Title: Insights into Mobility Management: The Contribution of MOST

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MOST stands for "Mobility Management Strategies for the Next Decades" and was a research and demonstration project funded by the European Commission, DG Energy and Transport (TREN), under the 5th Framework Programme. MOST was operational between January 2000 and December 2002. More than 30 research and demonstration sites in 15 European countries tested Mobility Management and reported about the strategies applied, impacts achieved, effects measured and barriers encountered.

For ECOMM 2003, there is one presentation in the plenary (this one) and a separate work shop (2g: The MOST experience - results, products and recommendations). The paper at hand recalls the most important results of MOST and relates them to previous work in the field of Mobility Management. Future areas of research or implementation are indicated at the end and will trigger the discussion in the plenary. The paper is based on the MOST final report, which can be downloaded from the MOST web site http://mo.st after approval by the EC.

Mobility Management - a widely applicable concept

MOST has built upon a sound basis: the definition of Mobility Management from the European Platform for Mobility Management (EPOMM, http://www.epomm.org). According to this definition, a conceptual framework for MOST has been set up and all demonstrations in MOST were briefed to follow the same common understanding of Mobility Management. This facilitated a common approach among all sites and the drawing of comparisons between them.

Mobility Management can be applied in various thematic fields on a city or site level. The good experiences with companies, schools and universities was continued. But MOST also showed that Mobility Management works for new fields of application and for different target groups. This included visitors and staff of hospitals, visitors to temporary events, people on short term leisure trips as well as tourists. Site level mobility management was investigated more thoroughly and proved to work well for various traffic generators, like a business park, new housing and a new part of a university. New specific target groups were addressed, e.g. handicapped people, unemployed people and residents of car free housing.

The mix of demonstrators showed that **Mobility Management can range from local and very concentrated actions up to wider scale approaches covering whole regions.**

MOST, being the largest European project in this field, has demonstrated that **Mobility Management principally works in countries that differ in their geographic location and in their national frameworks for mobility management**. Location often implicated different stages of awareness about Mobility Management, and sometimes can explain differences in results.

Mobility Management - a flexible and adaptable concept

A too strict and narrow interpretation of the common concept would limit flexibility. MOST showed that **Mobility Management actually is a very flexible concept and that its tools are adaptable**. E.g. the mobility plan, originally limited to site level, proved to work well for long-term and large-scale applications for whole regions. Another example is the establishment of a mobility centre or a mobility office, often difficult to set up, as much resources are needed. MOST could demonstrate that you can start with a small but important first step - an operational headquarter. A further example is the wide spectre of activities of what is called a mobility consultant. There is the level of direct service to the end-users, a second level of implementation of mobility management on a site generating traffic, and the third level of professionally consulting companies and institutions on how to solve traffic problems with mobility management.

The combined realisation of hard and soft measures in an integrated approach proved to be most efficient.

MOST showed that incentives and the addressing of emotions, of personal values and of benefits work well as a motivation to change mobility behaviour. Therefore, **the term "Motivation" should explicitly be mentioned in the definition and the common concept** of Mobility Management. It should be included in the service category "Awareness, Education *and Motivation*".

Strict differentiation of elements according to the theoretical concept proved to be impractical. As a result, MOST does not emphasise the structures, but more **the process of mobility management**. In fact, this is one of the recommendations of MOMENTUM[1]. Mobility Management requires convincing leadership, qualified personnel, a vision to follow as well as participation of users and stakeholders. **The main tasks that need to be included within a Mobility Management scheme are:**

➢ initiating the start of Mobility Management
➢ "selling" the concept (e.g. to potential funding bodies, decision takers, own staff)
➢ linking up with and gaining the support of the end-users (considering user-participation)
➢ coordination between all important stakeholder
➢ securing finances
➢ involving qualified personnel and possibly external experts
➢ creating ownership (i.e. identification with and support for the MM measures)
➢ setting up a plan (including baseline analysis, specification of concrete goals, strategies, responsibilities and milestones)
➢ realising planned activities
➢ controlling the process and results
➢ feeding back results
➢ revising the plan if necessary.

MOST made Mobility Management more accessible by giving more insight into the process of Mobility Management. Only when the static elements of Mobility Management are linked into a coherent concept adopted to local needs the approach can unfold its potential.

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[1] cf. MOMENTUM Final Report (2000), p. 44. (MOMENTUM, "Mobility Management for the Urban Environment", was one of the forerunner projects to MOST (1996-1998, Transport RTD programme within 4th framework programme of the European commission)

Mobility Management - an effective strategy: promising evidence and results

When looking at the large variety of results of MOST, results that provide evidence about positive impacts of Mobility Management are probably among the most important ones for convincing potential followers, decision takers and funding institutions. **Evidence of positive impacts of mobility management could be found on different levels**. Sites managed to:

➢ increase awareness
➢ promote Mobility Management and its different options among decision makers, financing bodies
➢ develop new mobility services
➢ enhance the accessibility of certain destinations and, hence to increase opportunities for modal choice
➢ increase the use of sustainable modes (or slow down / stop a negative trend)
➢ reduce car use (or work against the continuous growth)
➢ address traffic and air quality problems

The table at the end of this paper gives an overview on some of the measurable impacts Mobility Management had on a change in actual mobility behaviour as measured through

1)   usage of offered services or alternatives
2)   mode shift
3)   car use reduction and
4)   km or emission reduction.

Mobility Management - optimising the process of implementation, overcoming barriers

The national, regional and local frameworks are known to be an important factor for facilitating Mobility Management. MOST for the first time has undertaken a structured analysis of those frameworks. This has resulted in a report, detailing the frameworks on a local, national and European level. Countries can learn from each other to see that certain policy tools work even under distinct preconditions.

MOST elaborated **the P.A.I.R. scheme to guide policy makers** to detect the most important barriers and support structures for Mobility Management in their city, region or country. It identifies four important domains – to watch for improvement or to develop strategies: **P**olicy (high level guidance), **A**ctors and Structures (including personnel, organisations and governance), **I**ntegration on all levels (modes, transport and non-transport policies,), and **R**esources (financial and knowledge resources, quality management). (The MOST workshop 2g, presentation by Müller & Wixey, elaborates more on the P.A.I.R. scheme).

MOST prepared a close linkage of quality management to mobility management: emphasis was laid on the implementation process itself. By applying the total quality management tool, the EFQM[2] analysis, the role of convincing leadership, qualified personnel, a vision to follow as well as participation of users and stakeholders became clear.

By adapting the EFQM- model for MOST, new **insights were gained into the barriers to smooth implementation and how to overcome them**. This includes organisational, political and legislative barriers. Examples are the competition between (adverse) objectives of involved stakeholders and the

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2 EFQM: European Foundation for Quality Management. The EFQM has provided a total quality management tool, which is publicly accessible and serves to assess the success of any project or organisation (e.g. http://www.efqm.org/new_website). On the basis of this, the MOST project developed a questionnaire and process to assess the implementation process of Mobility Management.

problem of overcoming borders between administrative departments. Experiences in MOST also clearly show the importance to watch side effects of measures in order to prevent counteractions.

The adapted EFQM analysis proved to be a valuable tool for self-assessment. **Regular self-assessment should be a standard procedure in order to control the course of the project and the quality of the outcomes**. This feedback helps to detect weak points and undesired developments. Original plans can be adapted and the process can be optimised.

MOST proved, that Mobility Management can successfully be triggered and implemented by various clients (most common are city or regional administrations or PT providers), as long as they seek cooperation and good coordination. Whenever sites in MOST failed to get the important stakeholders aboard in the very beginning of the project, delays or a counteractive atmosphere hampered a smooth course later and were hard to alter. **So the involvement of different stakeholders is essential**. The private sector is starting to take responsibility. Enhanced Public-Private-Partnership will play a considerable role for the future of Mobility Management.

Overall, MOST has underlined earlier findings that it is people and commitment that count on the way to success. Implementing the right organisational structures is an important step to sustain the activity. Basically, Mobility Management can be applied in any situation where mobility and accessibility should be improved.

Comprehensive Monitoring and Evaluation - a key to success

Mobility Management will only become widely spread and accepted if the results and positive impacts of Mobility Management are reported to initiators, funding institutions, potential followers and decision makers. MOST focussed on detailed and robust evaluation to obtain such results. **MOST defined evaluation standards already in the beginning** of the project (as already suggested by MOMENTUM). Hence, comparisons between the demonstration sites were facilitated. Still, this was not easy and sometimes not possible or relevant. This is also due to the broadly varying scale and scope of Mobility Management – from a mobility plan for a small business to a regional tourism scheme.

The MOST-**MET – the Monitoring and Evaluation Toolkit** – is built on assessment levels (originally from MOSAIC[3], but refined according to the lessons learned in MOST). These levels reflect the whole range of impacts Mobility Management can have, reaching from changes in awareness and mobility behaviour to impacts on the transport system in general. Important input was taken from the TAPESTRY[4] model for behaviour change and from the considerable USA evaluation experience. Both were integrated into the final version. **The MOST-Monitoring and Evaluation Toolkit is available to the public in an optimised version. It will help future projects to obtain demonstrable, visible results.** This will help to keep all participants motivated and to convince decision makers to include mobility management in the agenda and integrate it into daily transport policy. (The MOST workshop 2g, presentation by Timo Finke, will elaborate more on the MET).

In the investigation of the process of implementation **MOST adapted the general EFQM model for Mobility Management. Result is a new questionnaire for the self-assessment** of the quality of the local projects through the relevant stakeholders. It was tested for selected demonstrations and proved to support the planning and implementation process well. It helps to identify barriers and ways to overcome them.

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3   MOSAIC "Mobility Strategy Applications In the Community" (1996-1998, Transport RTD programme within 4th framework programme of the European commission).

4 TAPESTRY "Travel awareness, publicity and education supporting a sustainable transport strategy in Europe" (2000-2003, Transport RTD programme within 5th framework programme of the European Commission).http://www.eu-tapestry.org

Mobility Management - an outlook

The main issues MOST has contributed to, can be grouped along the following lines: 1) new applications for Mobility Management, 2) effects of Mobility Management, 3) policy integration. There still remains work to do, both in research and in practice. The paragraphs below give an outlook, without claiming to be complete.

New Applications

It has been **established** that Mobility management for schools, companies and hospitals is effective. **Other areas** (such as tourism) **need further development**. For **temporary, large events** Mobility Management should become a standard procedure: cultural festivals, sports events or exhibitions are generally large traffic generators and MOST has shown ways to cope with the crowds. Another area with a high potential is the **early integration of development planning and Mobility Management**. Here, activities for business sites are increasing (especially in the UK and the Netherlands), and ever more car-free housing residential areas are being developed.

The discussion on the **right target group** has often focused on the dichotomy of either convincing the sole car driver or bringing better service to existing customers. The work with the mobility centres shows that the occasional user of public transport should be the primary target. Mobility Management is not so much about a full switch from car to other modes, but more on incremental changes to more sustainable modes or on keeping their often fragile share stable.

The disabled were among the target groups in some MOST demonstrations. There is still a great demand for more demonstration projects, particularly addressing ways to diminish the "mental" barriers, i.e. to plan and guarantee for **autonomous mobility of disabled people** and to integrate them into the transport modes and transport planning for the fully mobile users.

In MOST, **Information Technologies** have been considered as additional channels for information, promotion or reservation. Their potential, however, is larger and needs further attention, (e.g. possibilities how far a "virtual mobility centre" might take over certain functions of a "traditional" mobility centre, could be investigated). Personal service will always remain important, but the fast developing fields of internet, increasingly versatile mobile information and also **telematics** will have an impact on mobility and, hence, Mobility Management should prepare to take up evolving challenges and new possibilities.

The development of small, clearly discernible, distinct service packages could make Mobility Management more marketable and more accessible for the decision makers.

Effects of Mobility Management

In general, **impacts of Mobility Management** deserve further investigation. Despite the fact that evaluation results help to control progress and provide good arguments for the decision makers and funding bodies, not many Mobility Management projects integrate profound evaluation in their planning. With the MOST- Monitoring and Evaluation Toolkit a valuable tool is available to eliminate this deficiency.

Mobility behaviour usually builds on strong habits, which cannot be changed all at once. Many changes only occur gradually, which is why larger impacts of Mobility Management often only occur in the long run, especially on a system level (e.g. congestion, air pollution).

Some insight has been gained on the long-term run of mobility centres - but as the mobility centres had rather small roles in MOST, no in depth surveys could be conducted. Results and conclusions about the mobility centres base on routinely collected data. Difficult questions requiring elaborate surveys – like the impact of the mobility centres on the users' mobility behaviour – could therefore not be addressed.

All this emphasises **the need for more investigations of long-term impacts of Mobility Management**.

Further investigation is also needed on the costs and benefits of Mobility Management. Many measures were integrated with other – hardware – measures, for example in Rome or Malaga (introduction of new or extra busses). Often it turned out to be difficult to attribute costs – or even to get the costs – as for example equipment, personnel and so on was shared. To find the answer to the question of how many extra trips on public transport are made just because of the existence of a mobility centre is very difficult – it requires in depth multiple surveys.

To be able to do this sort of research, it would be necessary to set up a research project, in which the rules of evaluation are clearly set beforehand. The demonstration projects to be researched would be selected after that – and on the condition that they strictly adhere to these rules and prove to be able to do this – e.g. with the reservation of adequate resources for evaluation.

Policy Integration

On the basis of the European-wide framework analysis conducted in MOST, a range of recommendations are given as to how to improve existing frameworks to make them more supportive for the implementation of mobility management schemes. For most countries the main task will be to achieve the shift **from a mainly supply-oriented transport policy to a more balanced approach that firmly establishes the demand-side as well**. Here, the key is a multi-modal understanding and multi-modal organisation, e.g. of administration departments. In the medium run the mode of governance needs to be developed towards a co-operative and communicative style, especially as Mobility Management needs public and private partnership. The main barrier at this time is not so much the technical knowledge about how to introduce Mobility Management, but rather the mental disposition to change the nature of transport policy.

A key issue will be to forge **links towards non-transport policies** such as energy, health, environment, housing, planning, business development etc.

Mobility Management definitely plays an important role when **integrated into comprehensive transportation programmes**. It would be promising to gain more knowledge about which are its specific contributions, e.g. how it could help to maximise the ridership of a new light rail system or how it might be introduced in conjunction with a traffic restraint policy.

Quality Management proved to be a good support to Mobility Management. The work with the adapted EFQM model illustrated this. But it has not been tested on a wider basis, and its potential to systematically structure the process and support the co-ordination between the relevant stakeholders has not been explored. **The benefits of quality management needs further research**, to develop strategies to integrate it into the whole planning and implementation process.

As this outlook shows, there is still considerable work ahead. MOST has advanced the knowledge on many questions, but new questions have come up. This should not lead to hesitation – the work on Mobility Management has generated a body of good experience for any practitioner to start. The development within the project and beyond leads the MOST consortium to the expectation that Mobility Management will further establish itself as **a standard procedure** for all involved in transport matters – both in the public and the private sector.

For further information:

http://mo.st (includes all reports from MOST after their approval by the EC)

MOST Site	Participation/ Usage	Mode Shift	Car Use Reduction	km or Emission Reduction
Limburg, MM for schools	75% of parents participated in car free school week	Bike/walk ↑ 3.5% among students	Car use ↓7%	
Camden, MM for administration, car free day			Car use ↓12% among staff	PM10 ↓11% on car free day
Zug, MM for weekend tourists, esp. families	452 people on 8 Action –Days (an average of 56 persons per day)	Most participants used alternative modes or carpooled (only 14%-23% drove to events)		
Málaga, MM for tourists	6,100 tourist bus tickets/month			
Sandwell, MM for hospital staff	100+ PT season passes sold; 40 scooter users			
GKK Graz, MM for outpatient medical centre		Observed reduction of cars parked on-site		
Bremen, MM for leisure site		25% of PT users came by car last visit; 51% of visitors came by car, compared to 50%-72% in before case		
Karlstad, MM for university	50% of students use free PT pass	More students cycling to University		2,872 km saved per participating student or staff per year
Münster, MM for residential area	Car ownership ↓; carsharing ↑			
Málaga (PTA), MM for business park		Carpool use ↑ 46% PT use ↑ 34%	Car use ↓ 12%	
Athens, car free days		PT use ↑ 20% comparing the mode share of 2 subsequent car free days	Car use ↓22% between car-free days	
Rotterdam, MM for sports event		PT use ↑ 60% during Marathon	Car use ↓ 38% during Marathon	
Rome, MM for pilgrims during Jubilee year	366,000 riders on new J-lines			
Lund, MM for whole city		9% of residents changed travel habits		Each bike rider saved 4,300 km per year; each bus rider saved 2,800 km per year
Rome, MM for companies	1,700 discounted annual PT passes sold; 730 carpoolers registered			

Table 1: Measurable impacts of Mobility Management on a change in actual mobility behaviour

PM 10: Particulate Matter 10 parts per million; MM: Mobility Management, PT: Public Transport

It should be noted that the percentage changes in mode shares or car use are based on the relative change in mode shares, as a percentage, not as the difference in percentage points. Thus a reduction in car use from 20% to 15% is a 25% reduction, not a 5 percentage point reduction