked for the following time (or for a time period defined by the using conditions of the company). There probably would be no problem for the telematic technology to transfer the information on the return of the car to the reservation call centre. The reason, why Open End still is not too much applied by Car-Sharing companies rather lays in the feared reduction in the car’s occupancy and allocation ratio.

2.2.3.1.2 Instant Access

Instant Access means using a Car-Sharing car without the need of reserving it. This quite customer friendly idea is to understand in combination with an Open End service. It is obvious that such services can only be supplied at huge Car-Sharing locations with high allocation ratio. Especially the incorporation of Open End into a running Car-Sharing system offering both services with and without reservation means quite some logistical problems (e.g. the risk of reservation through the call centre of a car which is still registered as not booked in the call centre’s reservation program while an Instant Access customer takes it away right at the same time...).

2.2.3.1.3 One Way
One way means taking over a car in one city and returning it in another (as for car rentals) but also taking over a car at one location and returning it at another location but in the same city.

2.2.3.1.4 CashCar

CashCar has been developed by "choice" in Berlin and consists in a somehow reverse Car-Sharing: The Car-Sharing company purchases a car and makes a leasing contract with one (!) CashCar customer. This person possesses a car on his own thus. He may however introduce this car into the Car-Sharing fleet whenever he likes to, so that it may be used by other Car-Sharing customers. Of course the CashCar customer receives a financial compensation for this period of time. (The original idea was to give a compensation that would depend on the Car-Sharing fleet's occupancy at the respective time period. So that letting over the car in peak periods such as week ends would be more lucrative than e.g. on Monday night. This system however has never been implemented.)

2.2.3.1.5 Business Offers

In existing Car-Sharing business offers normally limit themselves rather to marketing offers such as special discounts or combinations of the innovative products mentioned above. Only a few companies are working on special tools and services for the special needs of business fleet administration such as programs for a combined administration of the company's fleet with the one of the local Car-Sharing company.

2.2.3.2 State of the art

In the field of product innovation, a clear line has to be drawn between the regular Car-Sharing offers and the German CarPool (www.carpool.de) system. As the latter does offer Car-Sharing services only with a minimum reservation time of 24 hours, the negative impacts of services like Open End and Instant Access on the fleet's occupancy do not strike that hard. CarPool in fact offers Open End, Instant Access and One Way rides. Apart from CarPool no regular Car-Sharing system across Europe includes Open End nor Instant Access. Within the Swiss RailLink project (see chapter 3.2.3) instant access will be implemented in January 2002.

Stattauto Berlin started a One Way and Open End service for rides in the city of Berlin. In a joint project with Daimler-Chrysler a number of smart-cars could be taken over at one
location and returned at another one in Berlin. The customers had to report the returning of the car to the reservation service. The project however has not been continued by Stattauto after its term.

One Way trips from one city to another are not implemented up to now.

The "Choice" product CashCar on the contrary seems to be easier to integrate into the regular Car-Sharing service. Apart from Berlin it is offered in Hamburg, Kassel and Halle/Saale. However the supplier’s comments on this product are not too euphoric: Only very few CashCars are in use.

Special business discounts are offered by all big and mid-size companies. Mobility Switzerland offers special subscribed reservations with the option to carry out "reservations within the reservation", which means that the car is reserved for the company in general (e.g. each Monday from 9 to 5) but in order to use the car, a company’s employee still has to reserve it on his name stating his staff number and the corresponding cost centre.

2.2.4 Marketing

Since only very few Car-Sharing companies have ever made an evaluation of their measures to attract new customers, manager’s judgements on the most successful means are rather "felt" than proven. As, on the other hand, this "felt success" regularly is due the same measures some kind of ranking seems to be legitimate.

Press and media are very fond of Car-Sharing. More than ten years after its start Car-Sharing still seems to be a topic worth reported upon. And in fact Car-Sharing companies do lots of press work as the costs are quite low and the effect of reports in local newspapers, radio or TV stations is very high.

Other adapted means are location signboards, car stickers and most of all the distribution of information leaflets. Ultimately the importance of an own information or interactive web site is increasing more and more.

Car Sharing companies usually have to deal with comparatively small marketing and PR budgets. That is why traditional advertising, apart from small adverts in scene magazines is mostly estimated as too expensive and unsuccessful. Some lucky circumstances sometimes lead to possibility of making local radio, TV or cinema spots (Strasbourg, Bologna, Bremen) but even in these cases the effects are rather poor.
The bigger a Car-Sharing company becomes the more important for PR purposes becomes the Car-Sharing service itself. cambio for example reports that customer opinion polls have shown, that first-hand information from other satisfied customers have been the main reason for being attracted by the system. Improvements of the service and additional offers therefore have to be seen not only as means for customer binding but also as the most important measure to attract new customers.

A very tangible example is the growing number of co-operations, mainly with the local public transport companies. In fact there is almost no Car-Sharing company left without a special offer for subscribed customers of public transport. The products range from discounts to special tariffs sometimes in combination with a special smart card (see chapter 2.4). Nearly all public transport managers currently have been persuaded (mainly by corresponding scientific surveys) that Car-Sharing customers make an always increasing use of busses and trams and that the additional offer of Car-Sharing makes public transport much more attractive for those who intend to get rid of their private cars. That is why several co-operations between Car-Sharing and public transport include a relatively strong support in marketing measures from the public transport side. Free or almost gratis posters and stickers in busses and trams as well as the distribution of (common) information leaflets in the public transport’s points of sale are frequent. In some cases a bus or a tram itself has been used as advertising medium.

Also the production of attractive customer's manuals and newspapers are discovered more and more to be suitable means for customer binding.

Even though satisfaction with the Car-Sharing services as the base of the vital mouth-to-mouth marketing is beyond question, only very hesitating steps towards a regular evaluation of customer satisfaction are carried out by most suppliers. The majority of managers reported to have worked out opinion poll questionnaires but with quite differing frequencies in distributing them (from “just once up to now” to “yearly”). Others consider the comments on driving reports, on contract notice forms or out of personal talks as to be sufficient. The fact that in a lot of cases the results of these evaluations are not communicated or published towards the customer does not amplify the customers feeling of being taken seriously. The overall monitoring of customer needs and satisfaction in European Car-Sharing must be considered as at least quite improvable if not fragmentarily.
In the last three years business customers have entered the focus of Car-Sharing marketing. It is obvious that business use has a positive impact on the fleets occupancy on labour days. Nonetheless the number of attracted business customers differ astonishingly: even within the group of mid-size and big companies from 2 to 50% of the overall number of customers (with the exception of MFO Stockholm who's customers are 100% business customers). The marketing efforts to attract business customers appear to be rather modest. Only the Dutch umbrella endowment "stichting voor gedeeld autogebruik" (endowment for shared car use) mentioned to have a special information leaflet for business customers. Two years ago, cambio Aachen could raise its share of business customers with a special PR campaign (leaflet, mailing, face-to-face visits) from 20 to 40%. Most Car-Sharing suppliers however still limit their activities in this field to a mere marketing on demand with discounts or special tariffs and sometimes the CashCar product.

2.3 Technological level

2.3.1 Car Access

More than five years after the first introduction of working telematics based car access systems (Invers, mobility) lots of smaller but also some mid-size and even bigger companies in Germany still apply entirely or partly mechanical key lockers. As in other European countries Car-Sharing started somewhat later, almost all companies are using the existing smart card access systems (Invers, mobility, Drive-IT, or others). A recently developed exception to this standard is the so-called Key Fob system developed by Avis for their CARvenience scheme to be applied within short at the moses implementation sites in Southwark and Sutton (London).

Whereas in Austria and Switzerland the customer may use cars in all national cities with just one smart card, in Germany the fact that local companies with own policies and access media at different states of the art still makes an easy cross use between other cities impossible. Smart cards or keys have to be ordered at least one day beforehand and are handed out in the Car-Sharing office. Even the fact, that Invers technology is applied in most cases does not change this situation very much. Up to now only cambio (Aachen, Bielefeld, Bremen, Cologne, Saarbrücken), Stadtmobil Dortmund (Dortmund, Dresden, Düsseldorf, Duisburg, Essen, Fürth, Gelsenkirchen, Jena, Nürnberg, Oberhausen, Regensburg, Rosenheim) and the Stadtmobil
Rhein-Main/Rhein-Neckar Group (Heidelberg, Karlsruhe, Mannheim, Frankfurt, Stuttgart) give a direct access to their customers in all cities. All variations of the Cocos system of Invers (stand-alone on board computers with or without reservation check, key lockers with or without reservation check - see chapter 3.1.2) are applied in German and Dutch Car-Sharing. Also "Cocos-trained" customers sometimes have to deal with differences even when they use the cars of another company that applies the Invers system too.

Nevertheless, the following type of access-technology has established itself as current state of the art:

The customer reserves his car by phone, ars, wap or internet and his reservation is transmitted to the on-board computer of the respective car or to an intelligent key-locker system on the basis of telematic technology. The transmission is carried out either by SMS (e.g. Invers, Mobility) or bearer service (e.g. Drive-IT). The customer then has to put his smart card in front of a reading device behind the car's windshield or incorporated into the key-locker. The car or locker only opens if there is a valid reservation registered for the corresponding customer and if the customer types in the right PIN. After the trip, the respective data (using hours, mileage) are transferred back to the local branch office where an automatic billing is carried out.

One of the first high-tech exceptions to this standard is the Finnish development by City Car Club Helsinki (www.citycarclub.net) allowing access to a car by mobile phone instead of smart cards.

2.3.2 Reservation Software

The majority of big suppliers in European Car-Sharing have developed their own reservation software. In several cases the possibility of reservation via internet is implemented. As the German market still is dominated by numerous small and mid-size companies there is a respective variety of software products.

Recently some Car-Sharing call centres have gathered several external companies as customers (WHD Heidelberg, O-ton Dortmund, cambio Bremen, DBrent Halle). As those call centres comprehensively apply only one type of software (eBus, N.N., Buze99, HAL), this development towards a few call centre sup-
pliers leads automatically to a slight standardisation in the software use.

There are only a few cases of companies using a reservation software from other developers without joining their call centre. If any, products from independent system suppliers seem to be preferred (e.g. ATC Bologna and Greenwheels use cocobook from Invers).

The overall satisfaction with the existing reservation software products is relatively high.

2.3.3 Billing and Administration

There is very low satisfaction in the field of billing and administration software. Most products have been implemented several years ago. The increasing number of Car-Sharing customers and the related need to optimise administration workflow collide with the limited performances of the existing programs. The fact that the German railway branch DBrent was still in search of an appropriate reservation and administration system when launching the press information of starting with Car-Sharing in autumn 2001 can be understood as symptomatic.

Purchasable products (without the need of joining a franchise system) with automatic ride registration are: Cocobill by Invers Siegen, Mobisys by Mobility, Ókocar by Chitec Hannover, Pfaust2000 by CARe Bremen. More information on software products in chapter 3.

2.4 Integration in multi-modal services

In Europe intermodality still has to be considered as lying in the cradle. The mentioned examples here below are only first steps towards a real supply of combined offers in public transport. It took quite some years until the reciprocal benefits for both suppliers have been taken into account and accepted by public transport managers. The proven effects show that combination of Car-Sharing and public transport

- make season or subscription tickets of public transport more attractive
- reach more customers for Car-Sharing and
- lead to a higher efficiency of the Car-Sharing fleet.
The Munich public transport company MVV registered for Car-Sharing customers a reduction of driven car kilometres from 13,000 before, to 3,000 after joining the local Car-Sharing scheme. Also a survey made by cambio Aachen displayed a decrease of 71 percent.

Whereas in existing Car-Sharing however only two public transport companies have decided to take over the Car-Sharing supply on their own (Wuppertal and recently Hagen) the situation in those European countries hardly getting started with Car-Sharing is reverse. Barcelona, Bologna and Bucharest are examples for the vital interest of public transport companies to establish an own Car-Sharing supply.

One of the first and still one of the best offers in terms of combination of public transport with Car-Sharing has been attained in Switzerland. On the basis of good experiences with the "züri mobil" product, the Swiss Car-Sharing company mobility and the Swiss railway supplier SBB launched the "Mobility Rail Card 444" in 1998. For 444,- Swiss Francs the customers receive a card, that gives them for a period of two years 50% reduction on railway rides plus the dropping of Car-Sharing entrance fee and deposit plus 30% reduction on car rental rides from Hertz.

In October 2001 the fertile soil of this Swiss co-operation has created a further, still more interesting intermodal plant: "RailLink" is the name of the new product of SBB and mobility that focuses on the so-called "last mile" in public transport. Even in Switzerland railway connections are not always reaching the smallest rural villages, as the maintenance of those lines would be much too expensive. The SBB therefore will provide its 2 million owners of a "Halbtax" or “Generalabonnement” subscription card with Car-Sharing cars located directly at the railway stations. The cars can be reserved beforehand or used by "instant access". As over 90% of Swiss railway customers travel solo, only smart cars will be used to make customers reach even the smallest villages. For an additional fee on the hour rate, the respective railway customers will have access to the ordinary mobility fleet as well. And vice-versa: mobility customers may use the RailLink cars at a slightly higher hour rate too. The project has started with 75 smart cars at 42 important stations. The aim is to have a pool of 400 cars by end of 2002.

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Since in Germany the local and regional public transport suppliers seem to be even more heterogeneously orientated as the Car-Sharing trade, only local co-operations have been possible to implement up to now. A first serious step towards a national platform seems to be the DBrent approach, intending to combine - just like the Swiss 444 example - the existing BahnCard offer (personnel discount card, that provides 50% reduction on railway ride prices) with the supplies of the local Car-Sharing companies. This approach however consists in a mere press statement up to now. Apart from that almost all mid-size and bigger suppliers in Germany have implemented some co-operation or another. They mainly consist in an x-%-discount on Car-Sharing rides or in the 50% reduction on or even the drop of entrance or monthly fees for the owners of yearly public transport subscription.

An exception is made by the Bremen offer "Bremer Karte plus AutoCard" of BSAG and cambio Bremen, offering a similar reduction system as mentioned before but on a monthly basis. This offer was awarded with the first price within the national contest "Königliche Verhältnisse in Bus und Bahn" (royal conditions in public transport) by the German traffic club VCD. Reductions like these sometimes are offered also in combination with the public transport job-ticket and vice-versa: Car-Sharing customers may dispose of a job-ticket.

Up to now, no combined technology is applied: There is no running example of a Car-Sharing smart card that could be employed as a payment medium for public transport rides or vice versa.

Beside the product lots of co-operations consist in mutual marketing measures too. Public transport companies often allow the Car-Sharing company to provide trams or busses with information leaflets, stickers or posters. Sometimes on a shared cost basis, sometimes for free. The distribution of leaflets in the public transport sales offices in several cases is combined with parallel information service by the sales office staff. Sometimes the running of a mutual "mobility office" is implemented as well (e.g. Bielefeld, Osnabrück).

In some rare cases even the establishment of Car-Sharing locations on tram stops surfaces has been implemented (e.g. Strasbourg).

For Car-Sharing customers, these combined supplies are only of little interest - at least according to the comments of Car-Sharing managers. They seem to serve more as a marketing measure than as an intrinsic element of customer care.
This applies even more for the offer made in co-operations with taxi or car rentals. Only very few companies offer the cash free payment of taxi rides (e.g. Stattauto Munich) and the customer's interest is accordingly quite low.

In Germany the national Car-Sharing association BCS has worked out the basis for local co-operations with Hertz car rental and some Car-Sharing suppliers indeed are running these co-operations - with very low interest from the customer's side.

2.5 Integration into urban development

One of the most important drawbacks for the development of Car-Sharing in Europe is the lack of appropriate parking space. Since the beginning Car-Sharing providers therefore struggle for an integration of Car-Sharing infrastructure into urban development and traffic planning.

Nonetheless, after more than ten years of intensive lobbyism and press work only weak successes can be registered. Only the example of the Netherlands and the UK can be judged as honest solutions. Here the legal framework has been set up to allow the installation special parking zones within the ordinary kerb side parking areas. The Dutch approach has to be understood as a consequence of an open dialogue between municipal and national administration and the "Stichting voor Gedeeld Autobruk" (enowment for shared car use), a national endowment for Car-Sharing interests that on one hand provides prospective customers with information on all Car-Sharing suppliers and which helps municipalities finding the best supplier for their city or even setting it up on their own.

In Italy only public services are entitled to use public parking space which is another good reason for the implementation of a Car-Sharing scheme directly by the local public transport company.

In Germany up to now all attempts to alter the legal basis within the national road traffic act have failed. Areas declared and registered as public parking space may not be occupied for other purposes - with the exception parking areas for busses, taxi or cars of handicapped persons. In many cities however direct negotiations with local municipalities have led to the possibility of renting parking lots situated on so-called "fiscal ground". These are surfaces owned by the city and usually already used but not legally declared as parking areas. German municipalities however still could improve their sustain within
the boundaries of local legislation. As a determined public proceed allows the transfer of zones registered as public parking space into zones for other determined purposes, provided that within a determined time period after the public announcement nobody disagrees. Proceeds like these have been completed successfully for example in Sangershausen or Saarbrücken.

Almost from its start Car-Sharing has been the focus of several attempts to be integrated into alternative urban projects. Hollerland in Bremen and Westerpark in Amsterdam are only two examples of approaches to combine new, especially ecological and social housing schemes with Car-Sharing. Those initial car-free concepts were mostly implemented in new districts with differing results. The examplarily disappointing development of the Hollerland scheme showed two important results:

1. Flats or houses within car-free housing concepts should not be offered exclusively for purchasing purposes - the wish to live in a car-free area often seems to be a temporary one that rather harmonises with renting.

2. Car-free schemes must not be situated too far from the city centre in order to match the desire of having a quick access to all urban infrastructural institutions (shops, culture etc.).

Today co-operations of housing companies and Car-Sharing suppliers therefore rather stick to supplies for buildings within existing residential quarters with a good connection to public transport. Within offers like these, the Car-Sharing deposit usually is integrated into the flat’s rent deposit in order to make those buildings more attractive. In several cases the housing company compensates the eventual losses, which may evoke from these locations as part of the co-operation contract.

For further information on the urban planning topic see moses WP6: "How public and private organisations support city car share clubs: A world-wide review" by Dr. Marcus Enoch.

3  The offers - existing and planned system services

Here only systems or products that have entered the Car-Sharing market are described. As several Car-Sharing suppliers have developed car access technologies and/or software on their own or in co-operation with partner companies, the market situation still is much more heterogeneous. An example for such developments are components implemented by MobileSystems at MFO Stockholm - up to now, the applied smart card based access technology as well as the software are applied exclusively by MFO.

3.1 Technology providers

3.1.1 Drive-IT

Drive-IT has started recently to launch its on-board computer system on the European Car-Sharing market. Up to now 20 companies in 4 countries are applying or testing the system. After a first phase of testing and investigation, Drive-It now wants to introduce itself as a modern telematic supplier. Till end of 2001, 500 units shall be sold.

Access technology

Drive-It exclusively offers a stand-alone on-board-computer system (no lockers) with reservation check. The components are similar to the product offered by Invers (see chapter 3.1.2): touch-less smart card, reading device, on-board computer, GSM-modem. The system however works on a bearer service basis instead of SMS transmission, using an own GSM-net and permitting direct modifications of the reservation right from the on-board-computer by 2-way-communication. Moreover, the system registers the removing and returning of the fuel card.

Software

Drive-It offers an own software product for reservation, administration and billing within the DVCarPool product line. Reservation is possible via internet, WAP and ARS. Interfaces for other reservation software products are possible (e.g. Ebus).
Services

Beside the supply of telematics and communication, Drive-It services are limited to training and support for licensed sales partners.

Drive-IT Systems AB
Sales & Marketing
Datavägen 12B
S-436 32 Askim, Sweden
www.driveit.se

3.1.2 Invers

Located in Siegen, Germany, Invers is the number one provider in Car-Sharing access technology. Up to now more than 65,000 smart cards have been produced giving the access to 4000 cars of 60 Car-Sharing companies in 8 countries.

The system components offered:

Access technology COCOS

Invers provides two types of access-solutions: The stand-alone and the key-manager version. The stand-alone version consists of an on-board-computer (BCHT) to be installed into the car, a smart-card reading device, an additional immobilizer system and a GSM-modem for data interchange. Customer reservations are transmitted via SMS to the on-board-computer. A customer can open the car with his smart-card if a valid reservation is registered for him. After opening the doors a PIN has to be entered into the computer in order to deactivate the immobilizer. The computer registers the mileage and sends the data back to the reservation centre after the trip.

The key-manager is an intelligent locker system giving access to up to 16 car-keys. Here, the reservation-check and data transmissions are managed by a computer and GSM modem built into the locker. The customer has to hold his smart card in front of the locker’s reading device and enters his PIN. If a reservation is registered the locker unlocks his door and the respective car key, highlighted by a LED, can be removed. In combination
with intelligent reservation software (e.g. cambio) an optimised car occupancy management is possible. The key-manager system can be installed with or without an additional immobilizer and on-board-computer (BCKM) for mileage registration and additional theft safety.

In both cases, the running of the Cocos system requires the further purchase of smart card personalisation device and of the SMS-transmission software CUCM both offered by Invers too. The system is designed for one-way trips too and can be combined with GPS on request. Its interfaces are compatible to all current Car-Sharing software products.

Software
Beside the data transmission software, Invers offers a reservation, billing and administration programme (Cocos 2000) including Internet and WAP reservation as well as automatic data take-over from on-board and key-manager computers.

Services
Invers offers reservation and billing services for company-fleets with up to 100 cars.

INVERS GmbH
Bismarckstr. 22
D-57076 Siegen
www.invers.com

3.2 System services

3.2.1 cambio
cambio is the parent company of branch companies in 6 cities and Germany's number 3 in Car-Sharing with over 7000 customers. Whereas its local subsidiaries are traditional Car-Sharing suppliers the parent company cambio KG is the first complete Car-Sharing system service provider in Germany. In spring 2002 a further 50% subsidiary company of cambio will start a nation-
wide Car-Sharing offer in Belgium, using the central services by cambio KG too.

The cambio-system consists of several modular services.

- Software services: multilingual internet-based client-server solutions for reservation (software for reservation by local branch and call centre employees, and internet reservation) and administration (fleet, location, tariff, customer an workflow management - update by end of 2001). cambio applies Invers access-technology.

- Reservation service: own call-centre and electronic reservation

- Reservation service: own call-centre and electronic reservation

- System service: e.g. product design, workflow, branding

- Back-office services: e.g. billing, fleet management and purchase, controlling and budgeting

Interested companies may choose between the different services and do not have to join a complete system necessarily. The local Car-Sharing companies keep their own legal form and can concentrate their work on local marketing and co-operations. The further development of the cambio system is one of the moses project's focuses.

cambio
MobilitätsService GmbH & Co. KG
Humboldtstr. 131-137
D-28203 Bremen
www.cambioCar.com

3.2.2 DBrent

In July 2001, the German Railway subsidiary DBrent announced its start for the end of this year. DBrent intends to raise a homogeneous nation-wide offer all over Germany. The idea is to include all existing companies under a common franchise-roof. These economically independent companies should use the central Car-Sharing services provided by DBrent. The aim is to achieve 75000 customers by end of 2006. Currently first negotiations with the suppliers in Berlin and Frankfurt/Main have been completed successfully. The scheme got started in Berlin in December 2001. As DBrent took over the teilAuto call-centre in Halle/Saale, the first operating elements are the reservation centre (serving 12000 customers currently) and a billing service.

\[\text{4 cf. Frankfurter Rundschau, 13.08.2001}\]

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3.2.3 Mobility

Mobility is the biggest Car-Sharing provider world-wide. It serves 44000 customers in 350 Swiss cities with 1700 cars. Mobility has developed own car access and software products.

The available system services consist in operations (front- and back-office execution of Car-Sharing service, reservation service, technology etc.) and support (consulting for Car-Sharing and fleet management). If an interested company or institution (outside Switzerland) wants to start up a joint Car-Sharing scheme, Mobility takes over the complete operations and the local partner company cares about the retail (local marketing, car maintenance, troubleshooting). The local company however keeps its own legal form, brand and corporate identity.

The applied access-technology is a stand-alone on-board-computer version based on SMS data transmission. The components are similar to the product offered by Invers (see chapter 3.1.2): touch-less smart card, reading device, on-board computer, GSM-modem. Moreover, the system registers the removing and returning of the fuel card. The software components are described in chapter 3.3.2.

Mobility CarSharing
Mühlenplatz 10
CH-6000 Luzern 5
www.mobility.ch

3.2.4 Smart Moves

Smart Moves presents itself as a Car-Sharing system service provider on the UK-market. Following its web site Smart Moves provides

"An Internet based reservations service, using custom designed software. A telephone based booking service is available as an alternative. A help desk with a dedicated telephone number to assist members with any problems which may arise. Back office services for cost-effective management of membership processing and invoicing Collection of payments may either be handled locally or included in the services provided. Awareness
raising through presentations at public events, featuring successful city car clubs in Britain and Europe. Feasibility studies and business planning, including surveys of prospective members. These have been undertaken in a number of cases in association with RATC (Richard Armitage Transport Consultancy)." 

Smart Moves  
The TechnoCentre  
Puma Way  
Coventry CV1 2TT  

www.smartmoves.co.uk  

3.2.5 Stadtmobil  
Stadtmobil in Dortmund is Germany's third biggest Car-Sharing supplier with cars in 17 cities. Stadtmobil disposes of an own reservation call centre and own software. Unfortunately no further information about its system services were collectable.  

stadtmobil CarSharing GmbH  
Huckarder Straße 12  
44147 Dortmund  
www.stadtmobil.com  

3.3 Single products  
Here only products purchasable without the need to buy additional system components are stated.  

3.3.1 Ebus  
Ebus is a reservation software product by Chitec, Hannover. This programme is applied by 19 Car-Sharing companies in Germany and compatible to the Cocos-system of Invers and Drive-It. It provides all necessary features including internet reservation.  

chitec OHG  
Vahrenwalder Str. 7  
30165 Hannover  
www.chitec.de
3.3.2 **Mobisys**

Mobisys is a reservation, administration and billing software product by Mobility Switzerland. It is compatible to the Mobility car-access system. It provides all necessary reservation features (including internet, WAP and ARS) the management of fleet, locations, tariffs and customers.

Mobility CarSharing  
Mühlenplatz 10  
CH-6000 Luzern 5  
www.mobility.ch

3.3.3 **OekoCar**

OekoCar is an administration and billing software product by Chitec, Hannover. It is compatible to the Ebus reservation programme and applied by several Car-Sharing companies. It provides the management of fleet, locations, tariffs and customers.

Chitec OHG  
Vahrenwalder Str. 7  
30165 Hannover  
Germany  
www.chitec.de

3.3.4 **Pfaust2000**

Pfaust2000 is an administration and billing software product by CARe, Bremen (95% subsidiary of cambio). It is compatible to several reservation programmes and applied by several Car-Sharing companies. It provides the management of fleet, locations, tariffs and customers.

CARe GmbH  
Humboldtstraße 131-137  
D-28203 Bremen  
www.cambioCar.com

3.3.5 **Rentalsfleet**

Rentalsfleet is an ASP-software solution for Car-Sharing, car rentals and company fleets. It includes all relevant modules for reservation, fleet and customer administration and billing. Cus-
Customers and employees may work on a single server within a secure internet connection. Following IVU's web site information the programme is designed multilingual and optimises internal workflow. Though this product appears to be one of the most modern developments, there is no Car-Sharing company applying it up to now.

IVU Traffic Technologies AG
Bundesallee 88
D-12161 Berlin
www.rentalsfleet.com
4 Closing comment

The current state of the art in Europe’s Car-Sharing business is still characterised by the absence of standards of any kind. Intensive standardisation intents e.g. from the European Car Sharing endowment (ECS) for prices, using conditions, access technologies etc. have let to almost nothing. The existence of technology providers and of first system service providers is based on the expectation, that the market itself will force the harmonisation of the different approaches. In Italy the work of the I.C.S (Iniziativa Car Sharing) will show, whether or not a governmental attempt will be able to establish standards right from the start.

The reality within the most recently installed schemes across Europe however show, that even today decision makers seem to prefer the development of completely new systems, often even with own technology, instead of buying proven services. This might be due to the lack of knowledge about the existence of these services or to the simple fact of self-reliance intentions.

I hope this report and the entire moses project will contribute to a higher awareness of the actual market situation, so that future schemes can profit from the inherent experience of existing services. At least the European Car-Sharing customer certainly will appreciate this very much.

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5 In fact the support Italian Car-Sharing schemes receive from the I.C.S. is unique: Equipped with about nine million € from Italian Ministry of Environment, the Iniziativa with its headquarters in Genova encourages prospective Car-Sharing managers to set up scheme by providing them with legal and technical assistance (e.g. using conditions), design of the systems and communication and promotion services at a national level. Also for the running business the support continues: services of promotion, communication and marketing at a local level, call centre services, fleet management services, software and car access technology are offered in a standardised way.

The entire support is based on a co-financing at the maximum value of fifty percent of the full value of the service investments over the first three years of the service.

Up to now the I.C.S. has been joined by the municipalities of Bologna, Genova, Firenze, Modena, Rome, Torino, Venezia, Brescia, Reggio Emilia, Parma and the province of Milano. About other forty Italian cities, at the moment, showed their interest to join ICS.

The I.C.S. however has not the intention of serving as a lasting service provider.
## Annex 1: moses-Questionnaire-
### Participants

<table>
<thead>
<tr>
<th>Organization</th>
<th>Address</th>
<th>Website</th>
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<tbody>
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<td>Via Saliceto, 3 40128 Bologna Italy</td>
<td><a href="http://www.atc.bo.it">http://www.atc.bo.it</a></td>
</tr>
<tr>
<td>Autodate - Stichting voor Gedeeld</td>
<td>St. Jacobsstraat 331 3511 BP Utrecht Netherlands</td>
<td><a href="http://www.autodate.nl">http://www.autodate.nl</a></td>
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<td>Autogebuijk</td>
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<td>Die Autonative e.V.</td>
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<td>AutoParat Coburg</td>
<td>Alexandrinenstraße 10 96450 Coburg Germany</td>
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<tr>
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<tr>
<td>BathCar Share Club</td>
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<td>Bilkollektivet Oslo</td>
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<td><a href="http://www.book-n-drive.de">http://www.book-n-drive.de</a></td>
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<td>cambio Aachen Stadtteilauto CarSharing GmbH</td>
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<td><a href="http://www.cambiocar.com/">http://www.cambiocar.com/</a></td>
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<td><a href="http://www.cambiocar.com/">http://www.cambiocar.com/</a></td>
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<td>Humboldtstraße 131-137 28203 Bremen Germany</td>
<td><a href="http://www.cambiocar.com/">http://www.cambiocar.com/</a></td>
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<td><a href="http://www.cambiocar.com/">http://www.cambiocar.com/</a></td>
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<td>Stattauto CarSharing GmbH</td>
<td>Germany</td>
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<tr>
<td>cambio Saarbrücken</td>
<td>Saaruferstraße 11 66117 Saarbrücken</td>
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<tr>
<td>CarPool GmbH</td>
<td>Hugo-Eckener-Ring, Gebäude 116 60549 Frankfurt</td>
<td><a href="http://www.carpool.de">http://www.carpool.de</a></td>
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<tr>
<td>CarSharing Ingolstadt e.V.</td>
<td>Frühlingstraße 31 85055 Ingolstadt</td>
<td><a href="http://www.bingo-ev.de/~ah2110">http://www.bingo-ev.de/~ah2110</a></td>
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<tr>
<td>CarSharing Lindau e.V.</td>
<td>Schöngartenstraße 28 88131 Lindau</td>
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<tr>
<td>Denzeldrive CarSharing GmbH</td>
<td>Erdbergstraße 189 1110 Wien</td>
<td><a href="http://www.denzeldrive.at">http://www.denzeldrive.at</a></td>
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<tr>
<td>Dorfmobil e.V.</td>
<td>Pappelweg 28 A 73087 Bad Boll</td>
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<tr>
<td>fahrgut car-sharing hegau-bodensee</td>
<td>Haselbrunnstraße 69 78315 Radolfzell</td>
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<tr>
<td>Grünes Auto Göttingen</td>
<td>Bahnhofplatz 1 37073 Göttingen</td>
<td><a href="http://www.gruenes-auto.de">http://www.gruenes-auto.de</a></td>
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<tr>
<td>Hertz Delebilien</td>
<td>Vester Farimagsgade 1 1606 København</td>
<td><a href="http://www.delebil.dk">http://www.delebil.dk</a></td>
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<td>Majornas Bilkooperativ</td>
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<tr>
<td>Ökostadt e.V. Konstanz</td>
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<td>Ökstadt Tübingen e.V. -teilAuto</td>
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<td>VCD-Gemeinschaftsauto Esslingen</td>
<td>Schelztorstraße 2, 73728 Esslingen, Germany</td>
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</table>
6 Annex 2: Questionnaire for Car-Sharing Companies

I Company

I.1 Legal aspects
I.1.1 Which is the legal status of your company?

I.2 Structure
I.2.1 Are you working locally or do you serve other cities too?
I.2.2 Do you have branches?
I.2.3 If yes: How many?
I.2.4 If yes: How is the legal status of your branches?

I.3 Locations and Cars
I.3.1 How many cars do you actually offer to your customers?
I.3.2 In how many cities?
I.3.3 How many locations do you offer to your customers?
I.3.4 Do you offer Car-Sharing in rural areas?
I.3.5 If yes: What is the smallest town where you offer Car Sharing (based on the number of inhabitants)?

II Marketing

II.1 Measures
II.1.1 Which measures do you use to get new customers?
II.1.2 Which measures do you use to bind your customers?

II.2 Co-operations
II.2.1 Do you have co-operations which are relevant for marketing?
II.2.2 If yes: Please give a short description?
II.3 Evaluation
II.3.1 Do you evaluate your marketing measures?
II.3.2 If yes: Please name three measures which have the biggest success?

II.4 Customer Satisfaction
II.4.1 Do you make customer inquiries concerning their satisfaction?
II.4.2 How often?
II.4.3 Which media do you use?
II.4.4 Do you communicate the results to your customers?

II.5 Commercial Customers
II.5.1 How many commercial customers do you have, including authorities and municipalities (in percent relating to all your customers)?
II.5.2 How high is the percentage of commercial use within the overall use of your fleet?
II.5.3 Do you use special marketing strategies to get commercial customers?
II.5.4 If yes please give a description:

III Operations

III.1 Fleet management
III.1.1 Is your purchase centralised?
III.1.2 Are you a member of an independent car purchase pool?
III.1.3 For how many cars is one fleet-employee responsible?
III.1.4 What kind of skills must your fleet staff have in your opinion?
III.1.5 Do you have qualified damage-management staff?
III.1.6 How do you cash up with your insurance company (individually per damage, once a year, re-buying of reimbursements,...)?
III.1.7 Has your fleet a service car for your staff?

35/38
III.1.8 If yes: How many service cars do you have in relation to your total number of cars?

III.1.9 Do you have external companies who take care of your fleet?

III.2 Reservation Service

III.2.1 Do you offer an own reservation service?

III.2.2 Is it a 24 h service on your own, or do have external companies for certain times?

III.2.3 Beside the reservation, for which tasks is the reservation service responsible (damage-management, database-management)

III.2.4 Where is your reservation service located?

III.2.5 Are you satisfied with your reservation service?

III.3 Customer care

III.3.1 Which are the opening ours of your local office?

III.3.2 How many customers do you have in relation to one service employee?

III.3.3 Do you offer regular Information evenings with the possibility to make a contract?

III.4 Administration Improvement

III.4.1 Did you analyse your workflow in your company and search for ways to improve the workflow?

III.4.2 Are you satisfied with your administration effectiveness?

III.4.3 Would you bee interested in a defined and optimised workflow?

III.5 Software and Access Technology

III.5.1 What car access technology do you use?

III.5.2 In all your locations?

III.5.3 In which level (e.g. access control, ...)?

III.5.4 Do you think about changing your system?

III.5.5 What kind of reservation software do you use?

III.5.6 Do you offer internet reservation to your customers?
III.5.7 Are you satisfied with your system?

III.5.8 Which other products do you know?

III.5.9 Which administration and calculation software do you use?

III.5.10 Is the automatic ride registration implemented in this system?

III.5.11 Are you satisfied with this system?

III.5.12 Do you know other products?

III.6 System Offers

III.6.1 Is your company offering Car-Sharing system services?

III.6.2 If yes: How do you offer your system?

III.6.3 If no: Are you interested in buying Car-Sharing systems?

III.6.4 If yes: Which services are you interested in?

III.6.5 How do you judge the market for Car-Sharing service systems?

III.7 Product Innovation

III.7.1 Which innovative products beside Car-Sharing do you offer?

III.7.1.1 Open End

III.7.1.2 Instant Access

III.7.1.3 One Way

III.7.1.4 CashCar

III.7.1.5 Special offers for commercial customers

III.7.1.6 If yes, please give a description

III.8 Intermodality

III.8.1 Do you have co-operations with public transport companies?

III.8.2 If yes: Where are the interfaces?

III.8.3 Do you offer mutual products?

III.8.4 If yes, please give a description
III.8.5 Are your customers interested in these products?
III.8.6 Is there any special technical development in this area?
III.8.7 If yes, please give a description
III.8.8 Do you have co-operations with taxi companies?
III.8.9 If yes: Where are the interfaces
III.8.10 Do you offer mutual products?
III.8.11 If yes, please give a description:
III.8.12 Are your customers interested in these products?
III.8.13 Is there any special development in this area?
III.8.14 If yes, please give a description:
III.8.15 Do you have co-operations with car rentals?
III.8.16 If yes: Where are the interfaces?
III.8.17 Do you offer mutual products?
III.8.18 If yes, please give a description:
III.8.19 Are your customers interested in these products?
III.8.20 Is there any special technical development in this area?
III.8.21 If yes, please give a description: