New, Integrated Mobility Services, NIM

(Neue, integrierte Mobilitätsdienstleistungen in der Schweiz)

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Authors: Helmut Schad, Michael Flamm, Conrad Wagner, Thomas Frey et al.

Address: Helmut Schad Prognos AG Forschung und Strategieberatung Missionsstr. 62 CH-4012 Basel phone: +41 61 327 32 00, fax: +41 61 327 33 00 e-mail: helmut.schad@prognos.com

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0 Executive Summary

0.1 Integrated mobility services - a definition

(1) We talk of integrated mobility services when more than one means of transport are marketed in the form of a cooperation of several service providers. So this kind of service is designed for people who

– want to have access to a range of transport supplies (‘multi-optional’ availability) in order to be able to choose the means of transport most suited for the destination/aim of trip (e.g. for various outings a day either tram or car-sharing vehicle)

or for people who

– want to use several means of transport on ‘intermodal’ trips (e.g. train and rented car on one journey).

(2) A second dimension of the integration is concerned with the combination of the traffic and vehicle supplies on offer with services of information, functions like booking and reservation as well as the respective billing/accounting mechanisms. Behind this idea lies the aim of offering the client an easy processing of house-to-house trips even when using the offers of several service suppliers. Another form of integration could be to offer the client - in addition to the transport/traffic-related services - material or immaterial complementary benefits. This is in effect a specific form of advertising not looked into further in this study.

0.2 Integrated mobility services already available

(1) Taking stock of integrated mobility services already existing shows that a vast number of offers and cooperations has been started in recent years. Among them are in particular the various ‘multi-passes’ - including the ‘züri mobil’ package - which are on offer as multilateral cooperations of car-sharing-services, public transport companies, rent-a-car firms and - according to the respective region - other service-providers. These service packages where transport services and vehicle supply are at the core of cooperative service supply will be further looked into in this study as they are considered to have the biggest impact on traffic. Mobility services of this kind furtheron are called ‘mobility-package’.

(2) These mobility-packages are usually limited to a certain regional traffic area and are available in more than 15 towns/cities in Switzerland. At the latest since the introduction of the national Mobility Rail Card - also called ‘444’-subscription - mobility-packages are well-known.
all over.

(3) Compared to the situation in Germany the Swiss services on offer stand out due to their high level of standardisation and self-financing. The car-sharing component is stronger and in the German-speaking part of Switzerland available more often than in similar German packages. That combined services have been established on a national scale in cooperation with SBB speaks for the innovative force of the Swiss mobility-packages. The fact that this kind of service was publically funded early on (especially under the programme 'Energie 2000') might have contributed to this; so far there is no similar funding in Germany. The ground for a further diffusion of these combined services integrating several means of transport and offers of vehicle can therefore be regarded as a fertile one in Switzerland.

(4) The integration of traffic supplies and functions of information, booking/reservation as well as billing/accounting has not yet made any progress worth mentioning either in Switzerland or other countries. In the medium run it is to be the task of service-providers to do some integrative work on this sector (traffic telematics). In this respect the study mainly looks at the problems of electronic billing and accounting of various services.

0.3 Methods

(1) This study which focuses on mobility-packages is based empirically on four inter-related surveys in Switzerland as well as two complementary ones in Germany. For Switzerland these are:

- a pilot survey among users of 'mobility-packages' in Bern, Zurich, Winterthur, Lucerne, and Lenzburg (310 persons net in 1997);

- a survey among non-users of these mobility-packages in the same cities in the German-speaking part of Switzerland (233 persons net in 1997);

- a survey among non-users in the French-speaking agglomerations Geneva and Lausanne (394 persons net in 1998);

- as well as a complementary survey among 50 Swiss experts regarding the chances and pre-conditions of a further spreading of such mobility-packages in Switzerland (in 1998).

These surveys were extended by means of a pilot survey with a similar questionnaire in the city of Essen (Germany) among 79 non-users as well as by a survey in the German agglomerations Cologne, Nuremberg and Dresden (750 persons in 1998) in parts methodologically
similar and carried out by Prognos AG.¹

(2) The analyses of the study are founded mainly on the comparison of the following groups:

– users and non-users of mobility-packages (in both the German and the French-speaking parts of Switzerland),

– holders of a driving licence in the non-users group who are or are not interested in mobility-packages, as well as complementary

– those interested in Switzerland and Germany,

– additionally the potential customers’ wishes regarding the services are related to the experts’ opinions.

0.4 Results from the survey among users and non-users

0.4.1 Use of mobility-packages

(1) Mobility-packages are an important instrument to provide an all-round mobility service for people living in agglomerations who already tend towards public transport; they will allow these people to manage without a car as far as possible. Nearly 90% of all users accordingly no longer have their own car in the household. Part of the users sold their last car at the same time as they bought a mobility-package. In this respect such mobility services support car-less lifestyles.

(2) The users are mostly well-educated employees - a high percentage of them working part-time -, living mainly in the inner city or in the suburbs of the agglomerations in the German-speaking part of Switzerland. They live in households of a size above average for these agglomerations and their environmental concern is higher than average.

(3) In addition to rather qualitative reasons (environmental protection, meeting other people etc.) economical reasons, i.e. the possibility of keeping the cost for one’s own mobility

¹ Prognos AG: Markt- und Potentialanalyse neuer integrierter Mobilitätsdienstleistungen in Deutschland. report and material volume. Study for the Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie. - Basel, October 1998. For this study a survey similar to that among Swiss experts was carried out among German experts regarding the chances of mobility-packages, mobility agencies and intermodal navigation and traffic information services.
relatively low, play a quite important role for the actual use of integrated mobility services in the user-group.

(4) Even though they do not completely do without cars users of mobility-packages reduce the amount of trips done by car drastically. The basic transport supply for mobility-package users is provided by public transport and the bicycle. Moreover the users of these packages cover a larger number of ways on foot. Public transport and in particular the railway profit from car-reduced mobility-styles. In peripheral areas and off-peak times car-sharing vehicles are mainly used as a complementary means to public transport. They guarantee users a high level of independence and flexibility. Users of mobility-packages judge the performance of the services positively. They seem to have learned to use the individual components of the services in the package according to their needs.

(5) Users of mobility-packages living in the agglomerations of the German-speaking part of Switzerland are altogether as mobile as other holders of driving licences:

– On ordinary days they make about as many trips as non-users; at the same time their amount of passenger-kilometres covered is even higher than that of the comparative group, resulting especially from the high performance by rail (very often the users have a GA - general subscription railcard). The modal split of this traffic output, however, is invers to that of the average Swiss population: 78 in 100 km are covered by means of public transport and 17 by car; of these 17 km only 4 are covered with a car owned by one's household, the rest with cars of car-sharing associations, rented cars or cars belonging to friends/acquaintances.

– Moreover, users go on holiday slightly more often than non-users. On these holiday trips, however, they cover less kilometres than non-users; the same holds true for the kilometres covered on plane journeys. The means of transport mainly used for holiday trips is the train with a share of 54% for the trips and 59% for the kilometres covered. At the vacation spot the user-group uses trains and buses intensively to get around or covers distances on foot.

– Holding a mobility-package supports a mobility behaviour where activities are combined rather more often; to a greater extent than before its acquisition users try to organize their shopping or any other outings and recreational trips beforehand.

(6) Users of mobility-packages on average cannot rely on considerably better public transport conditions than non-users in the same agglomerations. Vice versa non-users do not have outstandingly higher demands concerning the (public) transport conditions so that for most of them there should be no obstacle to make use of combined mobility services rather more frequently.
0.4.2 Profile of those licence-holders interested in mobility-packages

(1) The characteristics of the mobility-package users’ transport performance behaviour were summarized in the above chapter. As well as the customer potentials for mobility-packages in the Swiss agglomerations they justify further efforts in promoting such integrated mobility services. In the agglomerations of the German-speaking part of Switzerland 7% of the holders of driving licences and in the agglomerations of the French-speaking part 10% can be considered as being interested in mobility-packages (higher estimate). Relative to a short-term readiness to buy such a package the customer potential is about 4% of licence holders in the German-speaking part and about 2% in the French-speaking part of Switzerland (lower estimate). In absolute figures this would be about 90’000 potential customers according to the lower estimate and about 205’000 potential customers according to the higher estimate. This, however, are conservative and rather tentative estimations.

(2) Regarding their transport performance behaviour and the availability of a car licence holders interested in mobility-packages can be placed between non-users and users of mobility-packages: half of those interested in the agglomerations in the German-speaking part of Switzerland do not own a car in their households (French-speaking part - a quarter). About half of those interested in German-speaking agglomerations and about two thirds of those in the French-speaking part of Switzerland have constant access to a car. The customer potential for mobility-packages this way comprises on the one hand licence holders from households with no car or with a low/conditional car availability, on the other hand licence holders with relatively easy access to a car who use the car rather less than average. For the first group mobility-packages can sustain or stabilize the car-reduced lifestyle, for the second they allow a reduction of the number of cars per household or help to avoid buying an additional car.

(3) Transport performance of those licence holders interested in mobility-packages is on average already heavily focused towards the use of public transport; compared to non-users they only seldom use a private car or the car of friends/relatives:

- Relative to the number of instances of using any means of transport during one week the group of those interested in the German-speaking agglomerations use a car now only in 16% of the instances; in the French-speaking part of Switzerland the amount is 49% (which is still below average for that part of Switzerland);

2 E.g with access to cars of friends, acquaintances, other family members.
3 Those licence-holders which do not have any access or only restricted access to a car are included in the calculation of this group average.
– on average 31% of the passenger-kilometres of those interested in the German-speaking part of Switzerland and 56% of those interested in the French-speaking part are covered by car;

– those interested in the German-speaking part of Switzerland cover about 52% of their passenger-kilometres by train (about twice as much as those not interested), in the French-speaking group this share is about 30%, i.e. about two and a half times as high as that of the non-interested in that part of the country;

– in their holidays those interested and living in German-speaking agglomerations tend to use their car rather less often than those not interested.

(4) **Compared to those not interested** licence holders interested in mobility-packages show the following characteristics:

– on average they are younger than the non-interested (but older than the users of mobility-packages) and live in households on average smaller than those of the non-interested (and than those of the users);

– a larger share of them has a university degree, more of them are employed and also working part-time (compared to mobility-package users their gainful employment is slightly lower, however);

– their general environmental concern is above average (same as with the users of mobility-packages);

– the number of those interested in the German-speaking part of Switzerland holding a Halb-Tax-Abo of SBB (half-fare-railcard) is above average;

– driving a car does not have a high 'emotional' value for those interested from both parts of the country - cars are rather seen as mere means of transport;

– those interested more often use different means of transport for the same purpose, i.e. they are more flexible and less habitually focused on the use of a car in their choice of means of transport than those not interested;

– as to the most important performance features cars are judged worse by those interested than by those not interested.
0.5 Expert opinions about the diffusion of mobility-packages

(1) The experts from the German-speaking part of Switzerland who had been sent questionnaires judge the core services of mobility-packages in a similar way to the potential customers interested in these packages. They do, however, grade the need of traffic-related information on an overall - not means-specific - scale as more important as potential customers who obviously seem to regard themselves as relatively well informed. A survey among experts in Germany carried out at the same time led to similar results.

(2) The majority of the experts from the German-speaking part of Switzerland expects a further spatial spreading of mobility-packages in agglomerations, especially for the German-speaking part of Switzerland. They also see some potential for tourist regions but are sceptical about the spreading throughout rural areas.

(3) According to the experts' opinion individual factors on the part of the travellers are the main obstacles for a further diffusion of such services. These factors can be that people stick to their habitual mobility behaviour or that owning a car still is of major importance. Obstacles in the market area of mobility-packages and difficulties in drawing up offers are felt to be of comparatively lower importance.

(4) In the experts' opinion factors furthering the diffusion of mobility-packages on an organisational level would be that mobility-packages are user-oriented, uncomplicated, and can be used without loss of time; moreover the providers' competence to cooperate should be improved. On a communicational level the experts advise to place importance on the transparency of the utilisation modalities of the services as well as on the costs which can be saved by the customer. A 'trendy' image ought to be created comprising joie de vivre and environmental awareness as well as an orientation towards the future. As far as the political and organisational set-up is concerned the experts name support on the level of politics, finance and information policy. They point to the fact that measures in the field of taxation and price policy promote a change in the transport behaviour and can indirectly also work in favour of integrated mobility services. In order to influence the personal factors of mobility behaviour graded as very high by the experts attempts at 'mobility training' and the raising of people's awareness are suggested.

(5) From the experts' point of view it is mainly the car-sharing-providers and public transport companies who are able to offer new mobility services. Some minor commitment is expected also from telematics companies, travel agents, taxi services, and car manufacturers. Local authorities and cantons are regarded as very well able to launch new mobility services in cooperation with other service-providers.
Among the experts from public transport companies, public administration and research questioned in the French-speaking part of Switzerland terms such as 'combined mobility' or 'car-sharing' were rather little known. Under these circumstances the experts from the French-speaking part of Switzerland could not be expected to judge the possibilities of transfer of mobility-packages as they are found in the German-speaking part of Switzerland. Attempts at innovation in the public transport companies of the French-speaking part of Switzerland are relatively strong on the technological side (e.g. aiming at the introduction of multifunctional chipcards in the long term). The results of the questionnaire in the French-speaking part of Switzerland point to the importance of know-how-transfer regarding new mobility services in the group of transport economists as well as experts in public administration and science.

0.6 Environmental impact of mobility-packages

Mobility-packages contribute vastly to the reduction of the vehicle-kilometres covered by car in Switzerland. A quantification of the impacts on the environment has to take into account that this is done based on a tentative and conservative estimation of the potential; moreover this estimation does neither comprise dynamic effects nor changes in the general set-up for any kind of mobility behaviour of individuals. If the diffusion of mobility-packages over the customer potential estimated here should last 5 to 7 years, at the end of the diffusion period these services will reduce the car-kilometres every year by about 0.4 percent (lower estimate) or 1.4 percent (upper estimate) compared to 1995. These effects are not strong enough to change the modal split considerably; nevertheless, they allow the annual growth of car-kilometres - which amounted to about 1.8 % between 1994 and 1995 - to be cushioned.

The number of cars will decrease by about 0.5% or 1.4% respectively. This decrease does not lead to a considerably lower motorization of Swiss households but will contribute to slow down the expected increase in the number of cars owned privately. The effect to be referred to a period of 5 to 7 years accounts for about 25% (lower estimate) and 80% (upper estimate) of the average annual growth of the number of vehicles in the mid-nineties.

Once the predicted customer potentials have been reached between 15.2 million litres (lower est.) to 51.9 million litres (upper est.) of fuel can be saved per year.

It is a specific feature of mobility-packages that with a reduction of the car fleet not only the emission of air pollutants when driving cars is reduced but also that occurring in car-production. This is particularly important with a view to a global sustainability of traffic. Considerable (single) reduction effects due to car-production that was avoided occur especially for the emission of sulphur dioxide and particles. The CO$_2$-emission avoided by producing and disposing of fewer cars is also worth mentioning as it corresponds to the reduction of
emissions resulting from the reduced car-kilometres of one year. With a Swiss perspective the annual emission avoided due to reduced car-kilometres is particularly important: for CO it is about 1'200 t, for NO$_x$ about 260 t, for SO$_2$ about 75 t, for particles about 40 t, and for CO$_2$ about 52'000 t per year.

(5) The estimation of the reduction of external costs points to the high economic benefit incurred by the promotion of a further diffusion of mobility-packages. An annual reduction of between 12 million Swiss Francs (lower estimate) and 43 million Swiss Francs (higher estimate, 1993 prices) is calculated. According to this estimation each customer using a mobility-package would contribute to an average reduction of external costs of between 140 and 210 Swiss Francs per year.

(6) There are further non-monetary benefits of these services in the field of town-planning (decrease of areas needed for parked vehicles, strengthening of vicinity structures). In the field of transport economy the integrated mobility services studied give further innovative impulses.

(7) The estimation of customer potentials, the assumption of changes in behaviour, and the quantification of the environmental impacts resulting from that are based upon the presupposition of status-quo-conditions in the field of transport policy. This means for example that the set-up of price and administrative policy for mobility in agglomerations remains unchanged from the situation on whose background potential customers were asked to comment. It may be assumed that any change of this set-up leading to the increase of the costs for holding and using a car - here one can think of an internalisation of external costs - will lead to an increase in the demand for such mobility-packages.
0.7 Suggestions for a service marketing for mobility-packages

(1) The results of the analyses mainly point to possibilities for some short-term improvements of the system design for mobility-packages. An analysis of the development trends which are obvious already today and of model standards for a service marketing for mobility services served as basis for any additional medium and long-term paths of development. In this respect focus lies on the marketing fields of supply policy and communication policy; distribution policy and price policy are only looked into briefly.

0.7.1 Target groups

(1) To find out about the target groups of a marketing for mobility-packages the impact of certain factors on the interest in mobility-packages has to be looked at; these influences have been studied in multivariat analyses. Those licence holders who have a strong emotional relationship to their car and therefore cover most of their passenger-kilometres by car will most probably be won as customers only when a strong effort is made. On the other hand mobility-packages can serve as a useful service for those licence holders without a car of their own who from time to time still need to have access to a car; this way their car-reduced mobility style can be stabilized in the long run. An individualized marketing should try to focus on the group of those already interested in mobility-packages, taking into account the features of potential customers.

0.7.2 Supply policy

(1) As far as supply policy is concerned a customer oriented service marketing has to give top priority to the development of those features of the supply and performance of services which are of prime importance for potential customers: the reliability of the offer and the flexibility of its use which are to be regarded as some of the most important criteria of any service-supply. Regarding these criteria the car is still considered to have qualitative advantages. Hence suppliers will have to concentrate on these features when drafting their offers; they will need to develop a quality management structure to guarantee the standards of the offer. Essential criteria in the set-up of mobility-packages will be that transport supplies function well and are easy to use (reliability criterion); furthermore they need to be easily accessible for various transport aims (without any major obstacles to access or use). As far as transport supplies are concerned an improvement of public transport along demand-responsive lines would fulfil the flexibility criterion. In the field of transport technology simple access tools need to be developed for the use in reservation and actual access processes of the vehicles as well as for the billing/accounting of the various components of integrated mobility services with smartcards.
(2) It seems to be advisable to keep the integrated mobility services - here: the mobility-packages - as simple as possible and limited to the core services as they appear from the customers’ point of view: reduced tariffs for public transport in connection with facilities such as car-rental, car-sharing and services centered on bicycles. For a supply concept especially those new services designed around bicycles have to be developed and integrated. Transfer points of public transport have to be adjusted to the use of bicycles. It ought to be tested in how far the transport of bicycles on trains can be integrated into package-offers. To facilitate the transport of bikes on buses will be comparatively more difficult. It is, however, recommended to allow the transport of bikes in off-peak times as improved services for cyclists at these times will bring about major benefits. In rural areas outside the agglomerations the further integration of traditional fixed-route services and demand-responsive services (e.g. PubliCar and Mobile) are most important. This kind of service guarantees flexibility outside the time-frame and routes of public transport. It so becomes possible to reduce the otherwise rather big difference in performance quality between car and public transport for these areas.

(3) The study also shows that the integrated mobility services described here can only be fully accepted by the customer if the quality standards of public transport remain on a high level as public transport is the main means of transport for people using these services. An integration of taxi services in standardized mobility-packages for all of Switzerland is difficult because of the vast number of taxi-companies making negotiations rather complicated. Pilot programmes in connection with the use of smartcards in transport should be carried out where appropriate.

(4) Mobility centres ought to be established independent of the offer of mobility-packages as they are also directed to other target groups. The services provided by such centres are important for all those travellers who have rather little knowledge of the mobility options and hardly any experience with the use of alternative means of transport.

(5) In Switzerland several service-providers at the moment plan to use technological tools in order to optimize the services offered. There is, however, no real coordination between the individual technology projects. Under these circumstances it seems useful to build up structures improving the exchange of information or - even better - initiating a concerted process of standardisation, ideally in the framework of an actual project (e.g. the national exhibition Expo.01).
0.7.3 Communication policy

(1) In communication policy it is vital to offer sound and good information about the modalities for the use of mobility-packages as well as about the strengths of these packages always keeping in mind the service features most important from a customer's point of view. This is an essential marketing criterion for the complex experience of integrated mobility services where customers will only fully know about service quality after they have used it - especially if these services are as yet not distributed widely on the market.

(2) Non-users see the strengths of mobility-packages compared to mobility founded on the use of their own car as follows: mobility-packages provide mobility which is environmentally friendly and at the same time comparatively cheap, safe and stress-free. Complementary benefits such as the possibility of making good use of the time spent travelling or the chance of meeting other people on the way are not considered as that important. It is moreover important to enable people to experience new components in the service-packages by way of testing opportunities, e.g. a period of test use.

(3) In the short run mobility-suppliers and public institutions ought to implement multiplication mechanisms for the further development and spreading of know-how so that these services can gain a foothold in all of Switzerland quickly. This is one of the aims of the platform Mobil-Manager® developed by the programme „Energy 2000“ of the „Bundesamt für Energie“

0.8 Possible measures in politics and administration

(1) National authorities, cantons and local authorities can implement the following direct instruments promoting integrated mobility services:

- making use of their room for manoeuvre as ‘buyer’ of transport-related services (parallel to reforming public transport as well as when introducing the principles of New Public Management)⁴;

- participation in the development of criteria for a quality management (compilation of the thematic basics necessary for quality management, establishment of the respective structures and procedures);

⁴ In the long run this will make sure that the liberalisation in public transport does not work against the necessary cooperation between the individual providers of transport related services.
- (initial) financing of pilot-projects for the further development of know-how and for the development of transferable solutions;

- buying of services by public authorities for the business trips of their employees (this helps administrative bodies to save money and at the same time supports integrated mobility services by way of better legitimation).

(2) Moreover there are **indirect ways** for public bodies to promote the spreading of integrated mobility services:

- promotion of know-how transfer for an early multiplication of successful solutions;

- promotion of innovative processes (targeted financial support for certain projects, initiative programmes to support social innovation processes);

- far-reaching communication measures (awareness campaigns, e.g. in schools);

- setting-up of supporting frameworks: internalisation of external costs of transport, regional and town planning less focused on cars; traffic calming and accompanying measures to support pedestrians and cyclists; more rigid conditions for parking areas; taking into account car-sharing in building regulations and road traffic laws).

(3) There are a number of reasons why the promotion of integrated mobility services is of **public interest**:

- The developments described make new solutions to improve the traffic and transport situation in agglomerations possible; they contribute to the reduction of the emission of air pollutants and to the reduction of external costs in transport.

- The ressources used are indeed investments for an increase of the degree to which public transport companies are self-financing.

- The suppliers of transport services in Switzerland can distinguish themselves on the growing market for mobility services by innovative and cooperative solutions; the orientation towards service on the providers’ side increases; the development and use of appropriate information and communication media in traffic/transport are promoted; moreover jobs in vehicle-manufacturing and with public transport companies are secured.