

A Comparison of Car Sharing Organizational Models: An Analysis of Feasible Efficiency Increase through a Centralized Model¹

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Abstract: Car sharing seems to have the necessary characteristics to compete in the fulfilment of the gap between mobility offer and demand at international level considering that an offer exclusively based on collective transport systems is not appropriate to satisfy some of the modern transport needs.

Nevertheless it is only after the system reaches an economic equilibrium that it will be possible to include car sharing between the new travelling modes provided to the community without aggravating the already exhausted public finances devoted to mobility. In this sense, this work focuses on the organizational model and particularly on its possible efficiency derived from a transition from the current model made of autonomous Local Units to a centralized model.

Therefore the main goal of this work is that of evaluating if the centralization of some service costs and a different organizational structure could create cost reduction with the scope of improving the economic equilibrium conditions.

This work shows, through a summary of the main international organizational models and an analysis of the Italian case, how the car sharing system can be managed without public contribution (or with contributions devoted only to the start-up phase) and determine an entrepreneurial reality in the case of the development of a centralized organization and avoiding the presence of a plurality of small local operators. It is therefore desirable that the new car sharing operative realities and the already existing ones with a decentralized nature evolve from a fragmented and local organizational phase towards a more mature phase where there is only a few operators or a unique operator in the market.

After a review of the main European models of car sharing organization, the attention is placed on the Italian organizational model and particularly on the possible efficiency increase derived from the transition from the current model organized in different Organizational Local Units (one for each city where the service is active) towards a centralized model.

The main goal of the study is then to evaluate in which degree the centralization of some service and structure costs and a centralized organizational structure could provide significant cost containments with the scope of improving the economic equilibrium conditions and to allow a development of an alternative mobility system to that of the private vehicles.

JEL Classifications: L11, L16, R42

Keywords: Car sharing, Organization, Efficiency, Data analysis

¹ The research is funded by data (2009) obtained from the balance sheets and through direct interviews with the 10 Car Sharing Local Units and Iniziativa Car Sharing. In some cases when there was an absence of information it was necessary to proceed with estimations that were always agreed with the Local Units and ICS, the same is applied to the used usage parameters.

1. Introduction

The chosen topic for an in-depth study seems to be of interest in a moment when the cities have to deal with a lasting increase of mobility- in terms of the number of displacements and of the travelled distances- and a growing need to limit the negative externalities that could only be possible with the use of an adequate set of instruments and policy lines (Enoch, Taylor 2006; Santos, Behrendt, Teytelboym 2010).

In such context car sharing could become, like in other countries, an important service to overcome the existing gap between mobility demand and offer due to the fact that an offer exclusively based on traditional collective transport systems is inadequate to satisfy the modern mobility needs (freight mobility, mobility with specific itineraries and/or schedules, etc.).

This kind of service allows the use of the car without its ownership (Pretenthaler, Steininger 1999), has the potential of becoming a part of the passenger urban transport with a benefit for the community for at least three different reasons: 1) the preferences of the person making the trip are driven by a higher comfort perception, a higher diffuseness and flexibility; 2) the overall demand of urban mobility is in average rigid in comparison to other explanatory variables and therefore cannot be compressed under a certain threshold (showing that the merely restrictive mobility policies are not efficacies); 3) the meagre capacity of the collective transport firms to satisfy a mobility demand that is space and time-demanding from the quality point of view.

The car sharing system could place itself, as it occurs in some European countries, between the mobility services in a sort of system altogether with the collective transport, making the most from the qualitative aspects close to those of the private individual transport and social and environmental aspects derived from the containment of the negative externalities (Muheim, Partner 1998; Huwer, 2004). Such potential can be developed if the costs connected to the service make it an interesting alternative.

In such sense the review of the functioning of the car sharing system in the main European countries (Shaheen, Sperling, Wagner, 1998; Britton 1999; Burlando e Mastretta 2007) and the analysis of the Italian case underline the importance of the organizational model as a discriminating element for the operation of the system without the need of public contributions or with its reduction to the planning and start-up phases.

The analysis of the Italian case is relevant to highlight, on the one hand, the difficulties of a decentralized system, and on the other, to evidence the higher potential of a centralized organizational scheme. The current organizational model that sees the existence of a Local Organizational Unit (LOU) for each urban reality where the service is active is examined. After that a National centralized organizational model is hypothesized where there will be a central unit, that will have only a reduced number of activities at local level. The construction of such organizational model, on the basis of real data provided by the LOUs, has been conducted to understand the possible efficiency increase of this model in comparison with the de-centralized one. The goal is then to evaluate if a different organizational structure from the current de-centralized one based on the LOU, and the centralization of some functions (and consequently of the costs, especially those linked to the personnel) could lead to significant cost reductions with the scope of improving the economic equilibrium.

It is in fact only when the car sharing system reaches an economic equilibrium that this instrument could be a part of the new travelling possibilities offered to urban communities without aggravating the public finances devoted to mobility.

The work is organized as follows: first an analysis of the current structure of the sector and of the motivations that drive the change are analyzed, after that the attention is focused on the study of a centralized model in terms of its methodological and organizational aspects, finally the conclusions are highlighted under the double aspect of the advantages (economic and operative) and criticalities of a centralized organizational model in relation to main foreign models.

2. Literature Review of the Main Car Sharing Organizational Models

Even if car sharing was conceptually born by the end of the 40's² (d'Welles, 1951) the actual implementation of a system of shared cars starts in the end of the 1970's and it is only by the beginning of the following decade that we can see the creation of a real organization, initially in Central Europe (for a review of the first experiences, that have had quite a short life, see Petersen, 1995; and Britton, 1999).

From a geographical point of view, it can be said that apart from its conceptual birth in Zurich in 1948, the car sharing starts in the 70's in France, the Netherlands and Great Britain³. These pioneering attempts- that are relevant only because they have dissociated the concept of car use from the concept of property- are followed by the first true successful organizations in Zurich, Lucerne and Berlin in the second half of the 80's. Currently the main car sharing organizations can be found in Switzerland and Germany followed by The Netherlands and Austria, while outside of Europe, Canada is the country where a relevant success has been reached recently with high degrees of development and competitiveness (for a further review of the main European and extra European experiences see Burlando, Mastretta 2007).

The first organizations were usually born from a social (allow the use of the car to those who cannot afford its ownership) and environmental (reduce the number of circulating vehicles) ideals, and have faced rapid bankruptcies due to their excessive orientations towards the ecological and social aspects and a low attention to the cost coverage.

Such start-up- quite unhappy from the point of view of the results but very relevant from the experimentation of a new concept of mobility- has rapidly left room to more efficient and less ideological systems: the original idea of multi-property of several dozen vehicles on the basis of the first European organizations that were initially of small size and with scarce market orientation- has been progressively abandoned and replaced by a structural offer organized according to rigid entrepreneurial criterion that, within a decade, has allowed to reach the economies of scale and the consequent growing advantages for the users in terms of tariff containment and diversification of the fleet.

Considering the main European car sharing realities, it can be observed how the organizational structure has evolved in the direction of a centralized model. Briefly, even if the car sharing system was born from the initiative of environmentalists and small local operators, like in the German and Swiss cases, the evolution has always led towards a type of centralized offer where the local level is in charge of limited matters mostly linked to the fleet management.

Regarding the Swiss Mobility Car Sharing situation- constituted in 1997 as a cooperative with the scope of offering its own members an economic and environmentally friendly option to the private vehicle- it is currently the biggest car sharing organization in the world: in June 2011 it has reached 100 000 registered users and it has the highest density of users in the world also thanks to

2 The first cooperative ("Sefage") was established in Zurich in 1948 with the scope of offering the use of cars to those that could not purchase them. For more detailed information on the historical development of car sharing see Burlando, Mastretta (2007), chapter 2; and for the main experiences before 1980 see Britton (1999).

3 "Proco tip" was born in Montpellier in 1971 as a cooperative, Witkar is an experience that took place in Amsterdam in 1973 and based on the sharing of electric vehicles, Green Cars is a project born in the United Kingdom in 1977. All the three cases have failed within some months mainly due to inadequate technological systems and with a lack of service altogether with an environmental/idealistic imprint that paid little attention to the cost coverage.

the fact that it is active in all the Swiss regions. The strategic choices adopted have dealt with the combined mobility (agreements and partnerships between Mobility and Railway) and the car sharing business (agreements with private firms, Local Administrations, Swiss Post and rental car firms). The organizational model is centralized with a unique cooperative company whose central direction is in charge of the main functions (finance, marketing, selling and customer service) leaving the local operators the activities linked to the management and maintenance of the fleet. Decentralized units have been placed at regional level as an interface between the Central Office and the external local operations to assure the uniformity of the quality to the users in the whole territory.

The first German car sharing administrator, second only after Mobility CarSharing Switzerland, was born in Berlin in 1988 and it was established as a limited company in 1990 with the name StattAuto CarSharing GmbH becoming in 1998 StattAuto CarSharing AG, a publicly participated limited company after the fusion with the car sharing operator of Hamburg. For more than fifteen years StattAuto has been leader in Berlin, Hamburg, Potsdam and Rostock and, from the end of 2005, it is controlled by 98,5% by the Dutch company Greenwheels from which it has taken the denomination. Regarding the organizational model a process of change has taken place due to reasons linked to the competence and the research of profit. Cooperative companies have been created in many German cities that had organized independent car sharing systems at local level which often turned out to be extremely fragmented. The market was then characterized by the prevalence of small monopolies until the mid 90's when some operators have become commercial organizations with a consequent intensification of competence, among them Bremen, Aachen and Cologne, whose fusion gave birth in March 2000 to "Cambio GmbH & Co KG" holding. This holding is the result of a growth strategy carried out by three German operators with the scope of spreading on the market (initially the German market but later the Belgian market becoming the first translational operator) thanks to a network of local firms managed autonomously with the same entrepreneurial imprinting of the brand "Cambio" but under the control of a centralized structure.

Another European experience worth mentioning is certainly Greenwheels in the Netherlands, constituted in Rotterdam in 1995 as a for-profit company. Differently from what has been observed for Switzerland and Germany where the service was born for social and environmental reasons, and only later on has "bent over" to the obtain profits, the Netherlands have adopted an entrepreneurial organizational model capable of providing a successful service at national level since the beginning. The main reason behind this strategy is that in the Netherlands there is no public funding for car sharing like in other European countries; in this sense the need to have important resources invested by privates, that it is compensated by a control of privates in the share holding, it is only made possible by the profit-model (Meijkamp 2000). Greenwheels presents since the beginning a strongly centralized structure, keeping the base of the Board of Directors and Central Direction in Rotterdam that is in charge of the strategic lines, while there are not de-centralized divisions at local level, but members of the operative staff to deal with the vehicle fleet.

Taking into consideration then all the development paths of the main European contexts⁴ (excluding Italy) it can be seen often that there are common characteristic in its evolution dealing with: (1) an initial phase with the constitution of small organizations (usually established by a group of environmentalists) that adopt growth policies based on the coverage of urban areas, initially central and then peripheral that progressively establish in the territory; (2) and expansion phase of the service through the fusion of different companies (usually after some years of activity) aimed at building up entrepreneurial organizational models capable of providing services at National level (in the German and Dutch case at translational level). From the analysis of the consolidated European experiences⁵ it can be observed how the possibility to remain in the market is carried out

4 The situation is analogue in the United States and Canada.

5 The same applies to the Canadian case.

through a progressive concentration of different operative local realities, something that seems to be a necessary condition for the achievement of an adequate and economically sustainable business dimension.

It is interesting to examine the Italian case where the system, started in 2002⁶, seems to rely upon a substantially different model than that of the main European contexts. The Italian experience represents in fact, an example of public intervention within a strategic planning aimed at activating an innovative mobility service, stimulating the demand and supporting the offer through financial and non financial contributions⁷. In some senses it has represented a paradigmatic experience of a certain type of public intervention aimed at stimulating the growth of the sector, which is worth analyzing in its main features.

With the scope of stimulating the development of a car sharing system a National body was created in 2000 as a series of conventions between Municipalities that were commissioned to manage the funds (a first financing of 9.3 million euros for the start up followed by a second funding of 10 million euros) and coordinate the activity of the companies in charge of providing the service at local level. The main function of the central organ it is not that of providing the system but creating the conditions to stimulate the start-up and growth by a coordinate operation concentrated on the demand and offer sides and that of the Public Administration. “Iniziativa Car Sharing-ICS” was then created in the end of 2000 gathering 12 different urban realities that shortly became 28 members. The situation in Italy- even if ICS acts a coordination of the different LOUs that belong to the system in relation to those factors that are common to the whole system (technology, contact centre, inter-operability and in general all those aspects that require a level of homogeneity between the operators)- currently forces a decentralized organizational model with a plurality of LOUs (one for each city where the service is active) that operate autonomously. In this sense, even if the growth rates of the global system are interesting, the dimension of the companies is limited and the offer is too fragmented.

The international experience, as mentioned briefly, shows how the car sharing is addressed towards the concentration of the offer and the presence of a few operators in the vast areas. In Italy this could be possible through the entrance, absorption and fusion, apart from the strict territorial expansion due to the fact that the coordination carried out by ICS and the current standardize productive, organizational and procedural models and their complete interoperability would allow, not only the expansion towards new markets of the single operators, but the convergence of the local circuits representing a possible aspect of strength of the hypothesis of a centralized model.

In such perspective an in-depth analysis of the degree of detail of the current organizational model is carried out on the basis of data provided by the LOUs and a possible path of change is sketched through a simulation of data and a hypothetical new organizational model.

3. The Italian Case: Current Structure of the Sector and Changing Needs

The Car Sharing service is organized in autonomous Local Units both economically and structurally. Such autonomy certainly has some advantages connected (i) to the high adherence of the operative choices to the local realities and therefore to the needs of both the territory and the

⁶ Before 2002 only one reality the city of Milan offered the car sharing system: this was Legambiente that in 2001 has started up the service for its own associates adopting a scheme that was strongly linked to the ecological principles and with strong limitations to its expansions due to lack of financial means.

⁷ A first financial aid of 9 300 000 Euros for the start up of the service was then followed by a second financing of 10,000,000 Euros.

communities; (ii) the possibility of having direct relations with the Local bodies; (iii) the decisional rapidity in case of extraordinary needs with obvious positive influence on the service and lastly (iv) the possibility to have direct relations with the local suppliers and as a consequence to create trust and rapidity in the supplies.

The analysis carried out at Italian level shows a limited economic efficiency of the service and a wide range of possible improvements given the current conditions. The urban realities in which the service operates show such a deficit that a consistent public contribution is necessary: by the end of 2009 the estimated amount of local managers' losses was close to 2 million euros. The authors' opinion is that the service can account as public utility and that could motivate an economic support, limited in its time and entity, yet what becomes object of analysis is the combination of inefficiency conditions that can be reduced if not eliminated thanks to a different organizational model in line with those of the main European operators.

In particular the attention is focused on some relevant aspects derived from the current decentralized organization that can be summarized as follows:

- 1) duplication of organizational functions and of their costs as a consequence (Board of Directors, managerial functions, etc.);
- 2) separate negotiation with the suppliers for the allocation of the same type of services that influence the costs;
- 3) non-homogeneity of the quality of the service offered by the different Local Units;
- 4) lack or incomplete standardization of procedures;
- 5) low possibility of success in the quest to achieve agreements at institutional level and legal recognition of car sharing.

These are basically inefficiency aspects linked to topics we could define as cost, quality, legal and economic recognition.

Points 1 and 2 summarize the strictly economic inefficiency aspects: the analysis that has been carried out shows, as we will see it in detail, that through a centralized organizational structure (and in particular through the centralization of the marketing and production macro-areas) with slender local units significant cost restraint, at the same level of service, the scope of improving the economic equilibrium can be accomplished⁸.

There are aspects of inefficiency that are linked to quality aspects (points 3 and 4) and that see the reorganization useful under the profile of a service improvement for customers. In a context in which the use of the city is ever more often carried out on behalf of non residents the possibility to supply a standard service in each city where the service is operative is certainly an advantage in the competition with the private and with the traditional collective means.

Finally (point 5) if car sharing aims at becoming, just like in other European realities, a means to satisfy part of the demand for urban mobility it is necessary that local policy makers become aware of it. The actions of the local administrations however, can subsist only if car sharing will become a legally recognized entity and if, as a consequence, it will have an adequate regulation of the service both for the users and potential users. It is clear that such legal recognition (and afterwards social) will be more easily achieved once the sector will be as compact as possible in its request to prepare a suitable legislation for a better functioning of the service.

The upcoming paragraph provides a description of the main phases of the research that has analyzed a centralized car sharing structure describing the functions of the Local Operative Units, the structural articulation of a presumed Central Organizational Unit (COU) office with the consequent relapses on the costs and incomes of the entire system.

⁸ Clearly the degree of the cost containment is quite different with a net prevalence of the containments linked to a reduction of the organizational functions duplications.

4. A new Operative Reality: Economic-organizational Structure of Aggregation

The adopted methodology has foreseen the following phases:

- 1) development of a computer bases instrument aimed at containing the economic cost of the Local Organizational Units and of the Central Organizational Unit. With the scope of creating a classification of the costs and revenues of the Organizational Units and carrying out a sensitivity analysis and a simulation of the economic trend of the aggregated structure it was decided that the use of Microsoft Excel 2003 programme was the most suitable choice to pursue the established goals with clarity and practicability that are in the basis of the project;
- 2) individuation of the costs that could suffer variations after a centralization of the structure, quantification of that variation, and individuation of the type of centralized organizational structure. This phase has considered a series of interviews aimed at the operators of the sector with the scope of complete and detailed picture of the costs that influence the company's balance sheets: their nature and the possibility of a future centralization has been analyzed, taking into consideration the different advantages and disadvantaged for both users and operators. Consequently, an hypothesis of organizational structure has been developed taking into consideration in full detail all the tasks of both the Local Organizational Units and the Central Organizational Unit;
- 3) comparison between the profit and loss account of the Local Organizations Units in a de-centralized organizational structure and also then with the hypothesis of a centralized entity within the centralized model. An economic simulation has been carried out with the indicated instrument (see point 1) with the scope of: (i) highlighting the variation of the economic results and the operative margins that derive from an aggregation of the Local Organizational Units, (ii) individuating the overall cost containment of the system and (iii) individuating the rates of growth to reach the breakeven point.

In the Italian case the organization of a centralized Car Sharing structure is based on the introduction of the Central Organizational Unit (COU) that substitutes the current structure constituted by autonomous Local Organizational Units (LOU).

The analysis that has been carried out is articulated through (i) a definition of the functions of the COUs and LOUs, (ii) a simulation of the economic performance of the centralized Car Sharing structure, through real data provided by the single operator⁹ and (iii) a comparison with the economic results of the current de-centralized organization.

The activities that characterize the current Italian Car Sharing organization can be identified in the macro-areas of (i) System Management and Administration (ii) Marketing (iii) Call Centre Management and (iv) Fleet Management and Maintenance.

The tasks of each LOU have been identified using the cost reduction at the same level of provided service as discriminator and only those tasks that cannot be carried out efficiently at central level have been delegated to the Local Units. In particular, to provide an effective and more coherent service in terms of the territorial contact and client' requirements, it has been considered correct to entrust the LOU with all the activities linked to the fleet maintenance, client assistance and support to the Commercial Direction for their area of competence.

⁹ The data for 2009 were obtained from the balance sheets and through direct interviews with the 10 Car Sharing Local Units and Iniziativa Car Sharing. In some cases when there was an absence of information it was necessary to proceed with estimations that were always agreed with the Local Units and ICS: The same is applied to the used usage parameters.

The COU assumes then a functional structure with strategic, executive and coordinating tasks on the LOU, keeping though all the activities linked to the management and administration of the entire system (that include, for example, the personnel training, management of the Call Centre services and all activities linked to the Marketing).

This central subject also assumes a strategic role in the negotiation with the different suppliers. The centralization of the supply contracts, such as the purchase of on-board instruments and high-tech and the rental/purchase of the vehicles, guarantees higher possibilities of choosing suppliers that are more reliable in qualitative terms, a higher negotiating power and a cost containment as a consequence of possible economies of scale. From an analysis carried on through direct contacts with suppliers it has been estimated a cost containment of approximately 8%.

The assignment of functions to the new Central Organizational Unit and Local units is a crucial phase because it allows the possibility to analytically define the economic performance of the new centralized Car Sharing structure.

With the scope of carrying on a simulation of the economic performance of the aggregated structure an analysis model of the sensitivity and classification of the costs and revenues has been formulated that has led to the individuation of an overall containment of the costs of the entire system.

The economic performance of the aggregated structure has been analyzed using effective cost and revenue data for 2009 (therefore in a de-centralized situation). The preparation of an economic simulator has allowed individuating the variability of the economic revenues if the organization structure is modified.

Confronting the costs ascribed to the Local Units in a centralized and de-centralized situation a relevant reduction of the “vital” costs of the structure can be observed (of around 50%) that is determined, on the one hand by the reduction of the local personnel, and on the other by the fact that a structure with a centralized organization is contained in terms of dimension and functions.

The economic simulation has also allowed reaching:

- 1) a quantification of the costs for the LOUs that in a centralized situation reach approximately 1.9 million euros;
- 2) a quantification of the turnover of the COU, individuated as the addition of the LOUs turnovers, that is of around 5.7 million euros and a quantification of the costs that reach 3.7 million euros;
- 3) the consequent quantification of the economic results of the COU of around 2 million euros, that is enough to cover the costs indicated in point 1.

From the analysis it can be seen that the system, seen in a centralized organizational situation is capable of reaching a break-even point from the first year, just the opposite of what happens with the current de-centralized organizational situation.

5. Results and Conclusions

The current study has tried, on the basis of the analysis of the functioning of the car sharing system in the main foreign realities and in the current Italian model, to highlight what are the advantages of the centralized organizational model from the point of the view of the costs and of the possible development and diffusion of the car sharing system.

Regarding the relation between the Italian case and those of the main European context, the scenario shows that one of the winning strategies in the leader countries has been the concentration of the service in the hands of a few operators or even only one. In such way in fact, it is possible to

achieve a critical threshold (users) that justifies the service from an economic point of view or that gets close to it.

The risk attached to an excessive concentration of the offer is yet not present for a series of reasons that characterize this market and that lead mainly to the topic of competition between substitutive goods. From this point of view it can be observed that the monopoly or oligopoly can subsist as regards the demand of car sharing services but not as regards the urban mobility that is potentially satisfied by a set of transport options (private car, local public transport, taxi, by foot or bike) that represent in fact a form of competition for the car sharing even if its managed only by one subject.

From the point of view of the dimension and structure of the offer in the analyzed national contexts it has been noticed that there is a predominance of big operators that have moved towards the concentration of the market. Particularly, dealing with the German market, it is clear since 2001 that there is a concentration of the offer where the four big operators¹⁰ serve 65% of the users, while the medium sized operators serve 22% of the clients, leaving to the small firms the remaining 13%.

In the Swiss case where the market is definitely dominated by one operator, Mobility CarSharing Switzerland, the share of clients served by the big operators reaches an 82%, leaving an 11% to the medium sized operators and a mere 7% to the small operators¹¹.

In terms of the offer structure, the situation in Italy is certainly backward and the concentration of the market is still far away with the presence of a plurality of local operators that, even if coordinated, harmonized and standardized by a central organization, does not represent a mature market.

From the Italian situation and the data analysis that has been carried out, it can be stated that the de-centralized market represents a cause of inefficiency and difficulty for the system to operate in the market without the support of public financing.

The Italian situation differs from that of the international scenario because there is not yet a global actor, while there is a fragmentation of companies that operate at local level. The development perspectives deal with an expansion of the service that should take place under the strategic path that has been identified in the more consolidated experiences.

One of the motivations in the Italian contexts for which it is necessary and desirable to achieve a higher degree of participation of the public subject aimed, is not to the mere assignment of funding but action in favour of the concentration of the offer process, avoiding the proliferation of pulverized subjects, scarcely capitalized and therefore with a higher risk of mortality.

Regarding the analysis of the Italian case and therefore the study of a possible efficiency increase by a concentration of the offer, the achieved results show the possibility of reaching a relevant cost containment, that currently weight down on the public subject in the form of contributions (until now necessary for the survival of the car sharing system) and that would not be necessary in the case of a centralized structure.

10 They are Cambio, Stattauto AG, StadtmobilSüdwest e Shelldrive.

11 Even if moving away from the European context it is possible to find markets characterized by a concentration of the offer in Canada and the United States of America: almost 81% of the Canadian users is served by Communauto and around 94% of the American users is served by three leading operators Zipcar, Flexcar, e City CarShare, while the remaining 6% is served by a plurality of operators with limited dimensions and mainly localized in rural areas, that are often forces to go out of the market due to lack of users or organic structure.

Two particular elements emerge from the analysis based on a unique firm with a centralized organizational structure:

- 1) the current parameters of service use would guarantee the equilibrium of the system: from the economic simulation emerges a positive consolidated economic result due to a saving on the costs linked to a slimming of the Local Unit structures;
- 2) such result is improved by the effect of the supplier's economies of scale that are added to the determined result. A more efficient and compact negotiation with the suppliers could in fact lead to a saving in two of the main items: the car hiring (around 8%) and the purchase of on board instruments (around 10%)¹².

To these results, in the case of a centrally organized model, are then added some elements of improvement of the activity that are mostly present in the main European contexts that have been analyzed. These are particularly (i) a higher power in the contract negotiation at National level, (ii) the presence of a unique point of reference for the public administrations, (iii) a strong standardization of the procedures and (iv) a higher homogeneity in the level of offered service.

Reorganization in a centralized structure is not immune to organizational, financial and qualitative difficulties that make the changing process slow and complex. The corporate reorganization and that of the system's internal functions foresees a strong simplification of the structure with the consequent need to modify the personnel's duties that will not be linked to car sharing yet they will remain within the public administration with permanent contracts; moreover, in the Italian case it should be reminded that the local branches would lose their functions and as a consequence their control on the funding that has been quite generous. From a qualitative point of view the distance of the decisional centre from the users would entail a lower knowledge on behalf of the Central Units of the local specificities of the single territories. Lastly, there is a problem linked to the separation of the decisional centre from the suppliers: the Local Operative Unit possesses a considerable knowledge of its own suppliers with a consequent trust and rapidity of the service.

These are critical issues that could be partially mitigated by an analysis of the different local realities (demand, offer, territory) due to the fact that the local realities remain the key element for the success of the car sharing system.

For the Italian case the analysis of the economic trend of the system as a centralized organization has been also carried out through the examination of some calculated indicators taking into account the usage parameters throughout the work.

Particular emphasis is placed on the following economic indicators¹³:

Table 1 Economic indicators regarding the system

Indicators	Value (euro)
Turnover/operator	192105.78
Turnover/vehicle	13218.29
Turnover/client	497.98
Turnover/km	0.84
Turnover/hours of service	6.53
Total costs/ client	483.69
Total costs/km	0.82
Total costs/Hours of service	6.34

Source: Direct elaboration on ICS data

12 Without considering a further global saving on all the purchases directly carried out by the Central Office for all the Local Units.

13 "Turnover" is intended as the total turnover of the Head Office (approximately 5.7 million euros) and "Total costs" are intended as the costs for the entire system (costs of the Head Office and those of the Local Units). The parameters that have been used are those of 2009.

The main conclusions that can be drawn from the examination of the calculated indicators deal with the obtained and the potential improvement that could be achieved for the sector with a transit towards a centralized model. Considering the indicators it can be observed that the first value, given by the turnover by operator for a centralized model and therefore for a limited number of workers, is high (obviously higher than in a de-centralized structure). Moreover, considering the difference between the turnover and the total costs (in terms of clients, km and service hours) the system can overcome the breakeven point reaching an autonomy of the sector. It becomes evident that there is an efficiency boost derived from the creation of a centralized organizational structure in substitution of the current de-centralized one.

Nevertheless it must be stated that, looking at the “Turnover/Km” and ”Cost/km” even if the structure has been optimized, the profit margin is very low. It is in fact of 2 cents per km that with the current 6 million km determined a margin of only 120,000 euros. If at the current state such margin can be considered a good result, considering the fact that the system will not need a public contribution, it must also be said that is highly unlikely that under these conditions the sector can become an area of business like in other countries (Bonsall 2002). There’s a need to change in terms of the ridden km/vehicle: considering that it is very difficult to increase the ridden km per passenger (that actually tend to decrease in the course of time), the path to follow should be that of increasing the number of users per vehicle, that is relatively simpler if the number of available vehicle is increased specially in the central areas (made possible by the lower financial difficulty of the centralized model and so the higher possibility to carry on extensions of the offer), overcoming the critical element of the quality of the service that is given by the available vehicles once there’s a client’s request (Steininger, Vogl, Zettl 1996).

It is clear that if it becomes relevant to reason and operate with high volumes of traffic, some interventions become necessary apart from the unification of the Local Units that is on the basis of this work can be summarized under three aspects that have shown to be extremely relevant in the analysis of the European cases.

The first aspect refers to the agreements with the Local Public Transport operators (Prettenhaler, Steininger, 1999; Huwer 2004). Such firms tend to usually be poorly capable of satisfying the highly articulated spatial/time demand that is quite demanding from the quality point of view. In this sense the car sharing could be operating in collaboration with the LPT operators and be offered as a supplementary service to the traditional ones, filling up the existing gap between the varied and exigent demand and the services offered by the local collective transport operators: car sharing could participate in actions aimed at supporting the Local Public Transport that could slowly make it to be less perceived by the community as an “inferior good” (Musso, Burlando 1999).

Another relevant element is the submission of service contracts with the Local administrations that would constitute with their staff the core clients of this business service.

Lastly, comes the important topic of the integration of the car sharing in the urban and transport planning. This refers not to the mere theoretical indication of the service in the planning documents but an effective planning of housing and commercial settlements where the shared car can be included, or like in other countries, it can be coupled with the apartments in sale or to let allowing in such a way a reduction of spaces devoted to parking and their recovery for other uses like in the case of some European cities, in particular in Germany.

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