reviewed paper

Improving intermodal transport with a focus on long distance: Selected findings from LINK –the European Forum on Intermodal Passenger Travel

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1 ABSTRACT

Intermodality, which describes both a quality of the transport system and a policy objective, has evolved over the recent years into a key word for the European transport policy and also some national transport policies. However, whereas intermodality in freight transport is being promoted with concrete support and initiatives on national and European level (e.g. Marco Polo programme), it has not yet received the same attention in the passenger sector.

The LINK project has created a European Forum on Intermodal Passenger Travel in order to enhance the combined use of different transport modes on a single journey. The project - launched in April 2007 - is funded by the European Commission (DG Energy and Transport) within the 6th Framework Programme. The intention is to sustain this platform after the 3 years funding period[1].

The LINK Forum puts the focus on long distance passenger transport[2] but including the "first and last mile". While urban intermodality has been made a topic in many initiatives, so far the long distance dimension, often also border-crossing, has not been sufficiently addressed. Trips over long distances only have a small market share in terms of total trips but account for a remarkable share of person-km[3]. They are of significance due to their economic importance, their high ecological impact and their above average rate of growth (mainly due to the development of low cost airlines).

Within the LINK project different thematic working groups of experts from across Europe developed the basis for recommendations on selected key challenges which should be tackled in order to enhance significantly intermodal transport. The recommendations target policy making as well as practical implementation on European and also on national level and refer to various fields of intervention.

2 PULL & PUSH STRATEGY FOR BUSINESS TRIPS

Making LINK's findings concrete, a strategy about the segment of business trips and job related mobility will be explained more in detail: its driving forces and context conditions, related to recommendable improvements on the one hand, and concepts for concrete measures for travellers on the other hand, mostly bridging the not sufficiently integrated long distance elements of intermodal trip chains.

The objective is to reduce monomodal car use for business trips and achieving a shift towards inter- and multimodality by calling upon companies' corporate social responsibility and by taking 'soft policy' actions to influence the regime of business trips within companies and institutions (pull factor). An important complementary lever to create supporting framework conditions is taxation regulation for company cars and reimbursement rules for (private) car use for business trips (push factor).

2.1 Relevance of the business travel segment

Constant car availability can be considered as one of the strongest reasons for habitual car use. Once established, behavioural habits are not easy to change[4]. Under these circumstances, no active choice between different transport modes can be expected. So the opportunities for fostering intermodality are further reduced. Car-based business mobility requires much less organisational effort than multi- and intermodal

[1]More information about the project: cf. Hoenninger 2008 and the project website www.LINKforum.eu

[2]Refering to trips of length >100 km (KITE), but neglecting the difference between network distance and crow-fly distance (average detour factor in some European countires: 1.3; KITE). Although intercontinental travel is not excluded in principle, it is not in the focus either.

[3]The survey on long distance travel in Germany (INVERMO) comes to the summary for the according market or travel behaviour "few are travelling a lot" (50% of long distance journey made by 10% of the population >14 years; Zumkeller et al. 2005: 72f).

[4]There are sufficient research results highlighting the importance of car-ownership and (permanent/ often) car-access for a car-oriented transport behaviour.

mobility[5], thus needs organisational support, which can be wrapped in the comprehensive approach of mobility management.

Business trips are understood as all trips made by employees or free-lancers of a company or (public) institution, which have the purpose to perform activities on behalf of the employer (i.e. regular commuting trips to/from the workplaces are not included).

Business trips account for a remarkable share of the transport market[6], and they show an increasing tendency[7]. In Germany, for example, 17% of all long distance trips (>100 km) are business trips (average 1.3 business trips per person and year). They are made by 12% of the population (>14 years) which actually makes long distance trips (INVERMO study; Zumkeller et al. 2002). Business trips in general have increased in the last decades by number, but more significantly by distance[8]. The majority of business trips are made by jobholders, and mostly by those with permanent access to a car. This is corresponding with the different opportunities to somehow "officially" use a car for business purpose, which makes a share of 1/5 of all registered motorised passenger vehicles (see table 1). In addition to the existing fleet, a major share of new cars is registered for business purpose or by businesses[9]. Controlling these will effectively affect the fleet as a whole.

type of usage / *type of registration*	private only	private + business	business only
private car	78,3 %	15,1 %	0,5%
company car (free-lancer)	0,2%	1,7 %	0,0%
company car (employer)	1,2 %	1,9 %	0,5%

Table 1: Cars in Germany by type of registration and usage (INVERMO 2005)

Next to the share it has to be pointed out that business trips follow other "rules" than trips for private purposes or trips by privately owned cars, mainly due to possibilities for tax relief. Financial instruments and their reform have indirect, but massive impact on the transport behaviour (modal choice), but are even more relevant on the strategic level concerning car ownership. Next to the ease of car purchase there is a nexus to the dual usage of company cars for private purposes: Fuel is often paid by the company. Taxation makes this appealing both for the company/employer and the beneficiary, whereas car-alternative modes partially have unequal, less favourable conditions. Taxation policy is thus very relevant for achieving strategic political objectives. In particular the EU objective on mitigation of CO2 has to be mentioned (reduction of CO2 emission in new cars 2008-2010 to 120 g/km with regard to the Kyoto objective)[10].

In addition to taxation and financial aspects, the modal choice is driven by the reputation of car drivers ("big cars = prosperity"). This recommends breaking up the circle of favourable taxation for "big" cars with high emissions and the degree of incentives and additional tax benefit for employees (business travellers).

2.2 The Concept

The recommendation is a complementary pull and push strategy to increase the share of and the market demand for inter- and multimodal business trips. Currently, long distance business trips are predominantly

[5]A company car offers permanent mobility with "flat rate" costs in contrast to the effort (transaction costs) to buy a train ticket - as backbone - and additional services (e.g. ticket for local public transport).
[6]An overview for some European countries is given by the FP6 project KITE (Knowledge Base for Intermodal Passenger Travel in Europe), see www.KITE-project.eu, particularly Collet/Kuhnimhof 2008. A close exchange between the networking and policy centrered project LINK and the more research oriented project KITE was given within the partial parallel duration.
[7]Increase of number of business trips 2004-2007 by 14% (companies and public institutions with ≥10 employees in Germany; VDR 2008)
[8]1982 - 2002: increase of trips by 14 %, increase of distances by 2 Million pkm or by 50 % (Germany-wide survey MID 2002; own calculation)
[9]In Germany (2007): 62% (Kraftfahrt-Bundesamt); 50-70% of new car sales in UK; high market shares also in The Netherlands and Sweden (OECD/ITF 2008, p. 13).
[10]A reform of the taxation related to car-use and car ownership - not only for business purposes - is an issue on European scale (e.g. EC 2002, EC 2005, TNO 2006), but also for initiatives on national level (FÖS 2008).

monomodal trips by car[11]. The recommendation aims firstly at reducing monomodal car-usage by suitable intermodal offers within a mobility management approach and secondly at changing the vehicle fleet for the still necessary business trips (company car) by taxation. In particular the segment of short long-distance trips (100-400 km crow fly trip length) needs more attention, as it offers a high potential for intermodality. Furthermore, the market segment of long or intercontinental trips is not directly put in the focus as the modal choice leads to aviation "by nature". However, the use of other modes to the airplane comes back to intermodal issues. Resrach covering business trips made by plane seems to focus solely or too much on the long distance leg (e.g. Beaverstock et al. 2009). Concenring intermodal long distance travel, in particular the air-rail combination (especially high-speed rail) attracted much attention from both research and policy making[12], whereas other modes are taken for granted.

There are factors that restrict the potential shift from car to other modes. Beside subjective attitudes, the purpose of a trip and the related luggage transport can be limiting factors[13]. Therefore, service branches (consulting, customer training, R&D) are best suited for intermodal travel as they often have to carry only portable computers, paper/print material but no heavy tools and machines.

2.2.1 Pull-factor Mobility Management

Companies and institutions elaborate and implement the pull-factor. Given their role as employers they are the relevant decision-makers concerning business trips by travel management[14] and, if existing, fleet management policies as travel decisions are made to a larger extent not by the traveller him- or herself compared to other purposes. Decision-makers have the opportunity to support sustainable mobility by corresponding rules for business travel[15] within a broader corporate social responsibility (CSR) policy. Public institutions have a particular role as travel directives of companies are often following them. Organising business trips should consider more often alternatives to the car[16]. Mobility management aims at fostering car-alternative modes and at influencing attitudes and behaviour towards sustainable and inter-/ multimodal travelling on business trips. Currently, mobility management is applied primarily on a site-based or local level[17]. But it can and should be extended to long distance (business) trips. Benefits can be both direct (e.g. financial[18]) and indirect (societal) benefits[19]. Its acceptance can be improved by demonstrating the benefits, in particular possible saving both for employers and employees.

Mobility management requires making companies and institutions aware that they are part of the transport system. The general idea is to better match the supply and the demand side with the aim to improve the conditions for the users of transport system and at same time increase the yield impacts of providers (e.g. increased demand for services). In order to achieve a shift towards inter-/ multimodality, suitable services for business trips have to be further developed[20]. The need for improvement particularly for business trips is highlighted by a study which assessed – amongst other aspects – the usage of transport services by trip purpose in Germany (Eck/Starck 2007). It resulted in worse ratings for long distance trips for business purpose and for commuting including educational purpose in contrast to shorter trips (see table 2). The

[11]In Germany, 76% of the long-distance business trips (>100 km) are made by car, 12% by rail, 9% by plane (INVERMO 2005).
A state of the art review of transport research concerning business trips found, at least for Germany, only little empirically based knowledge (Sauter-Servaes 2007).

[12]The European Commission launched e.g. the Rail Air Intermodality Facilitation Forum (RAIFF). One of many studies on this modal combination: Bozzani/L'Hostis 2006.

[13]In Germany, a study by DLR examined in-depth the circumstances and constraints and revealed that the car-use is higher the smaller the company is in terms of numbers of employees (Menge/Hebes 2008).

[14]Car policy is the according instrument reflecting the narrow perspective, determining company car use e.g., the car category for each level of hierarchy or level of incentive. An example for special journals showing the technical way of thinking in this sector is the German journal "Flottenmanagement" (www.flottenmanagement-verlag.de).

[15]In Germany, 90% of all companies have a company travel directive; the average in Europe is 75% (VDR 2008).

[16]In Germany, 18 % of the long distance business trips are resulting on considering other modes than the one chosen on a reporting day (average: 13 %; INVERMO study – Zumkeller et al. 2005).

[17]Numerous projects have been fostering MM; one of the most recent projects on European level was the project "MAX Successful Travel Awareness Campaigns and Mobility Management Strategies" (www.max-success.eu).

[18] > 50% of the costs for business trips are those for transport (example Germany, data 2006/2007, VDR 2008).

[19]Referring to the concept of CSR which is often embedded in Eco-Management and Audit Schemes (EMAS). The toolkit of the alternative German transport association VCD has been developed with this background.

[20]The relevance of improving services including their reputation is shown by the result of a survey assessing the quality of business trips >100 km in Germany (Nordlight research 2007; N=500) which rates rail worst in contrast to car and airlines (excellent & very good: rail 23%, car 45%, air 51%).

relevance of improving services including their reputation is also shown by the result of a survey assessing the quality of business trips >100 km in Germany (Nordlight research 2007; N=500) which rates rail worst in contrast to car and airlines (excellent & very good: rail 23%, car 45%, air 51%).

[N=2500]	commuting, education	business	leisure	vacation	shopping
within city	69%	59%	67%	-	70%
within region <100 km	62%	58%	62%	59%	62%
domestic >100 km	47%	50%	62%	59%	-
abroad	42%	43%	56%	58%	-

Table 2: share of respondents assessing usage of transport services good or very good (regardless mode) (Eck/Starck 2007)

Approaching transport services for business trips must not exclude car-based services. Car-sharing fills the gap between owning and occasionally using a car, but further efforts to meet the needs of business travellers are required in order to gain momentum[21]. Various offers have been developed targeting business travellers such as lounges at major railway stations, WLAN hot spots in stations and on board of trains, corporate portals of national railways, special advertisement. This shows that the needs of this target group are reflected by different operators and vendors. However, a wider thinking is required in order to adapt and improve suitable transport services that offer alternatives to monomodal car-use[22]. Mobility management for business trips can only enfold its potential if the relevant players are involved, i.e. particularly the national railway companies and suitable transport service providers. Associations like chambers of commerce, business associations, but also user associations, which are influencing companies by expertise and advice, can be involved in implementation[23].

A particular segment are business trips to business related events. Numerous events take place in cities, different in size (number of visitors), timing and duration, location, frequency, etc. A large number is dedicated to business purpose (e.g. fairs, conferences), some for both the public and businesses. For many visitors an event is often related to travelling to an unkown or only little known environment with a high demand for information, usually combined with high time constraints. The objective thus is to offer integrated low-thresholds services, which are perceived by visitors as pleasant, easy, fast, cheap and door-to-door and best appear as an integral part of event information and not as a separate information channel. Incentives for the intermodal journey should be included (e.g. receptions for businesses as “add-on” to the event), same personalised profiles of the traveller. It seems too early to predict the impacts of ICT based social (peer) networking tools like facebook, XING, linkedin on the further development of business vents, but already now a trend can be observed towards more relevance of informal networking in contrast to formalised presentations. Furthermore, booking of integrated packages of travel services, including the long distance trip chain, access to the event and to local transport (vouchers for public transport, taxi, public bikes etc.) are to be seen as promising offers. On a non-transport related level it can be said that supporting long distance travellers improves the event’s image and can be part of city marketing strategies.

Integrated mobility and event offers can actually be found, but so far often include very only limited information (e.g. airport connections) and even less ticketing options. Event visitors still have to make remarkable effort (e.g. visit several websites) to work out intermodal options if they do not chose comfortable monomodal car journey.

It is necessary to create forms of cooperation between the relavent stakeholders, from both the local and the long distance transport sector as well as from the side of event providers and additional parties (tourism industry). Expanding existing approaches of mobility management on the long distance target group of

[21]The Swiss car-sharing provider Mobility offers a variety of car types by a broad network of about 1200 terminals all over the country. The close cooperation with public transport associations (e.g. Zurich Region) results in appealing tariffs for users and raises the awareness for the offers vices versa.

[22]Flexible choice for business trips is offered in the Netherlands by the mobility card ‘Mobility Mixx’, which can be used for train, parking space at the railway station, ‘OV-fiets’ rental and the ‘train-taxi’. Private use is possible, but has to be taxed (employer has to monitor this). www.mobilitymixx.nl is a daughter company of a large car lease company, offering also comprehensive and tailor-made travel management.

[23]A good example in this respect is the toolkit of the transport user association VCD in Germany (VCD 2008).

business events seems promising as it requires "just" much more organisational effort than investment in technical issues. However, the question of purchasing remains open; different sales points (e.g. for long distance "leg", local transport, accommodation) may reduce the impact of joint information provision.

2.2.2 Push-factor taxation

On the "push-side", taxation concerning company cars can be a strong lever contributing on the one hand to multi- and intermodality and on the other hand to environmental objectives such as reducing CO2 emissions in the transport sector. The taxation of passenger cars should be re-designed in order to favour low emission cars, to treat all transport mode equally and to not support habitual car use. The rationale is that cars with (remarkably) less emissions and thus less fuel consumption compared to nowadays are a good chance to decouple prestige and incentive effects of (big) cars[24] and to introduce intermodal services according to the actual needs. This initiative includes essentially the free provision of fuel - often used also for trips for private purpose, and the according taxation. Often, provision of a company car and free fuel is more favourable for employees comparing to "normal" income (salary) in terms of taxation or contribution to social assurance.

National states governments elaborate and implement the push-factor taxation, as they are responsible for taxation. Nevertheless, the EU should try to influence national taxation to green company cars or a reform of car-related taxation. In terms of instruments it seems not appropriate to aim at launching a European directive with a long, difficult and open process without neglecting this strong instrument[25]. It is seen most promising to influence national policy-makers by clear recommendations on this complex issue. This includes highlighting the impacts of this lever, demonstrated by the forward-looking Member States.

2.2.3 Examples

The taxation of company cars in the UK is a role model for a change of the according policy: The benefit in money's worth for the private use of company cars is depending on the CO2 emission. The tax rate for petrol cars ranged from 15% of the list price for low emission cars (<140 g/ km) up to 35% for high emission cars (>240 g/ km). Diesel cars pay a 3% supplement to reflect local air quality emissions. This change of taxation policy resulted in the reduction of the number of company cars by 25% within 4 years[26]. Although an increase of use of private cars for business purpose has been observed, this is only partially compensation.

Additionally, in 2003 the company car tax fuel benefit charge was reformed. As consequence it can be observed that the proportion of company car drivers receiving free employer provided fuel for private use has also decreased significantly from 57% in 1997 to around 30% in 2005.

In contrast, the conditions in Germany are favourable for monomodal car-use: Taxation for private use of a company car does not take the actual fuel consumption or emission into account ("flat rate tax": 1% per month of the purchase price according to an official list, plus 0.03% of this value per km). This is similar to the company car tax system in the UK prior to April 2002 which encouraged employees to drive more business miles than they otherwise would have.

2.2.4 Discussion of implementation

The practical steps toward inter-/multimodality in companies and institutions need to be supported by "soft" measures which foster a modal shift from the monomodal car use.

Regulation concerning the usage of company cars is made on national level (legislation), but can and should be fostered by the EU by promoting convincing examples such as the British system and its financial and environmental benefits.

Within the LINK project, a consultation of stakeholders on LINK recommendations has been conducted. The overall agreement of about 200 stakeholders who took part resulted much more in agreement (79%) than disagreement (21%).

[24] In Germany, the average purchase cost of a company cars for CEOs is about 60 000 €, for the next management level about 44 000 € (Kienbaum 2008).
[25] Particularly the states with a strong lobby of car manufacturing industries (Germany, France) are very likely to oppose such an attempt.
[26] The number of company cars in UK was reduced to around 1.2 million in 2005 compared with around 1.6 million in 2001 (source: HMRC 2006).

Concnering the feasibility of this strategy it can be said that at the level of multiplicators strategic CSR and mobility management can rather easily be implemented, although it hast o be seen as a permanent task, which should be part of the corprate management.

The desired change of regulation should follow the existing examples of taxation like in UK, but will have to face political difficulties[27], i.e. strong counteract by car industry. A crucial open question is the application on existing fleets or just on new vehicles, which seems much more likley. The complexity of the recommendation is reflected in the results of the consultation, that the feasibility would be difficult (43%). Only a minority thought it could be done easily (18%).

The impact of this context condition is considered high due to the multiplier effect on companies and institutions. Changes need to be published (transparent reasons, easily to understand). In the consultation, a bit more than half of the stakeholders (55%) believed that this recommendation is crucial for enhancing intermodality (in contrast: 41% irrelevant or low, 4% counterproductive).

The timing for implementation depends on the political situation. The consultation resulted in almost equally 1/3 for short term implementation (<3 years), 1/3 medium term (3-5 years) and 1/3 longer term implementation (>5 years).

3 CONCLUSION

Intermodality is both a concept which receives too little attention by the stakeholders relevant for developing according services and by the travellers. The market segment of business trips and target group of business travellers respectively deserve being put more in the centre of reflections and efforts in order to serve by services offers which successfully tackle the inherent challenge to “get them out of the car”. But the market success depends on in how far these services are perceived suitable and convincing. Learing from decades of integrated transport planning (i.e. integrating all relevant field of intervention) it can be concluded that only a joint approach of “carrot and stick” can achieve the “old” objective of modal shift. Despite the concept of mobility management is well tested on local scale, also for the and together with companies and employers, it needs much effort in terms of organisation and powerful drivers (including figureheads) to enlarge it to long distance business travelling. The complex interrelation between car taxation and car use is perhaps outbalanced by the political implementation. But this lever is too strong to leave it out.

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