Final Report

ARTIST

Agenda for Research on Tourism by Integration of Statistics/Strategies

contract N°: UR-98-SC.3018

**Project
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Partners : **INRETS (France)**
CISET (Italy)
CIG – TTI (UK)
CTPRR (Israel)

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University of Kent (UK)

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Abstract: The main objectives of the ARTIST project is twofold: first to describe tourism mobility in Europe and in several European cities and second to giveand integrate the main findings of the project and second to give recommendations for a research and demonstration agenda of the Community. The main perspective chosen within the project is that of transport and traffic which is obvious since the project is part of the Transport RTD programme. It addresses Task 12.6 'Study on the impact of tourism on transport and analysis of policy relevant implications'.

This deliverable is based on three elements:
a. Deliverable 1 - Current situation and trends (WP1)
b. Deliverable 3 - The management of tourist flows (WP2)
c. Deliverable 4 - Integration of Findings and Recommendations (WP3)

In the first part of the document the synthesis of the Findings is given. Based on the identified knowledge gabs, gives the second part of the document suggestions for research topics.

Keywords: case studies, cities, research agenda, statistics, strategies tourist flows, tourism, visitor flows

Executive summary

Artist project
The Artist project is part of the Fourth Framework Programme and more particularly of its Transport RTD Programme. It addresses the issues of Task 12.6 'Study on the impact of tourism on transport and analysis of policy relevant implications'. The project has multiple objectives ranging from describing and analysing tourism mobility, reviewing existing visitor flow management practices in European cities to finally giving formulating a research and demonstration agenda for a Community initiative.

The main objective of the ARTIST project is twofold: first to summarise and integrate the main findings of the project and second to give recommendations for a research and demonstration agenda of the European Commission. This agenda specifically refers to tourism mobility and related potential transport policy measures. The actions proposed in this agenda are to be included in future Framework programmes of the EU and may be considered in transport policy development at the Community level.

Current Situations and Trends
Several topics appeared to be important while studying current situation and trends.

Definitions
In the field of transport a set of concepts and operational definitions have been developed during the last decades; they proved to be reasonably adequate for transport planning purposes. In the area of tourism, however, concepts and definitions are different, and are lacking precision from a transport point of view. A major conclusion is that tourism and transport are two different and separate worlds with respect to concepts, definitions and data. Tourism mobility that is at the interface of both worlds is therefore described and measured inadequately.

Data
Available data sources on mobility and tourism have been investigated at the international and national level. These sources are heavily insufficient for an adequate description and explanation of tourism mobility. Taken together they are far from complete since they do not cover all tourism mobility segments. Furthermore, they are inconsistent within and between the different European countries. Most of the sources have a focus on either mobility or tourism. None of the countries has an integrated data source.

What is needed is either one integrated data source on tourism mobility or alternatively a set of co-ordinated data sources. Co-ordination refers to coverage, definitions, methodology etc. For mobility there is not one integrated source. The European Commission is presently supporting research concerning the tuning of definitions and sources in different European countries, for example in the MEST project and the DATELINE project.

ARTIST – Final Report

Tourism mobility patterns and trends

Since the 1960s there has been a spectacular growth in tourism in the Western world. The number of international tourist arrivals increased from 60 million in 1960 to 635 million in 1998. Within world tourism Europe is an important market. It is estimated that in 1998 Europeans made about 230 million international overnight trips of which 86% have a European destination. Additionally, non-Europeans made about 70 million trips to Europe.

Of the international overnight tourism trips made by Europeans the overwhelming majority (75%) is for leisure purposes: long holidays (61%) and short breaks (13%). A strong tendency is observed from one yearly long holiday to more frequent shorter trips.

An analysis by country of origin and destination shows that Germany is the major origin followed by the UK, together they produce about half of the trips. The pattern at the destination side is different: countries like Spain, France and Italy attract large shares of the trips; together they attract about 35% of the trips.

With respect to the travel mode used available data on cross border tourism trips indicate that the car is the dominant mode for most countries.

Explanation of patterns and trends

It was concluded that no sound and comprehensive theoretical base exists for tourism mobility especially when compared to regular mobility like e.g. home-to-work travel. It was investigated within each partner country which explaining factors are used to explain or predict tourism travel. Table A shows these factors by country; it was concluded that differences exist between countries but more importantly the theoretical base is still very much in its infancy.

Table A   Factors explaining tourism used in various countries

	Tourism	**Same day visitors**
Demographic	NL, UK, I, A, IL	NL, UK, I, A, IL
Socio-economical	NL, UK, I, A, IL	UK, A
Supply	NL[1], UK, I, A[2], IL	IL
Attitude/culture		
Other	NL[3], A[3]	NL[4], A[3,4], IL[3,5]

[1] Ownership of goods (boats etc.)   [4] Car ownership
[2] Prices   [5] Travelling party
[3] The weather   IL = Israel

ARTIST – Final Report

Relevance of tourism mobility for transport planning

The study concluded that of total mobility by surface modes within a country tourism mobility is a significant part with a share of 20 - 30%; this travel is almost exclusively realised by inhabitants. Furthermore, tourism mobility is by far the dominant travel purpose of cross-national travel with a share of about 75%.

In case of the air mode the share of tourists at international airports is ranging from 60 -90%.

The overall finding is that from a transport policy point of view tourism mobility is a highly relevant travel market in terms of both its volume and its impacts on the regional economy and the environment. Its specific characteristics require dedicated transport policies on top of general measures.

Urban visitor flow management practices

The second main part of the Artist project is to review visitor flow management practices in urban areas on the basis of a number of well-chosen cases. In general it was found that large differences occur with respect to the relevance of tourism to local transport planning as well as to the characteristics of the visitor flows. Until now tourism does not play an important role in local transport planning:

It was concluded in the study that packages of individual actions can or should be connected to overall strategies. The following strategies were identified:
1. Car free cities
2. Tourist coach management
3. Long-haul accessibility improvement
4. Flexible urban transport services
5. Tourist demand management
6. Information technology applications

The actions making up the various strategies are summarised in table B.

Table B   Actions included in strategies

Action	Strategy					
	1	**2**	**3**	**4**	**5**	**6**
Limited access by private car	C*					
Payment parking	VI*					
Park and Ride	I	VI				
Enhancement and promotion of public transport	VI					
Integration of public transport fares and services	VI					
Tourist coach control system		VI				
Reorganisation and enhancement of road network	I					
Enhancement of air connections and infrastructures			VI			
Cycling and pedestrian tracks	I					
Strengthening links between long-haul and local transport networks			VI			
Light Rail and new public transport systems				VI		
Intelligent transport systems	VI*	I	I			I
Tourist information systems	VI	VI	I			VI
Electronic booking and payment systems	VI	VI	I			VI
Alternative and Complementary city routes and attractions					VI	
Promotion of off-season events					VI	
Reorganisation of the urban structure	I					
Reorganisation of accommodation supply						
Site management					VI	
* = Not specific tourist oriented C = Compulsory I = Important VI = Very Important						

Research and Demonstration agenda

The importance of tourism mobility to general transport policy development both at the EU-level and the national level was clearly demonstrated. It is a specific category of mobility requiring specific and dedicated policy measures and transport services.

However, the necessary inclusion of tourism travel in transport policy making requires serious gaps need to be filled with respect to almost all aspects of sound policy making. These range from empirical information, forecasting and scenario-making tools, policy measures, planning and decision making processes and so on.

To this end the Artist project produced an agenda for Research and Demonstration; it describes the most important and urgent needs for new insights and practices in a structured manner.

ARTIST – Final Report

Table C presents the research and demonstration themes, whereas table D gives them classified by type of activity and level of decision making.

Table C   Overview of selected research themes

#	Title
1	Development of a set of adequate definitions
2	Development of a practice-oriented theoretical base of tourist travel
3	Behavioural study on tourist travel
4	Design of a survey on national and cross-national tourist trips
5	Design of survey method on urban tourism mobility patterns
6	In-depth analysis of national and cross-national tourism mobility patterns
7	Development of new forecasting models for tourism mobility at national and EU level
8	Traffic safety policies and tourism mobility
9	Development of international, integrated tourist-oriented transport services and systems.
10	Design and test of information systems for urban visitors
11	Development of advanced, flexible, demand responsive urban transport systems and services for visitors
12	Development of land-use/transportation strategies for managing urban visitor flows
13	Comprehensive visitor flow management strategies for big events
14	Development of ITS-based guidance systems for urban tourists
15	Impact of transport on tourism patterns
16	Development of a monitoring methodology for urban policies and measures related to tourism mobility
17	Development of an action to incorporate tourism mobility in national and EU decision making
18	Incorporation of tourism mobility in feasibility studies of big infrastructure projects
19	Development of an awareness campaign for local authorities of tourist destinations
20	Architecture of decision making processes at urban level
21	Guidelines for transport planning to include tourism mobility

Table D   Classification of the research themes (numbers refer to column 1 in Table C)

Level of decision making ? Type of activity ?	EU and national level	*'Urban'*
Theory development	1, 3, 5	
Data acquisition	2	8
Analysis of travel patterns	4	
Analysis of impacts		
Tools (models and other)	6	
Policies, strategies, measures and services	18, 19	9, 10, 11, 12, 13, 21
Monitoring and evaluation	22	20
Decision making process	7, 15	14, 16, 17

TABLE OF CONTENTS

Preface

This report is the final report of the ARTIST (Agenda for Research on Tourism by Integration of Statistics/Strategies) project, which aims:

- to analyse the share and dynamics of tourism in mobility;
- to review the existing tourism mobility flows;
- to review visitor management practices in European (urban) tourist destinations and
- to demonstrate the need for a Community transport initiative on this issue.

The ARTIST project is part of the Fourth Framework Program (transport program; task 12.6). The project is sponsored by the European Commission, Directorate General of Transport (DG Transport), The Dutch Ministry of Transport, Public Works and Water Management, the Austrian federal ministry for science and transport, The Dutch ministry of Economic Affairs, the Dutch Ministry of Education, Culture and Science, the Netherlands Board of Tourism and the city of Amsterdam.

This report presents the overall results. It contains two parts: a summary of the results of Work Package 1 (Current Situations and Trends) and Work Package 2 (The Management of Tourist flows) and a R&D agenda (based on Work Package 3; Integration of Findings and Recommendations).

Hereby we want to thank the responsible project officer of DG Transport and all partners for their contribution to this report.

Gijsbertus (Ben) Jansen
Marianne Vanderschuren

1   Introduction

1.1   Background and objectives

The ARTIST project has multiple objectives. On the one hand this project has to depart from the current situation and available knowledge and analyse tourism travel patterns as well as identifying best practices in urban visitor flow management. On the other hand this project has to look ahead by identifying major gaps in relevant insights or practices and proposing actions to improve this situation.

The main objective of the final report is twofold: first to describe and integrate the main findings of the project and second to give recommendations for a research and demonstration agenda of the European Commission. These recommendations specifically refer to tourism mobility, potential transport policy measures and the know-how base necessary for policy developments in this area. The actions proposed in this agenda are to be included in future Framework programmes of the EU and may be considered in policy development at the Community level.

This project addresses Task 12.6 'Study on the impact of Tourism on Transport and Study of Policy relevant implications' of the Transport RTD programme. Therefore, the perspective chosen is that of transport rather than looking to the issues from a touristic perspective.

Thus, the deliverable consists of two parts:
a.   A summary of the main findings and
b.   A Research and Demonstration agenda.

1.2   Approach

1.2.1   Summary and integration of main findings

This part of the report is based on Deliverables 1 (Current Situation and Trends) of Work Package 1 and Deliverable 3 (Review of Different Approaches and Best Practices) of Work Package 2. Deliverables 1 (Current Situation and Trends) and Deliverable 2 (List of Case Studies) contain the results of the analysis of current situation and trends with respect to tourism mobility as well as the practices with respect to visitor flow management in urban areas. In those reports detailed analyses and findings can be found. In this report the main findings from Deliverable 1 (Current Situation and Trends) and 3 (Review of Different Approaches and Best Practices) are presented and integrated as far as possible.

1.2.2   Research and Demonstration agenda

The following approach was followed in developing the R&D agenda:

a.   identification important research themes;

b.   description of the selected themes in a uniform format;

c.   integration of the themes into a coherent framework;

ad a.

Four sources were used to identify the major R&D themes:

- the results of Work Package 1 (Current Situation and Trends) and Work Package 2 (The Management of Tourist Flows);

- a concise literature survey;

- the questionnaire sent to participants;

- an in-depth discussion at two consortium meetings.

The tasks to be carried out in Work Packages 1 and 2 on the basis of available information clearly showed the main gaps of knowledge and information in the field of tourism travel patterns, tools, planning processes, flow management etc.

Additionally, a limited survey of relevant literature has been carried out. This survey aimed at (1) determining the role of tourism travel in national strategic transport planning and (2) to identify research programmes in which the transport aspects of tourism is being investigated. In total about some fifty documents have been found and studied. In the course of this activity also experts in the partner countries have been consulted on these matters.

At an early stage an extensive questionnaire has been used to elicit findings, ideas and suggestions from the partners which served as a basis for two brainstorm sessions at regular consortia meetings.

An initial list of research themes was produced together with a classification. In the Haifa meetings all participants were requested to comment on the classification and to extend the list with additional items or to suggest deletions. The result was an extensive list of research themes and a format for description.

ad b.

Each of the items have been described briefly using a fixed format; elements of the description are: background, problems, objectives, research methods, possible role of the EU, expected results and related projects. The consortium partners contributed or commented these theme descriptions.

ad c.

The agenda is creating by putting the research themes in a coherent framework.

ARTIST – Final Report

1.3   Contents of the report

This report is organised as follows. Chapter 1 gives a short introduction about the project and the approach. In chapter 2 the reader can find an overview of passenger transport policy issues, including the importance of tourism mobility. Chapter 3 giving an overview of the characteristics and trends of tourism mobility. The relevance of tourism mobility on an aggregated level can be found in chapter 4 followed by the characteristics and trends on an urban level in Chapter 5.

The R&D agenda consist of two parts. The first part is the overall framework in which the research themes are brought together. Interrelationships are described from several points of view, subject, priority and phasing (chapter 6). The second pat is the description of the individual research themes according to the fixed format (chapter 7).

2   Passenger transport policy issues

2.1   General Policies

In Europe transport constitutes an important issue. When comparing European countries at one point of time a significant diversity in personal mobility patterns is observed[1]. However, looking at developments over time many similarities can be seen. Growing car ownership and car use are dominant phenomena as well as the rapid growth of air travel. At the same time public transport is under pressure. Connected to the rise of the car as the dominant mode is the rapidly changing structure of cities into large urbanised zones.

It has been shown elsewhere that economic and demographic forces are the main factors of these developments together with technological innovations in the transport industry. Given the anticipated economic growth in Europe it may be expected that the mobility levels will increase further.

Transport is a double-sided coin. On the one hand transport and accessibility is a necessary precondition for economic development and requires huge investments. On the other hand, transport causes several severe problems. Safety is a major problem with each year about 50,000 fatalities in Europe: each decade a city like Rotterdam, Florence or Cologne is completely wiped out. Environmental damage of traffic is huge mainly connected to road and air travel.

There is a strong need for adequate policies at all levels of political decision making: the EU, country and the region. It will be clear that there is no single policy that can solve such complex problems. Instruments include technology, infrastructure expansions, pricing, land use, transport demand control and traffic management.

At the EU level the Common Transport Policy aims at a safe, efficient and sustainable transport system. Important instruments are improving market access and competition, fair pricing systems, regulation etc. These instruments affect transport volumes, modal shift, the efficiency of the transport system as well as the vehicles as sources of emissions. Another important elements of the transport policy at the EU-level are the Trans-European Networks which is a programme aiming at realising a strategic network of transport connections.

2.2   Role of tourism mobility in transport policy

For several reasons transport policy has to take tourism into account explicitly. First, it is a significant part of total mobility; various studies of the transport market at the national and EU-level indicate that tourism and leisure mobility is important. Looking at specific time periods (e.g. holiday periods) or at

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[1]   See also: Salomon, I., Bovy, P.H.L. & Orfeuil, J.P. [eds.], 'A billion trips a day - tradition and transition in European travel patterns', Dordrecht, Kluwer Academic Publishers, 1993.

Nijkamp, P., Reichman, S. & Wegener, M.[eds.], 'Euromobile: transport, communications and mobility in Europe - a cross-national comparative overview', Aldershot, Avebury, 1990.

particular corridors (e.g. alpine crossings) its importance is evident. Several studies into specific facilities or projects showed that this type of mobility even becomes dominant. Examples are High-Speed Train connections or international airports. On a regional level (cities, resorts) the amount of tourism traffic is large which affects congestion levels, the environment, land use and social security in a negative sense.

Second, it may be expected that tourism mobility makes up a large part of long-distance or cross-national mobility. This segment of mobility is of particular interest to the policy makers at the EU-level.

2.3   Tourism mobility: an important research topic

Tourism mobility is relevant to transport policy but very little is known about it. This lack of insight has different reasons. To begin with traditional mobility analysis dealt predominantly with regular mobility, mostly within the daily activity space. Mobility with purposes like work, private business, shopping, education etc. have been studied widely and a large body of empirical and theoretical knowledge has been accumulated over the last decades. However, tourism and leisure mobility has been almost neglected resulting in a very limited body of knowledge.

In the transport research world a lot of knowledge about regular (or systematic) mobility, like the every-day-trip to work, is available. In general it is relatively easy to gain information about systematic and frequent trips because they mostly have one single destination.
It is much more difficult to describe and explain multi-destination infrequent trips where the utility of the trips is attached to the trip itself. It is clear that insights gained into regular mobility cannot be easily transferred to non-regular trips, like tourism and leisure trips, given the big differences in nature. A big lack of knowledge exists which is detrimental to the quality of policy development and planning. Special properties of tourism mobility are its non-regular and rather occasional character implying a limited level of information of the traveller on his choice alternatives.

Not only little is known about tourism mobility itself, also policies and practices specifically directed towards to this type of mobility and traffic have only been developed on a limited scale. Therefore it is needed to describe and analyse measures developed in various European countries and regions in order to exchange experiences and make available to practitioners the best available instruments.

From the survey on major R&D programmes it was concluded that except for the French and Swiss programmes, tourism mobility is not an item of any transport related research programmes.

3   Tourism mobility: characteristics and trends at an aggregated level

3.1   Empirical base

3.1.1   Definitions

An important conclusion from the investigation into the availability and adequacy of data sources, which could serve as a base for the description of tourism mobility, is that tourism and transport are two different and separate fields.

In transport a system of concepts and operational definitions have been developed during the last decades. They proved to be reasonably adequate for transport planning purposes. In the field of tourism despite the efforts of international organisations definitions and concept still are lacking precision. The WTO and Eurostat set of definitions can be seen as the most operational one[2].

It was concluded that although tourism is a subset of mobility it is very difficult to match both sets of concepts and definitions. In transport three key elements are distinguished:

- Trip, which is a movement of one person between two places where activities are carried out other than changing modes.
- Trip leg, a part of a trip that is travelled by one mode
- Tour, a sequence of trips originating from a base like home via various destinations back to the base.

In principle all movements of individuals can be described using these elements given the fact that each trip and trip leg has a purpose, modal sequence, starting and ending times, origin and destination etc.

In tourism the situation is much more complicated and less sharp defined. To begin with tourism research, it only relates to travellers who are making a trip to a place outside their usual environment, staying there less than a year. Moreover, the main purpose of these travellers should be other than the exercise of an activity remunerated from within the place visited. It is clear that this definition of tourism is not precise.

A second important difference is between the concept trip as it is used in transport and in tourism. In the latter case a trip covers the whole period during which many destinations may be visited. No clear and operational set of definitions has been found on trips in the field of tourism.

The third main difference between transport and tourism refers to the definition of journey purposes. In transport research the usual purposes are home, work, business, social visit, education, shopping, personal business, leisure/entertainment/sport, touring, etc. In the field of tourism main purposes of tourism mobility are:

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[2]   Eurostat, 'Community methodology on tourism statistics', Luxembourg, European Communities, 1998.

- leisure, recreation and holidays
- visiting friends and relatives
- business and professional
- health treatment
- religion

It can be seen that a substantial mismatch between both classifications exists which makes comparisons very difficult. Tourism includes various purposes that are not seen as 'leisure' in the transport profession; e.g. business. A marked difference is that the transport field heavily concentrates on frequent, daily activities and journeys, tourism deals with infrequent and irregular trips. Moreover, unlike in regular mobility where the activity at the place of destination is the main reason for travelling, in tourism mobility the journey itself is part of the purpose.

Taking all differences together it must be concluded that from a transport point of view definitions and concepts used in the field of tourism are imprecise, not detailed enough with respect to mobility aspects, implying that it will be difficult to use insights gathered directly for transport studies.

3.1.2   Data availability and gaps

In Work Package 1 (Current Situations and Trends) the different data sources on mobility and tourism have been investigated. The sources in different European countries are not comparable. Moreover the sources always have a focus on either mobility or tourism. None of the countries has an integrated data source. Moreover the definitions used in different counties and different sources are very different.

The international level
At the European level tourism and mobility data sources are not integrated. For tourism there is one, main source, which includes all international trips of one night or more (European Travel Monitor: ETM). The number of characteristics considering mobility is limited. Only the mode of transport used for the crossboarder part of the trip is included.

For mobility there is not one integrated source. The European Commission is supporting research concerning the tuning of definitions and sources in different European countries for example in the MEST project and the DATELINE project. If all countries collect the same data using a common methodology, an international source is not needed; integration of the national sources is possible.

The national level

The way data is collected in the different European countries, which have been included in this study, is very different. The differences are various: the definitions, frequency of collecting etc. are not the same. Moreover, even within a country the definitions of different sources are not equal. Sources considering tourism or mobility are not using the same definitions.

As a first step, it should be possible to connect the tourism and mobility sources. Therefore the different national sources should include more characteristics. On an international level the tuning of definitions and included characteristics in different sources should be harmonised. The first steps are already made for mobility sources (the MEST project). Although this initiative is very positive, improvements are still required (this will partly be covered in the DATELINE project which will be started soon).

Nevertheless, the different countries should not wait for final definitions. If countries or local authorities can improve the data situation, they should do so immediately. Waiting for final definitions means loosing precious time. Local experiences might help to speed up the process (based on Work Package 2 it can be concluded that the problems, at a more local level are similar).

3.2   Empirical description of tourism mobility

The handicap of not having an integrated data source for mobility and tourism and the differences in definitions means that it is hardly possible the make a comparison of patterns and trends. Despite of all these problems, an indicative description of patterns and trends in Europe and in the different countries is given.

3.2.1   General trends

Since the 1960s, there has been spectacular growth in tourism in the Western world. This is due to the strong economic development of industrialised countries, the growth of consumer resources, the progress of air transport, more flexible immigration formalities at borders and more free time.

> World wide the number of international tourist arrivals is estimated at a total of 60 million in 1960, 286 million in 1980 and 635 million in 1998, according to the World Tourism Organization (WTO).

Tourism does not only include destinations like beaches and sun, or cultural trips to third world countries**:**
-          close to 30% of tourist flows have a city as their main destination and
-          some 70% of tourist activity world-wide takes place within OECD countries.
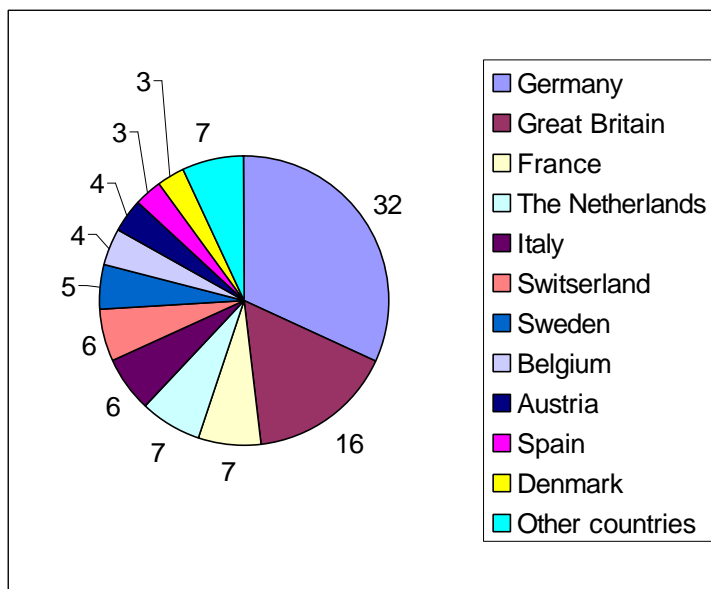
European trends
Within the world tourism, Europe is an important tourist market. An important data source for European tourism mobility is the European Travel Monitor (ETM). The ETM estimates that Europeans make 228 million international trips (overnight stays) in 1998. This is 2 billion nights spent abroad. Of these tips, 86% (196 million) is to European destinations. People from outside make an additional 70 million trips to Europe[3].

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[3]   The transfer passengers, included in this figure, deform these statistics.

ARTIST – Final Report

The ARTIST project tried to analyse tourist flows in Europe. It was mentioned before that mobility sources and tourism sources are collected and analysed separately. Moreover the definitions used in different countries, are not the same. Therefore, it is impossible to make a complete and consistent analysis of flows and trends of tourism mobility in Europe. In general the figures given in this section, indicate that knowledge of international tourism mobility is available from the ETM. Information about the origin, destination, purpose and seasonally is given. To be complete a note has to be made. The description of the tourist market, presented in figure 3.1 to 3.5 is based on the ETM. The ETM is an international Tourism source. What is seriously lacking is similar, consistent information on

domestic tourism mobility.

Figure 3.1   Origin of European international tourism mobility [%]
(Source ETM, 1998)

For the European travellers the main origins and destinations have been investigated (figure 3.1). The main origin of travellers in Europe is Germany (32%) followed by the UK (16%). The main explanation is the number of inhabitants in these countries. Surprising is that the low French participation. The French apparently stay much more in their own country for their holidays.

The distribution of international trips made by Europeans by destinations shows that (in contrast to the origin) France (12%) is second destination within Europe directly after Spain (13%). The percentage for each county is shown in Figure 3.2.
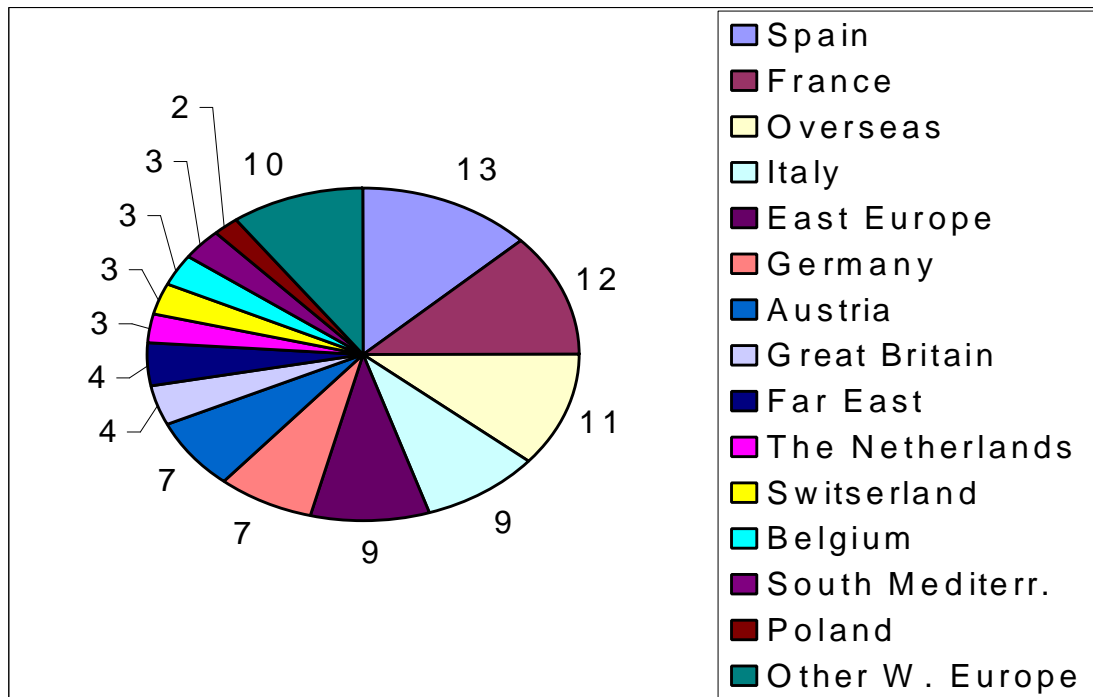
Figure 3.2   Destination of European international tourism mobility [%]
(Source ETM, 1998)

In addition to figure 3.1 and 3.2 gives figure 3.3 an overview of the flows within Europe.
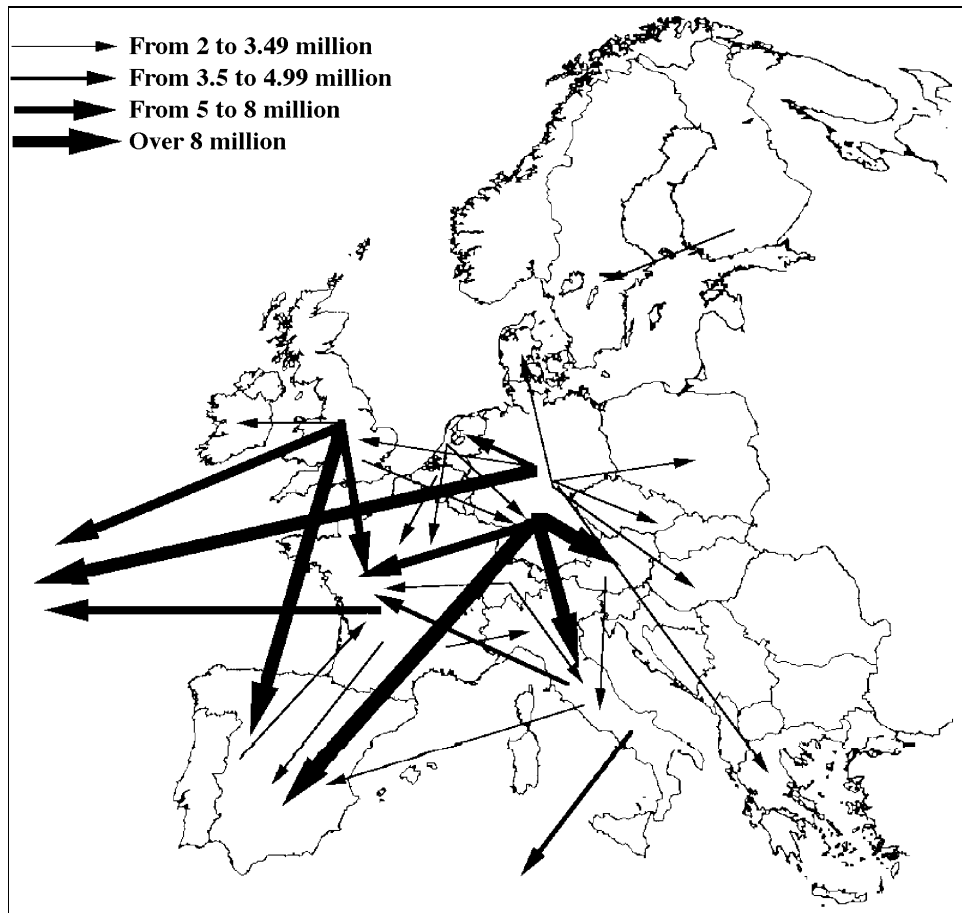
ARTIST – Final Report

Figure 3.3 International flows (more than 2 million people) in Europe – All transport means – 1998
(Source: F. Potier – according ETM)

Figure 3.3 integrates the findings of figure 3.1 and 3.2. The graph shows that Germany is the main origin within Europe and Spain, France and Italy are the main destinations. Moreover the flows to non-European destinations are quite large.

Many purposes are included in the international tourism mobility. Figure 3.4 gives an overview of the breakdown.
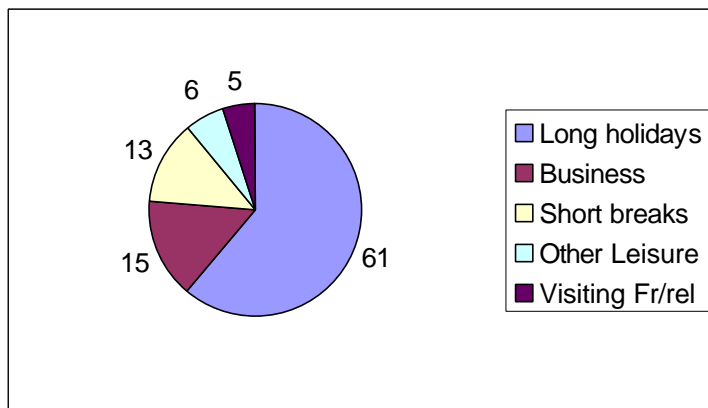
ARTIST – Final Report

Figure 3.4   Breakdown by purpose of international mobility by Europeans [%]
(Source ETM, 1998)

It can be seen that by far the major part (75%) of European international overnight tourism trips is for leisure purposes. Of these trips long holiday trips (61%) and short breaks (13%) are the most important categories.

An important aspect for transport policy purposes is the seasonally of tourism. Conversely, business mobility declines in July-August and peaks (though not so markedly) is in April and October. Visits to friends and family are spread more or less evenly throughout the year, with a slight peak around Christmas and the New Year. Short breaks are evenly spread over the summer season. Figure 3.5 fives an overview of the seasonally of tourism mobility for different purposes.
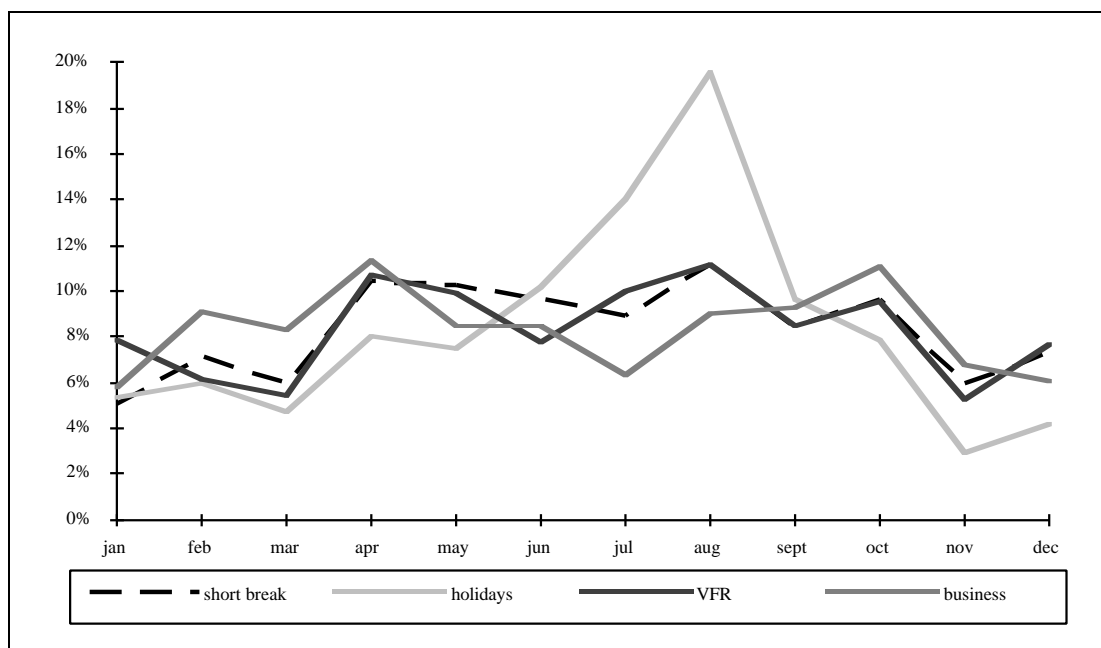

Figure 3.5   Breakdown of the numbers of international trips of Europeans by purpose
and month of travel (source ETM, 1996)

Short breaks have become more and more popular and total holiday time has been split into several trips a year averaging 8-10 days. This trend occurred first in countries such as the UK, the Netherlands and Scandinavia[4].

The traditional pattern of a whole month spent in only one place is changing into:
- A shorter main holiday;
- The main holiday might be spent further away (other continents) and
- People have more holidays a year (increase of the number of short holidays).

Analyses of the trends in different countries shows that the number of short trips is increasing. The short breaks are not substituting the long holidays, although the lengths of these holidays are getting shorter. Generally the travellers have additional short breaks. Mainly a boom of the economy explains this additional mobility.

The share of business mobility is only 15%. There are several indications that international business mobility is decreasing over the years. The impression is that contacts are not getting less. Because of the decrease of travel times, businessmen can more and more return the same day. The ETM only registers trips of one night or more. This causes the decrease of business.

3.2.2 *Patterns and trends for the different countries*

As mentioned before the reader of this chapter has to be aware of the definition and data problems faced in this project. As the definitions and sources are so different, it is hardly possible to compare the trends in different countries in a consistent manner. Nevertheless, in this section it is tried to compare tourism mobility in several countries and to establish some trends given these data incompatibilities.

Within the ARTIST project, tourism mobility in six countries has been explored. Unfortunately not all required information was available within these countries. This paragraph summarises the information available in the explored countries (the UK, Italy, The Netherlands, France, Israel and Austria).

Because of differences in size and number of inhabitants of the different countries it is also hard to make a comparison. To eliminate this problem the following graphs, describing tourism mobility in different countries are given in index numbers or percentages. For detailed information the reader has to consult the individual country reports (produced as a part of Work Package 1 (Current Situations and Trends).

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[4]   Between 1985-1991, for all European countries, the number of abroad short breaks increased 3.5 times faster than holidays. (N. Cockerell, F. Potier, EIU, 1992).

ARTIST – Final Report

General mobility in different countries

Total mobility varies a lot between European countries. In 1990 the total mobility varied from 8700 km per person per year in Belgium to 12800 km per person per year in Switzerland (ECMT 1990, EUROSTAT, 1990),

The partners in the consortium included trends on total mobility in their country reports; figure 3.6 gives an overview of the available trends.
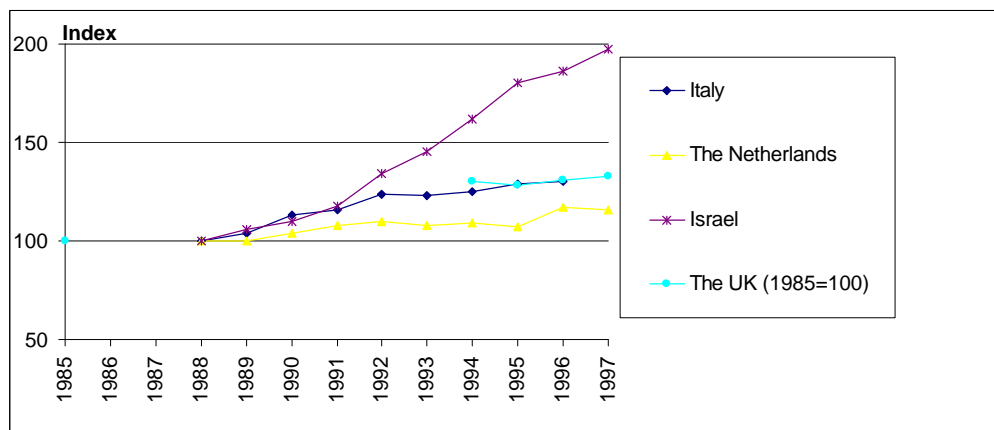

Figure 3.6   Total mobility[*] **within** a country compared in the ARTIST project (based on person kilometres, 1988=100)

In general it can be concluded that the total mobility in different countries is increasing with about 2% to 4% a year (except for Israel). The mobility growth in Israel is much larger.

The main reason for this major growth of Mobility in Israel, is the huge immigration of inhabitants of the former Soviet Union in the nineties. The moderate growth in the Netherlands may be caused by a long period of stagnating incomes initiated by policy push.

Despite many attempts in the past, researchers have not been able to give an adequate explanation of the inter-country differences (Salomon, et al, 1993).

The main focus of this study was not general mobility but tourism mobility. In the country reports (part of Work Package 1) different partners have given tourism mobility patterns and trends.

Tourism mobility in different countries

The index numbers according to the number of tourist trips to a country (inbound) are compared. For Italy the number of trips made by foreigners within Italy is given[5]. The development of the number of tourist trips during the last decade is given in figure 3.7 for a number of countries.

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[*]   Sum of the mobility for all modes and all purposes.

[5]   The inbound numbers were not available.
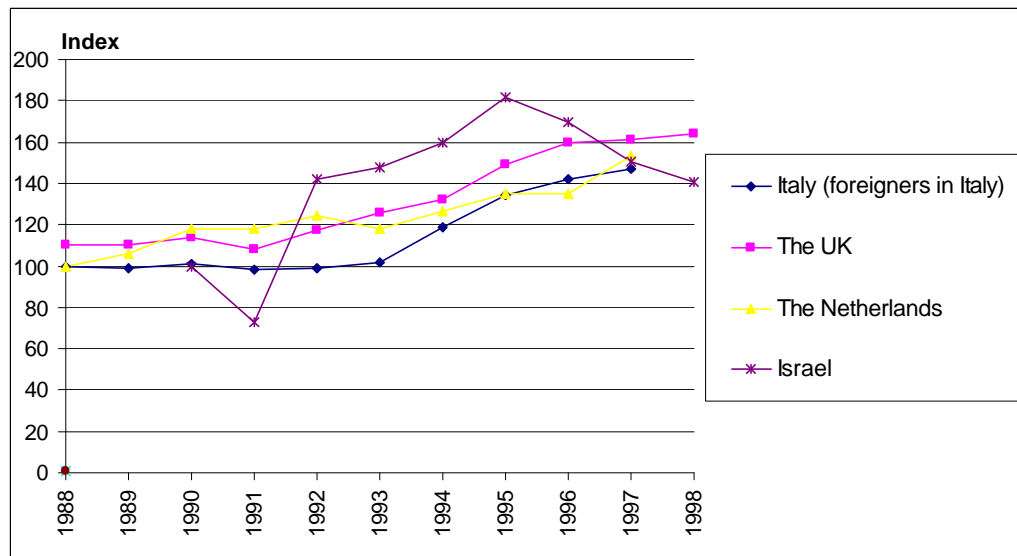
Index

Figure 3.7   The number of inbound tourist trips (index, 1988 = 100)

Similar to what was observed for the general mobility within a country we notice that the number of inbound trips also increased. The trends are similar to the general mobility too.

The UK shows an increase of 60% in 10 years, the Netherlands and Italy around 50%.
For Israel the political situation in the region (i.e. the Gulfwar) influences the trend. A clear increase is only found after 1991. The decrease from 1995 is also caused by the political situation in the region.

Only the UK, Israel and the Netherlands had data available for outbound tourist trips. Figure 3.8 shows the developments.
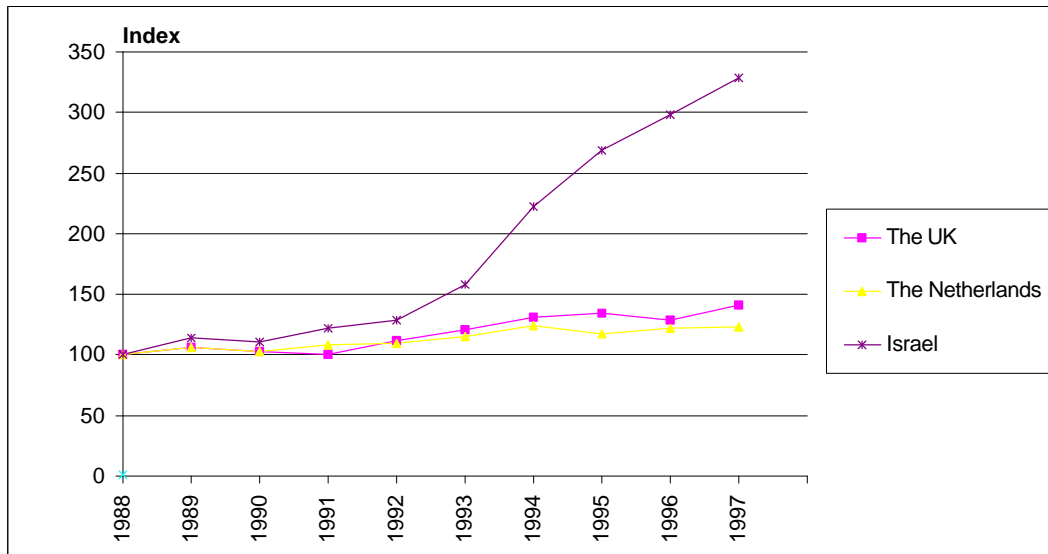
Figure 3.8   The number of outbound tourist trips (index, 1988 = 100).

For the UK and the Netherlands there is a steady increase of the number of outbound trips (20% to 40%). For Israel the increase is surprisingly steep. In 1997 the number of trips is more then 3 times as much as in 1988. The increase of the number of inhabitants (about 1 million Russian immigrants moved to Israel) causes this increase.

Mode of transport

In addition to the trends in total volumes in mobility, also the modal split has been described. The modes of transport used in the different countries are investigated. These modal shares are given in figure 3.9 (available percentages per mode are given).

Figure 3.9   Mode of transport used **within** a country (total mobility) [%]

As the title of the Y-axe shows, the definitions in different countries vary a lot. Nevertheless, it can be concluded that the car in all countries is by far the dominant mode of transport, it shows ranges between 70% and 90%. In Italy domest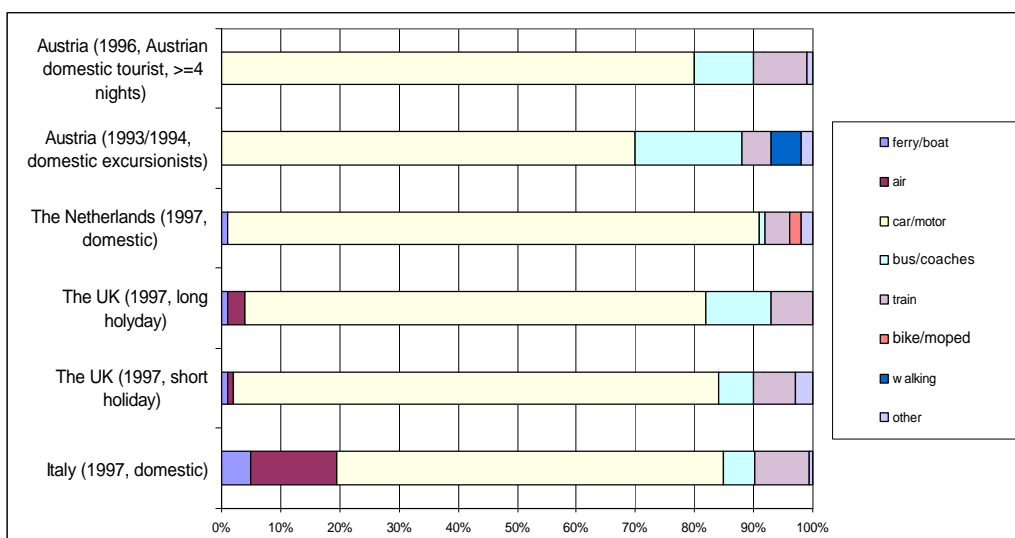ic mobility by train and air is quite important too. In the UK, about 15% of the people used busses/coaches and the train to go on a short or long holiday. In Austria the role of busses/coaches alone is almost 20% for domestic mobility.

In addition to the mode of transport used within a country, different countries also had information available of mode used for cross border tourist trips. It was tried to describe the modal split of cross border tourist trips, despite the definition problems.
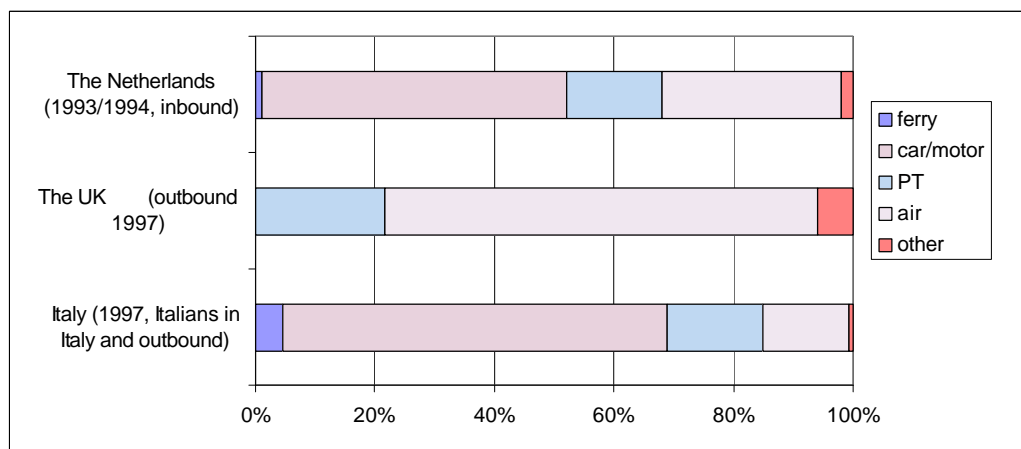
Figure 3.10   Modes of transport[6] for cross border tourist trips (PT = public transport and coaches) [%]

Figure 3.10 gives the modes of transport used to make a cross border trip.

In general it is concluded that the car is the main mode of transport for cross border trips. Only for the UK the role of air traffic is much more important. Because of the natural border in the UK, this is not surprising.

The role of air traffic in the Netherlands is surprisingly large. An explanation why this is so different from other continental countries can not be given. There is a slight indication that the Netherlands often is visited for a short break. Because of the short stay visitors may want to travel fast.

Nationality of tourist
The next comparison carried out for the different countries is the nationality (origin within a country or abroad) of people staying in tourist accommodation. A difference has to be made between inhabitants of the country and foreigners visitors. Figure 3.11 gives an overview of the percentages.

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6   For the different countries the available date was partly inbound and partly outbound. Nevertheless the percentages give an indication of the used mode of transport for different countries.

ARTIST – Final Report

Figure 3.11   Nationality of the visitors staying over night.
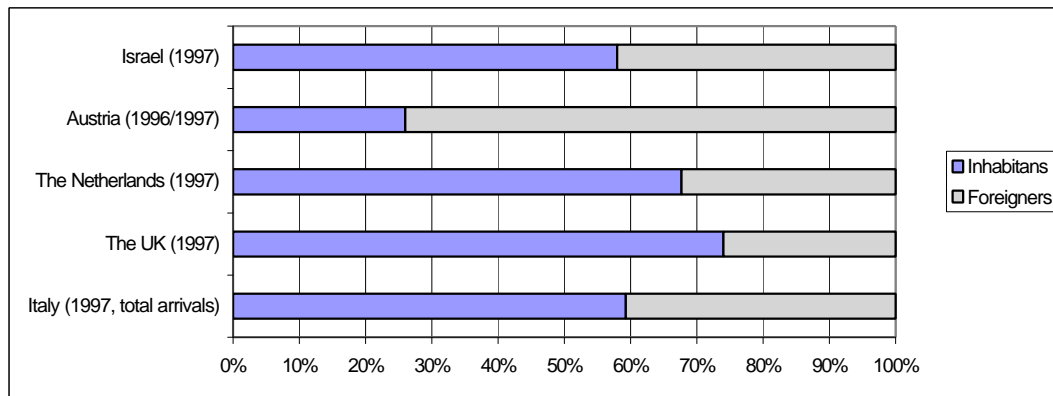
It can been seen that in most countries the majority of visitors are inhabitants.

In the UK we even see that more then 70% of the visitors are inhabitants. Only in Austria the number of foreign visitors is dominant (more than 70%). These percentages indicate that the ETM only includes a part of the total tourism mobility in Europe.

3.3   Explanation of tourism mobility

3.3.1   *The theoretical base*

It was concluded earlier that no sound and comprehensive theoretical base exists for tourism mobility, especially when compared to regular mobility like home-to-work etc. This makes an explanation of the current situation and the trends rather difficult. This holds both for the aggregate level of flows and the disaggregate level of individual choice behaviour.

3.3.2   *The aggregate level*

At the aggregate level it became clear that a distinction needs to be made between the geographical relations (i.e. domestic, inbound, outbound), type of tourists(overnight versus excursionists) and the sub-purposes (e.g. leisure/recreation/holidays versus business). Each class of tourism mobility will have its own explanatory factors. It was found that hardly any work has been done on such explanatory analysis, although there are some models (for example MATISSE2000 and the Tourmodel) using explanatory factors for different classes. The Dutch Tourmodel for example gives quantitative forecasts of tourist flows to and from the Netherlands using econometric techniques. Even this model does not produce estimates of mobility flows between geographical areas.

3.3.3   *Classes of explanatory factors*

At a general and qualitative level the following classes of factors were found to be dominant:
- demographic variables like age, household composition
- socio-economic like labour participation, income and number of working hours
- supply of tourist facilities and services like attractions, accommodation, price level, travel packages and accessibility in terms of distance, mode of transport, price.
- Attitudinal and cultural factors like the values attached to leisure and specific attractions or activities
- other factors like political crises and conflicts, weather etc.

The partners in the ARTIST consortium investigated what main factors are considered important in their own country. The experiences of the different partners concerning the different factors are not equal. Neither it can be concluded that these factors can explain all trends. Further research is still done and required. Table 3.1 gives a summary of the factors in the different countries.

Table 3.1   Factors explaining tourism used in various countries

	Tourism	**Same day visitors**
Demographic	NL, UK, I, A, IL	NL, UK, I, A, IL
Socio-economical	NL, UK, I, A, IL	UK, A
Supply	NL[1], UK, I, A[2], IL	IL
Attitude/culture		
Other	NL[3], A[3]	NL[4], A[3,4], IL[3,5]

[1] Ownership of goods (boats etc.)   [4] Car ownership
[2] Prices   [5] Travelling party
[3] The weather   IL = Israel

3.3.4   *The most important factors*

Important factors that have caused the recent trends in European tourism are the following:
- Rising income levels and increasing free time of workers. Less working hours per week, larger number of leave-days and the reduction of the retirement age causes the latter.
- The large group of affluent pensioners.
- Developments of new transport systems offering higher speeds at lower costs. Major factors are the high level of car ownership combined with an extensive motorway system, the introduction of wide range of cheap air mobility services.
- The development of a large tourist industry offering all kinds of accommodation, packages etc.

3.3.5   *The micro level*

In order to predict tourism mobility flows it is necessary to understand individual choice behaviour at the micro-level. However, except for some minor attempts no such analysis or models have been identified. This means that insight into the proper decision units, choice alternatives, relevant attributes of the alternatives, choice constraints and preferences are almost completely lacking. This is

the more serious since it is clear that this behaviour in tourism mobility is completely different from that in regular and well known travel purposes. See also above.

3.3.6   Need for theory

The present study clearly shows that in order to be able to take tourism mobility into account in strategic transport planning and policy development, a sound theoretical basis needs urgently to be developed. Only if the know-how base is substantially improved up to the level of the insights in regular travel behaviour and patterns, tourism mobility can be incorporated in transport policy making.

3.3.7   Need for and availability of predictive models

On the basis of such a sound theoretical basis predictive models can be built. These models are needed for the different levels of decision making with respect to transport.

At the EU level these instruments are needed for developing pricing strategies and the planning of major European infrastructure networks (airports, high speed trains and motorway systems). At the national level similar needs exist for developing more detailed policies and networks. At the level of project planning - specific airports, TGV-lines, TEN-connections and such tools are needed for carrying out feasibility studies. It is clear that models most likely will be different at different levels.

Mobility models
No specific models that predict tourism mobility at a cross-national or national level in a way that takes the peculiar characteristics of this type of mobility into account have been found. In most national transport models tourism mobility is at best dealt with similarly as regular trip purposes. Cross border mobility is dealt with in an even more simplified manner.

Models on tourism
A few predictive models on tourism have been identified. The Dutch Tour-model is an example. However, it is very difficult to translate its outcomes (visitor volumes and flows) directly into mobility flows in a way that it serves the purposes of transport policy making.

At the level of individual airports rather simple models are being used to forecast the number of passengers arriving and departing. These models are in general of a very simple econometric nature predicting these numbers using a few variables like regional GDP.

4 Relevance of tourism mobility for transport planning and policy development at an aggregate level

4.1 Empirical base

In order to justify a specific Community R&D action on tourism transport it is needed to demonstrate the relevance of this type of travel to general transport policy making. To this end the share of tourism mobility in total mobility needs to be determined. The relevance of course also stems from the typical characteristics of tourism mobility but this has been illustrated elsewhere in this report.

In none of the investigated countries, adequate data are available to make a well-founded and direct estimate of the total passenger or vehicle kilometres of tourism mobility within the country. In order to give reasonable estimates it was necessary to depart from available data and to make additional assumptions based on expert judgement and logical reasoning. The results therefore should be seen as orders of magnitude based partly on data and partly on expert judgement; a common line of thinking has been followed for producing the estimates.

Even then for a number of countries no estimate could be given; these have been excluded from the analysis given below.

In the next sections the following items are dealt with:
▪ The share of tourism mobility in total mobility within a country
▪ The share of foreigners in tourism mobility within a country

As far as information allowed us this has been done for:
▪ total travel (all modes)
▪ travel by mode (car, rail and air)

4.2 Types of countries

The study clearly showed that the role of tourism mobility is different for different countries not only in terms of volumes but also in composition. An important factor is the geographical position in the network of receiving and originating countries; a useful distinction can be made between:
● origin countries with little through traffic (e.g. Netherlands, UK, Scandinavia),
● origin countries with much trough traffic, (e.g. Germany)
● destination countries with no through traffic (Israel, Italy, Spain, Portugal) and finally
● destination countries with through traffic (Austria, Switzerland, France)

It is clear that the importance of tourism mobility is different for each of these classes. Not only in terms of volumes but also as to concentration in areas and corridors, concentration in time and the possibilities for policies to remedy problems. To mention a contrast with respect to long holidays between two equally sized countries: in the Netherlands a substantial part of Dutch holiday makers is

going abroad but is hardly causing problems in the Netherlands since they leave the country after let us say 100 - 200 km. In Austria large flows of foreign visitors are destined for the mountain area and these are superimposed on very large through flows of Germans and Dutch on the Alpine crossings on their way to Italy.

4.3   Share of tourism mobility in total mobility

Data suggest that of total mobility by surface modes within a country tourism mobility is a significant part with a share of 20 -30%; this travel is almost exclusively realised by inhabitants.

On the other hand tourism mobility is by far the dominant travel purpose of cross-national travel.
It was shown that by far the major part (75%) of European international tourism trips is for leisure purposes. The analysis suggests that the longer the trips the larger the share of tourist purposes. E.g. in France 90% of long trips are tourism trips.

4.4   Shares by mode of transport

Air travel
In case of the air mode only the number of travellers is relevant and not so much the distance travelled. Most airport authorities carry out some form of passenger survey at the airport so data is collected but, unfortunately, very often the data is confidential.

As was expected, the share of visitors with tourist purposes is dominant at international airports ranging from 60 to 90% in countries where data were made available (Netherlands, Italy and UK). In peak periods this share is even higher.

It should be recognised that the definitions of travel purposes vary between countries; e.g. sometimes business travel is included and in other cases not. However, for this study it is sufficient to conclude that airports are largely serving tourists. This may have big implications for the planning and decision making with respect to airport investments because the inter-airport competition, substitution of air travel by rail or car, the feasibility studies including values of time etc. are largely influenced by the characteristics of tourism mobility. Given the huge investments Europe-wide in airports this is another justification for investing in a sound body of data, theory, models etc.

Rail
Unfortunately, data on the use of this mode by tourists and visitors were almost completely lacking. In the Netherlands it is estimated that dependent upon the definition of tourist purposes between 20 – 40% of total rail mobility is for tourist purposes (business travel excluded). Inhabitants of the Netherlands account for more than 95% of this mobility.

In Italy, it is estimated that of total rail mobility about 15% is related to tourism of which 95% are Italians and 5% foreigners. Apparently, foreign visitors are not a significant segment with less than 1% of the total domestic rail mobility market. On the other hand tourism mobility by inhabitants constitute a significant part. Hardly any through travel by rail exists in Italy. In Austria and the UK about 10% of mobility by rail is related to tourism, excluding business.

Overall, based on a limited number of countries it is concluded that tourism mobility is a significant share of rail mobility (10 - 30%, depending on definitions); foreign visitors on average account only for a tiny fraction of total tourism rail mobility within a country.

Car
The data situation is equally bad as for the rail mode.

Dependent upon the definition in the Netherlands about 25 - 30% of total car mobility is for tourist purposes, exclusive business. This figure refers to passenger kilometres travelled. Due to the higher car occupancy rate this share is about 20 – 40% in terms of person kilometres by car. Foreign visitors make up only 1 –2 % of total person kilometres by car.

In Italy this share is estimated at 30%, mainly realised by foreigners (70%). Given the fact that especially holiday travel is concentrated in summer periods in these months these shares will be much higher.

In Austria this share is roughly estimated at 20% and in Israel at about 13% (excluding business and foreigners).

The overall finding - which is indicative - is that tourism and leisure is a significant and important share of total car mobility ranging between 20 and 30%. As was explained above, the composition of tourism mobility will vary from country to country given its geographical position and its role as a tourist destination. Data however do not permit a geographical breakdown.

4.5 Current position of tourism mobility in national transport planning

Explicit role
From the review of national strategic plans in the countries of the consortium partners it is concluded that in most cases tourism mobility hardly plays any significant or explicit role as far as surface transport is concerned. Explicit means that dedicated measures are being taken/planned or that the (in)effectiveness of measures with respect to tourism mobility is taken into account. An exception is Austria where in the national environmental plan substantial specific consideration is given to it.

Implicit role
It is evident of course that national transport policies implicitly affect also tourism mobility since it is part of total mobility. For instance road-pricing systems, parking policies, fuel taxes etc. will apply also to tourism mobility.

Role in airport planning

In the case of air travel plans and measures are developed specifically for tourism mobility since the overwhelming shares of the passengers are tourists in the broad sense. Issues like airport capacity, airport location, airport access and egress as well as the possibilities of substituting air travel with high-speed rail are playing a major role nowadays.

5   Urban tourism mobility: characteristics and trends [7]

5.1   Representativeness of current sample of cities

Despite its small size the sample can be regarded as representative of the relevant population European cities. The case studies represent different classes of cities in terms of size, importance of tourism, segments of tourism and mobility characteristics. In the sample not only cities were included but also seaside and mountain resorts. It has been found that the sample of cases provides a sound basis for an initial analysis of urban tourism mobility.

5.2   Need for city sample expansion

Although the sample used allows in general a representative and meaningful analysis of urban tourism mobility patterns and related policies, an enlargement of the sample first of all would allow to give more thorough and accurate and stable analysis within classes of cities. In the present sample only one or two cases make up a particular class. Furthermore, it would allow more differentiation, especially between complex cities (metropolises) and 'specialised' tourist cities; thus identification and transfer of practices would be enhanced.

Moreover, it was felt that the present sample does not include cities where business mobility is the main tourism market.

5.3   Empirical basis: availability and adequacy of data

A very important conclusion is that no official, uniform and consistent data on visitors of the cities exist. So, the empirical basis for the analysis of the characteristics of the visitors including their mobility is extremely poor. In fact the same holds largely also for urban mobility data in general; whereas at the national level in many cases uniform and consistent travel surveys are being carried out, at the local level similar surveys are rare.

The only information on visitors available is based on non-systematic, ad-hoc local surveys, which are specific for each city and thus very difficult to compare.

In many cases those surveys do not include sufficient information on the mobility patterns of the visitors. In particular, local mobility of visitors is measured poorly or not at all.

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[7]   Throughout this report the terms urban and city also refer to Alpine winter and seaside resorts.

5.4   Volumes, patterns and other characteristics of visitors by city type

Composition of urban tourist markets[8] by purpose
It is very important to distinguish between various tourist markets: leisure, VFR, business etc.. Cities vary substantially in this respect. It is found that most cities are characterised by the dominance of the leisure segment. Rome, Amsterdam, Rimini, Alpine region, Canterbury show shares between 60 and 100%. Paris and Glasgow have lower shares. However it should be borne in mind that data are not comparable. Amsterdam, Paris and Glasgow show a large proportion of business travellers.

Duration of stay
The mobility behaviour differs significantly between tourists (overnight visitors) and excursionists (same day visitors). Not only different long-haul modes are used, also local mobility within the destination is different. So, it is important to determine the share of both types of visitors. In the sample studied huge differences exist between cities in this respect. Cities with a higher share of tourists are Paris, Rome and Canterbury whereas Amsterdam, Glasgow, Toledo and Jerusalem are characterised by a large share of excursionists.

Except for the typical resorts Rimini and the Alpine region the average stay of tourists, ranges from about 2 to 4 days. It is clear that the length of stay is related to the cities specialisation but it proved to be impossible to establish that relationship more precisely. Both resorts have a longer average stay of about 6 days. The longer the stay the more visitors rely on local transport facilities. The time spent within the destination is linked to the seasonality and the specialisation of the different cities. It seems to be related more to the type of tourism than to visitor distribution.

Use of modes
The use of the various modes by visitors to reach their destination and to travel within their destination is very important aspects from a transport planning point of view. Again, information about the modal split is very limited because of different designs of the local surveys, especially with respect to the classification of modes and classes of visitors included. It is not clear how e.g. the access mode from an airport is dealt with; what is the mode of a trip made by plane and then bus from the airport to the hotel? Is it plane or bus?

The main long-haul modes are air, car, coach and train. The car is very dominant for both resorts Rimini and Alpine region.
Large differences in modal split were found for the other cases; it is not easy to find an explanation. If the available allows segmentation, it can be seen that mode choice is different for tourists and excursionists as well as for foreign and domestic visitors. It is also clear that the connectivity of the city to rail and air networks is important. A tendency is that foreign visitors have a lower use of the car combined with a higher share of the plane and coach. Domestic visitors rely much more on car and train.

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[8]   As was expected total number of visitors vary widely between the cities investigated ranging from about 0.5 million (Canterbury) to 43 million (Paris) per year.

Since almost no information is available on the local mobility of visitors with the city of destination, regrettably, it must be concluded that nothing can be said about modal choice in local mobility. This means that an important base for local transport policy development is lacking.

Mobility chains
Although non-commercial (self-organised) trips continue to dominate urban tourism, the commercial sector of the market has been growing very fast and gaining share. The fastest growth has come from the sector using the services of the travel trade, i.e. travel agents and tour operators.

The introduction of increasingly attractive packaged offers – and mix-and-match type products, in particular - has provided a major boost to tour operator sales of city trips. The many specialist tour operators have been joined by the major generalists, whose bulk buying power has resulted in package prices that cannot be matched by individuals trying to tailor their own trips. Despite the packaged concept, travelers are often free to select their own transport, and they are offered a wide choice of hotels, as well as other options like local transport passes and tickets to cultural and sporting events.

In addition to tour operators, hotels, hotel groups, airlines and rail networks are increasingly putting together their own packages, thus competing with the traditional retailers. One very successful independent programme - launched in 1994 by European cities themselves - is the 'Art Cities of Europe' programme.

One of the major attractions of the city break market for the cities themselves is that it shows almost no seasonality patterns, except that it shuns the peak main vacation months of July and August. But it does tend to favour the larger, better known cities at the expense of secondary destinations. Clearly, it is easier to sell London, Paris and Amsterdam, rather than to Bussy St. Georges or Maastricht. However, as already indicated, smaller towns and new destinations further afield are constantly being added to tour operators' programmes. Often, these are linked to new regional air services or to excess capacity on long-haul routes.

Role of tourism mobility on total mobility
As regards the role of tourism mobility on total mobility, no specific data is available. Nevertheless, while tourism mobility looks very relevant for Rimini, Alpine Region and Canterbury, it shows a lower, although important, impact on Amsterdam, Toledo, Jerusalem, Paris and still less on Rome, Barcelona, Glasgow. Seasonal destinations are characterised by the highest impact because of the significant variation of traffic flows determined by tourism demand. On the other hand, the less important role of tourism mobility on Rome's transport system is determined by its impressive systematic demand.

5.5   Proportion of urban tourism in total (inter)national tourism

Data problems
Again, comparative data on urban tourism across Europe is almost non-existent because of different methodologies and sample bases used from one country to another. It is concluded that urban tourism demand is greatly underestimated in view of the fact that many surveys ignore same-day travellers (excursionists) who generate a significant volume of visits to cities and towns.

Estimate based on ETM data
The European Travel Monitor is the only pan-European data source allowing a rough estimate of the share of urban tourism. It should be realised however that the ETM only includes international holiday trips with at least one night's stay made by Europeans. Of this type of trips about 19% are so called city trips. If a distinction is made between long trips of more than 3 nights and short trips of 1 - 3 nights the share of city trips is 16% and 32% respectively. Again this is most likely a gross underestimation mainly since business travellers; excursionists and domestic visitors are not included.

5.6   Overall typology of cities

The main tourism markets (Business and professional, Leisure, Recreation and holidays, Visiting friends and relatives, Religion and pilgrimage) must be taken into account when analysing the impact of tourism on the transportation system, since the incidence of different typologies of visitors directly affects the distribution of demand within the city and the use of local services.

Even if data available are neither homogeneous nor sufficiently detailed, some grouping criteria can be found within the Market Segment Scheme.
Most cities are characterised by a *prevailing leisure segment*. Nevertheless proportions and travel purpose are highly differentiated: Rome (67%, with a large cultural share), Rimini (95%, mainly Sun & Beach), Amsterdam (62%), Canterbury (62%), Alpine Region (almost 100%, with a large sport share), Barcelona (52%), Paris (42%), Jerusalem (40%).

Ten main urban functions, representing a list of homogeneous indicators describing the administrative, economic, cultural, tourist and transport role of the city, have been taken into account (Deliverable 3 – The Management of Tourist Flows).

The selected cases have such that a variety, not only tourism mobility but also because the role of tourism in the city may vary. In order to be able to typify cities the following variables were considered important:
- Size of the city
- Ratio of number of visitors and population
- Importance of the service sector
- Role of the city as catalyst of innovation
- Importance of tourism to total local mobility

- Share of excursionists in total number of visitors
- Connectivity of city to international and nation transport networks

Each of the cities, including the Alpine region, has been described in these terms using a self-administered questionnaire; The following spider graphs synthesis the results.
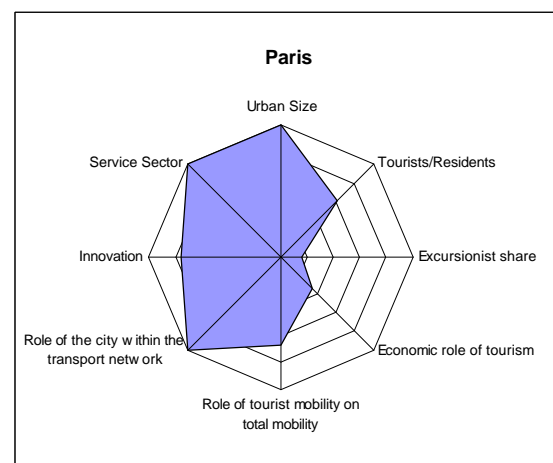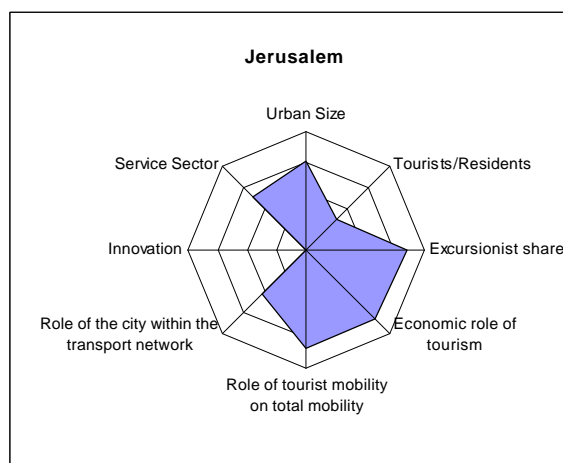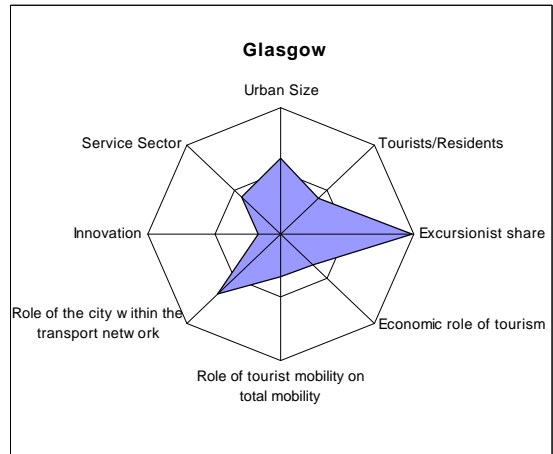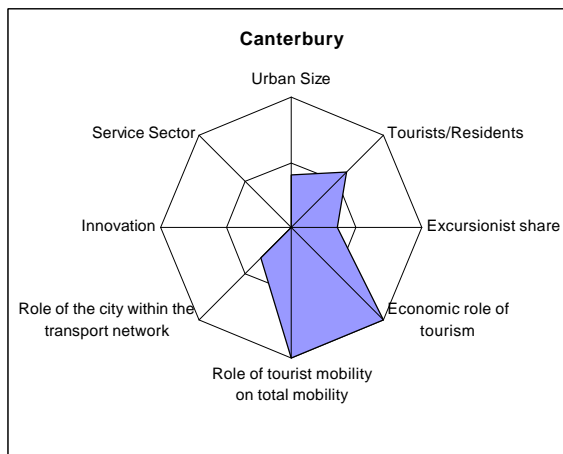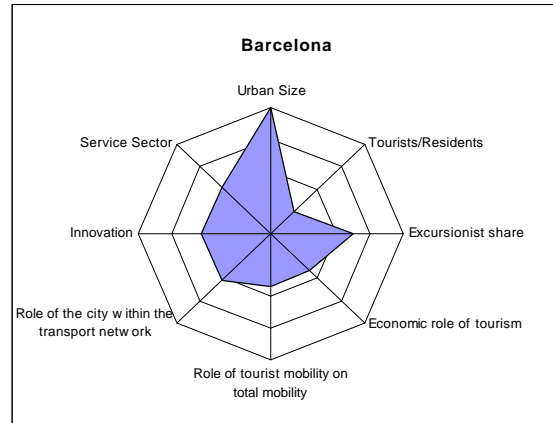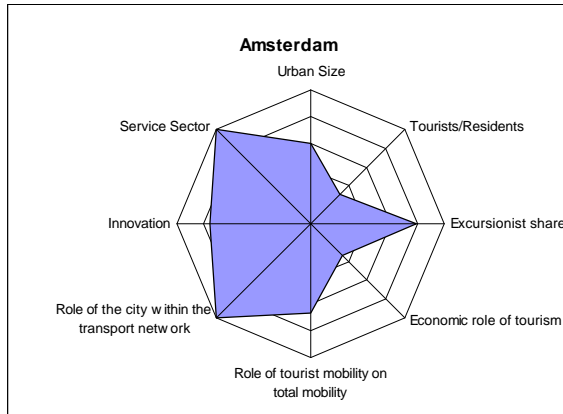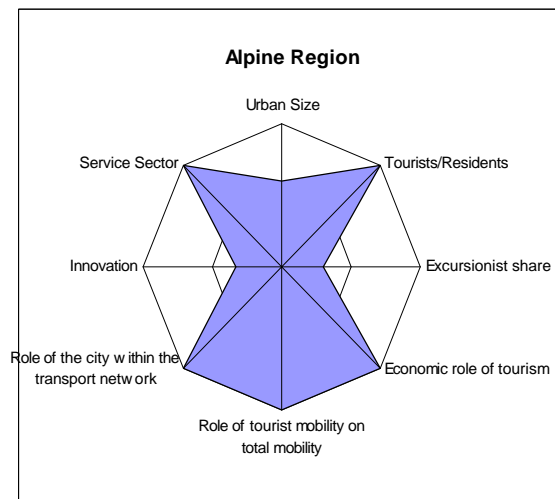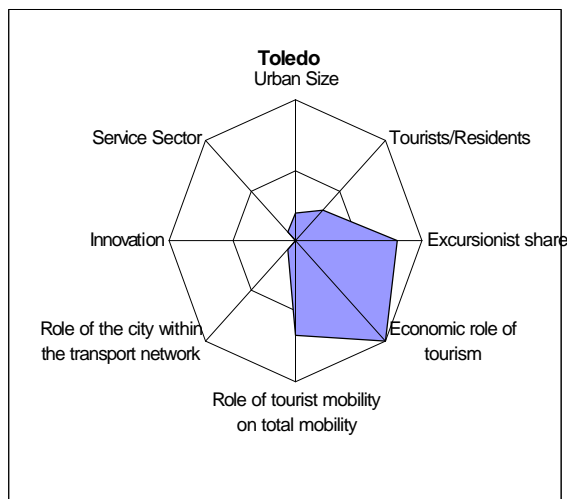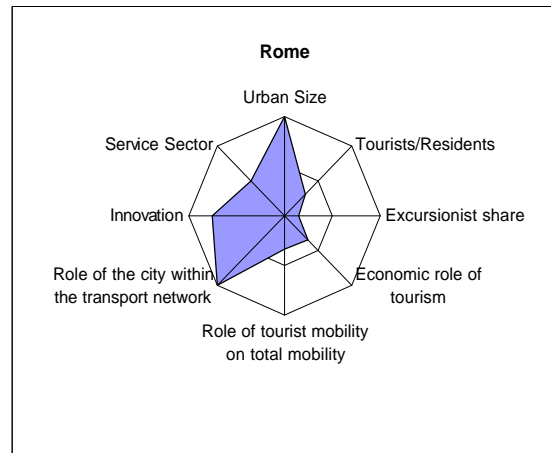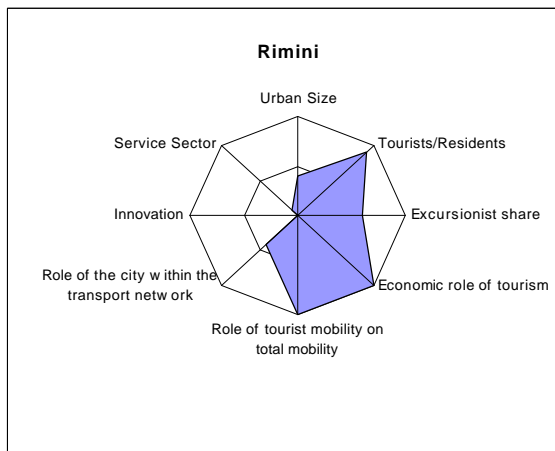
The main conclusion is that both the importance of tourism to local transport and the characteristics of the visitors themselves show large differences. As will be elaborated further it is important to realise that travel related to visitors is superimposed to local mobility stemming from regular daily mobility (a systematic part). If this 'base load' is very large even in big cities substantial visitor flows may submerge. Of course, in specific tourist areas even there, particular transport problems may arise. In small cities visitor mobility may become dominant.

Strong similarities can be found between the metropolitan areas (Paris, Rome and Amsterdam) where 'Service sector', 'Innovation', 'Role of the city within the transport network' are very developed and the urban size is significant. Barcelona and Glasgow seem to be a newcomer in this group. 'Economic role of tourism', 'Role of tourist mobility on total mobility' and 'Tourists/Residents ratio' record a high score in Rimini, Canterbury, Toledo and the Alpine region. Jerusalem shares common characteristics both of the first and the second group. Amsterdam, Glasgow, Jerusalem, Barcelona are also characterised by relevant excursionist flows.

5.7   Urban tourism mobility: planning issues and visitor flow management practices

5.7.1   *Urban transport planning issues related to tourism mobility by city type*

Long haul accessibility

With respect to long-haul accessibility a marked difference exists between large and small cities. In most cases large cities do not consider this as a problem which is obvious given their position in strategic transport networks. On the other hand smaller cities often have inadequate air connections or insufficient road and rail links.

Inner accessibility

Low accessibility of inner cities due to car traffic is almost universally regarded as a main problem. As said above, in larger cities these centre-oriented car flows are predominantly stemming from regular (systematic) mobility whereas visitor flows make up only a minor part (Rome, Amsterdam, Paris, etc.) In smaller tourist destinations visitor flows play a much larger role in this congestion (Rimini, Toledo, etc.).

Related to the excessive demand for car mobility is the problem of insufficient car parking facilities although visitors do not suffer much. Apparently, due to the infrequent nature of their trips and their mode choice, visitors either avoid parking problems or are willing to pay for expensive facilities.

5.7.2   *Alternative transport facilities*

In many cases the lack of attractive travel services that may serve as an alternative to the car is regarded as an important problem. Most frequently the following services are mentioned as lacking or insufficient:
- inefficient local public transport systems (lines, frequencies, interconnections)
- lack of integration (intermodality) like Park&Ride facilities, fare integration etc.
- connections between large terminals(air, rail) and inner cities.

Traffic congestion caused by pedestrian flows has been solved in Amsterdam and Glasgow. Amsterdam also found effective remedies for insufficient infrastructures dedicated to environment-friendly modes (walkways, cycling tracks), traffic congestion caused by private cars (investment in ring-roads to avoid through traffic and P&R sites) and difficult long-haul accessibility (Plane-train link).

Time concentration

One reason for visitor flows causing transport problems is their variation in time. Partly, the pattern has a clear rhythm and is related to seasons: summer peak in sea-resorts, winter peak in ski-regions, etc. Partly, patterns are much more irregular and unpredictable; this is especially true for same-day visitors or excursionists. Large events (sports, exhibitions, fairs etc.) cause particular problems due to huge flows concentrated in time and space.

Impact of excursionism is also a common problem, because of the unpredictable behaviour of same-day visitors who represent a threat to the possibility of getting a real control over the system. Events, exhibitions, meetings represent an additional problems since they are strictly linked with flow concentrations and short stays, i.e. excursionists.

Information systems
Although information systems can be regarded as important tools to monitor and influence transport demand as well as to manage visitor flows, it is concluded that the development and implementation of such systems for tourism mobility is still in its infancy. Applications are limited to the local domain and do not integrate tourism needs with general transport solutions. Reference is made to the MATISSE2000-project of DG Information Society, which gives an excellent overview of the needs and possibilities of telematics in the area of tourism mobility.

Up to now, the use of such systems is still rather restricted. The development for future use on a wide-scale is considered one of the key-conditions for a better management of urban destinations. There is a strong need for standard interfaces and 'open' architectures, able to connect different systems and to favour the creation of common databases.

Overall gravity of problems
On the basis of a self-estimation (table 4.3.2) the following problems appear to be the most serious ones:
- traffic congestion in specific area's;
- noise and pollution and
- poor security.

Perceived negative impact of tourism on the local population is determined mostly by excursionism and seasonal peaks, both of them phenomena modifying the urban balance and increasing the existing mobility problems.

5.7.3 *Inclusion of tourism mobility in local transport planning processes*

Transport planning
As regards the inclusion of tourism mobility in local transport planning processes, the low weight of tourism within mobility plans must be stressed. The general approach does not consider explicitly the tourist sector as a strategic component of the whole mobility system. The management of tourism flows is often based on specific projects (Tourist Coach Control System in Rome; Fast Coastline Transport Service in Rimini) carried out by different actors (Agency for the Jubilee Preparations in Rome; TRAM, the local public transport company, in Rimini). Public Administrations do not usually introduce tourism-oriented policies within transport planning documents.

An important conclusion is the cities investigated - which have been selected as tourist destinations - that tourism plays only a minor role in local transport planning. Tourism is in general not considered

as a strategic component of the mobility system. As a result local public administrations do not develop tourist-oriented policies.

Management of tourist flows is mostly done on a project basis; specific projects dealing with specific areas and problems are developed and carried out by different actors like e.g. public transport operators. These projects do in most cases not fit in a coherent plan or strategy.

Actors

The presence of many players with low co-ordination is the most common problem, strengthened often by the imbalance between the public and private sectors and a prevailing transport oriented approach. Moreover, the weak role of the City Council in tourism planning, in local transport planning and in long-haul transport planning — even if at different levels in the different countries —, is a negative factor for an effective destination management. Decision-making processes developed without a specific knowledge of problems and with a reduced autonomy in investments do not lead to successful actions.

What is especially lacking is an overall approach of tourism in cities within which transport can be related to other fields of action, e.g. land-use planning, information, accommodation, opening hours, prices, etc.

It was found that although gradually the need for a comprehensive approach is building up in various cities, the almost complete lack of sound information and insights into urban tourism is a tremendous handicap.

5.7.4   *Tourist destinations and land use planning by city type*

Land use strategies

Apart from general land-use planning strategies that are in effect in order to reduce car mobility demand like concentration of employment areas near public transport nodes, no explicit land-use planning measures have been identified in the case studies with respect to tourist facilities and destinations.

5.7.5   *Transport, traffic and visitor flow management practices*

In Work Package 2 (The Management of Tourist Flows) some examples of strategies currently adopted by the selected case studies are proposed. The cross analysis developed, leads to the definition of a set of standard actions and strategies — in terms of management solutions adopted, technological devices utilised, etc. — for each issue discussed (accessibility, traffic congestion, distribution of visitor flows, etc). In fact, awareness about long-term strategies is not commonly present within mobility planning actions and almost never in tourism mobility management. In fact, problems, and therefore solutions, are transversal and strongly connected one to each other: it is

ARTIST – Final Report

difficult to precisely separate different aspects of the same phenomenon. Tourism and Transport are overlapping worlds: they influence each other and, therefore, any intervention in one sector also modifies the other.

Best practices coping with management of interactions between tourism mobility, systematic mobility and the transportation network are still small in number because of the following reasons:

- the role of tourism mobility is still underestimated by Public Administrations and public transport companies;
- many actions have only just been proposed or too recently adopted in order to measure their level of success.

Strategies versus actions

The analysis of the case studies showed that it is very useful to distinguish between individual actions or measures and strategies. Strategies are directed towards long–term goals, which can be achieved by different sets of measures. Specific actions may be only suitable in certain cities whereas strategies are much more transferable.

It was found that the level of strategic thinking and planning within the field of tourism in cities is not developed widely. The awareness of the need for such strategies is just arising. Therefore, strategies have been developed within the project based on the results of the case studies.

Only a limited number of well-developed practices dealing with tourist mobility and its interaction with regular (systematic) transport that can serve as prototypes for other cities, have been identified. The main reasons are that the importance of tourist mobility is grossly underestimated by local authorities and further that a number of measures have been adopted or implemented only recently, so that the success has not been determined yet.

Strategies

The following strategies have been formulated:

7. Car free cities
8. Tourist coach management
9. Long-haul accessibility improvement
10. Flexible urban transport services
11. Tourist demand management
12. Information technology applications

The relation between the actions and strategies is summarised in table 5.1. Details can be found in Deliverable 3 (The Management of Tourist Flows).

Table 5.1   Actions included in strategies

Action	Strategy					
	1	**2**	**3**	**4**	**5**	**6**
Limited access by private car	C*					
Payment parking	VI*					
Park and Ride	I	VI				
Enhancement and promotion of public transport	VI					
Integration of public transport fares and services	VI					
Tourist coach control system		VI				
Reorganisation and enhancement of road network	I					
Enhancement of air connections and infrastructures			VI			
Cycling and pedestrian tracks	I					
Strengthening links between long-haul and local transport networks			VI			
Light RAIL and new public transport systems				VI		
Intelligent transport systems	VI*	I	I			I
Tourist information systems	VI	VI	I			VI
Electronic booking and payment systems	VI	VI	I			VI
Alternative and Complementary city routes and attractions					VI	
Promotion of off-season events					VI	
Reorganisation of the urban structure	I					
Reorganisation of accommodation supply						
Site management					VI	
* = not specific tourist oriented C = Compulsory I = Important VI = Very Important						

The above mentioned strategies can be variously transferred to other cities sharing the same problems. Transferability may be recognised according to different indicators:

- urban size (e.g. metropolis, medium-sized city, etc.)
- tourist size (different level of tourists/residents ratio)
- main market segments (e.g. leisure vs. business)
- « complex » vs. « specialised » cities (seaside resorts, mountain resorts, urban tourism destinations, etc.)

Furthermore, some strategies are scalable and may be applied both in large cities and small cities.

Some important considerations, derived from the analysis of solutions adopted or proposed by each case study, should be proposed before presenting the major results.

First of all, tourism generally intensifies the mobility and traffic problems already affecting the destination: systematic and non-systematic mobility, even if characterised by different needs and behaviour, share the same transport network and infrastructures and are often characterised by the same preferences as regards the means of transport.

The second result is linked to the seasonal trend which characterises more or less all tourism segments: the strong variations of tourist flows suggest investments based on flexible systems, in order to match supply and demand needs.

5.7.6   *Site management practices*

Promotion of alternative city routes, destinations and attractions, promotion of off-season events, reorganisation of accommodation supply and site management derive from a recent awareness about tourist needs and behaviour. Site management, that is an effort aimed at modifying visitor flow distribution by means of combined actions on both resources and transport services availability, is a new approach which requires a change.

Site Management means optimal use of resources in terms of: opening periods of museums, etc; adequate public services timetables and lines; actions on the sustaining services (restaurants, bars, etc). The new approach consists, therefore, in an innovative proposal of different services in order to offer to the customer a composite but integrated product. The only important experience in this field has been developed in Jerusalem.

Transferability

Promotion of off-season events is necessary whenever flows are characterised by significant seasonal variations. Destination marketing policies must be based on a differentiated city image and related supply. More visitors can be attracted during lean periods (i.e. winter for a seaside resort) only if different market segments are penetrated. There is no unique solution but the bigger the city the greater its opportunities in terms of resources and services. Nevertheless, urban size and city resources are not sufficient to create interest about the city: it is also the ability of its managers (public administrators, private operators, etc) to promote new opportunities of entertainment that can enhance its attractiveness. Strategic importance in the attempt of develop new market segments is related to easy long-haul accessibility, i.e. efficient air connections.

Promotion of Alternative and complementary city routes and destinations is the solution to two different problems: congestion and insufficient exploitation of resources. While congestion characterises both large (Rome) and mid-small sized cities (Canterbury), insufficient exploitation of resources happens when tourist demand makes a selection between cultural and/or natural resources, giving preference to a small number of sites. Therefore, in this case no artificial attractions need to be invented but existing ones must be better exploited.

Site Management is a new approach: tourist attraction and transport services form an integrated product in order to adequately satisfy the customer and to promote a more efficient exploitation of the resources with a lower impact on the mobility structure. That means: less traffic congestion on the roads, promotion of public transport (both for visitors and for residents), reduction of queues at the museums, more satisfying experience for the tourist, revitalisation of urban areas during lean periods

ARTIST – Final Report

(for example at night) with consequent increase of security. Transferability concerns destinations characterised by flows exceeding site carrying capacity.

6 Research and Demonstration agenda: overall structure

6.1 General considerations

Transport is considered to be of vital importance to the economic and social performance of society. It enables people and firms to carry out important activities ranging from producing goods and services, participation in the labour force, education, social contacts etc. It is anticipated that in the foreseeable future the demand for personal mobility will continue to grow in European societies.

The demand itself will most likely change also by composition. It is expected that both the demand for tourism mobility and for longer cross-national trips will increase in particular. It is clear that the growing European integration will contribute in particular to these developments apart from a general rise in the level of prosperity.

To satisfy this demand huge investments in infrastructure will have to be done. At the European level investments in long distance motorways, high speed railway lines and airports are needed.

On the other hand transport has also its negative sides like emissions, CO-2, noise, unsafety, the use of land etc. In order to remedy these negative external effects transport policies need to be developed and implemented at many levels of government. Examples at the European level are pricing, demand management, traffic management, intermodal integration etc.

One overall finding of this project is that tourism mobility constitutes a significant part of total personal travel both at the national and the EU level. It also became clear that the characteristics of tourism mobility are quite different from those of the more regular classes of travel which makes dedicated transport policies necessary.

As was described already in section 2.3 the integration of tourism mobility in general transport policy development in a fully fledged way is seriously hampered by a various gaps in information and knowledge and a lack of tested policy instruments.

The R&D agenda will be developed from a transport perspective and not from a tourism point of view; its main purpose is to assist transport policy makers in taking into account the specific needs and problems of tourism travel.

6.2 Objectives

As was already expected at the outset of the ARTIST project the previous work packages clearly demonstrated the importance of tourism mobility to general transport policy development both at the EU-level and the national level. It was shown that tourism travel is a specific category of mobility requiring specific and dedicated policy measures and transport services. It was concluded that a proper and well-founded integration of tourism travel in transport policy making is needed.

However, it became very clear that in order to realise the inclusion of tourism travel in transport policy making serious gaps need to be filled with respect to almost all aspects of sound policy making. These range from empirical information, forecasting and scenario-making tools, policy measures, planning and decision-making processes and so on. In other words, there is a strong need to improve the state-of-the-art and the-state-of-the practice to at least the level of other travel classes.

To this end the ARTIST project will produce an agenda for Research and Demonstration; this agenda will describe the most important and urgent needs for new insights and practices stemming from the work done in the ARTIST project. This agenda comprises the most important topics in a structured manner.

Primarily, this agenda serves the purposes of the EU but it will be clear that it is also relevant to the national and regional governments and other parties. On the one hand these authorities share common problems among themselves and with the EU. Furthermore, it is very beneficial to co-ordinate national and EU R&D activities in the field of tourism travel givens also its strong cross-national character.

6.3 Thematic structure

It is useful to distinguish between R&D needs related to:
- the observation, description and explanation of tourism mobility
- the development of tools
- design of policies and measures
- monitoring and evaluation of policies
- the decision making process

The first category of R&D needs relates to the necessity to get to know the phenomenon of tourism mobility better. In fact, better insight into the characteristics of tourism mobility is a basic precondition for a sound and rational approach of solving its related problems. The present low level of knowledge is an important obstacle and should be improved drastically. These needs relate to almost every stage of the scientific cycle: observation and measurements of the tourist travel flows and traveller choice behaviour; detailed description of tourist travel patterns and the formation and validation of adequate explanatory theories about tourist travel behaviour. The underlying goal of these actions is to construct a fundamental basis for the development of tools, policies etc.
The goal of the proposed research themes is to raise the theoretical and empirical quality to the same level as that of other classes of travel like work travel etc.

The second class of needs deals with the availability of tools that can support policy development. It is necessary to be able to make adequate forecasts of tourism travel patterns that take into account context and policy scenarios. At present those tools are largely lacking. Of course, the results of the research on data and theory described above constitute the basis for model and tool development.

The third type of R&D needs refer to the development of tailored policies that are able to solve problems related to tourism travel. On the other hand it refers to specific transport related services for tourists. These policies and measures may relate to different domains, like general national or EU policies or regional and urban flow management etc..

The fourth category relates to studies that monitor the effectiveness of specific policies and measures that have been implemented. It is not just measuring tourist travel patterns but to attribute changes in these patterns to particular measures. It is strongly related to the ex-post evaluation of specific measures. The outcomes of these monitoring studies add to the development of policies and the ex ante evaluations.

The fifth class aims at the improvement of the transport planning and decision process itself in view of the inclusion of tourism travel. R&D may have to do with the involvement of the relevant stake holders in the decision making arena. In particular, it is a challenge to stimulate and realise the active participation of the stake-holders of the tourism business in these processes. In the classical process of transport planning these actors are hardly or not at all involved. In fact this category deals with the planning process architecture.

In addition to the distinction with respect to the subject of the research needs it is important to differentiate between the various levels of decision making:
- the EU and national level
- the urban level.

The ARTIST project concentrated on both these levels; the urban level relates mainly to tourist cities and some sea and alpine resorts. It is clear that both the issues and the policies that can be adopted are different between both levels.

Taking both dimensions together the classification shown in table 6.1 results. In principle R&D needs in all cells are relevant.

Table 6.1. Classification scheme of R&D themes.

Level of decision making / Type of activity	EU and national level	*'Urban'*
Theory development	x	
Data acquisition	x	x
Analysis of travel patterns	x	x
Analysis of impacts	x	x
Tools (models and other)	x	x
Policies, strategies, measures and services	x	x
Monitoring and evaluation	x	x
Decision making process	x	x

6.4   Structured overview of research themes

In essence, the R&D agenda consists of a number of well-chosen research themes. It has been decided to formulate a limited number of themes that deal with substantial and rather broad topics rather than to end up with a long list of detailed and small project proposals. The research themes have been conceived so that they fill the major gaps in knowledge and experience identified in earlier stages of the project. Of course a clear relationship should exist with the responsibilities of the EU in the field of transport.

Table 6.2 presents the list.

Table 6.2.   List of selected research themes

#	Title
1	Development of a set of adequate definitions
2	Development of a practice-oriented theoretical base of tourist travel
3	Behavioural study on tourist travel
4	Design of a survey on national and cross-national tourist trips
5	Design of survey method on urban tourism mobility patterns
6	In-depth analysis of national and cross-national tourism mobility patterns
7	Development of new forecasting models for tourism mobility at national and EU level
8	Traffic safety policies and tourism mobility
9	Development of international, integrated tourist-oriented transport services and systems.
10	Design and test of information systems for urban visitors
11	Development of advanced, flexible, demand responsive urban transport systems and services for visitors
12	Development of land-use/transportation strategies for managing urban visitor flows
13	Comprehensive visitor flow management strategies for big events
14	Development of ITS-based guidance systems for urban tourists
15	Impact of transport on tourism patterns
16	Development of a monitoring methodology for urban policies and measures related to tourism mobility
17	Development of an action to incorporate tourism mobility in national and EU decision making
18	Incorporation of tourism mobility in feasibility studies of big infrastructure projects
19	Development of an awareness campaign for local authorities of tourist destinations
20	Architecture of decision making processes at urban level
21	Guidelines for transport planning to include tourism mobility

In table 6.3 the research themes are allocated to the cells of table 6.1. This allocation is based on the main subject of the theme. From the detailed description it will become clear that many themes relate to multiple cells. For instance when the development, test and evaluation of a specific service is proposed it is clear that this theme not only relates to 'policies, strategies, services and measures' but

also to 'impacts', 'monitoring and evaluation'. So in fact the collection of research themes is more rich than would seem from the table.

Table 6.3.   Classification of the research themes

Type of activity \ Level of decision making	EU and national level	*'Urban'*
Theory development	1, 2, 3	
Data acquisition	4	5
Analysis of travel patterns	6	
Analysis of impacts		
Tools (models and other)	7	
Policies, strategies, measures and services	8,9	10,11,12,13,14
Monitoring and evaluation	15	16
Decision making process	17,18	19,20,21

All research themes deal with urgent needs but it is necessary to suggest some clustering and phasing on the basis of the logical interrelationships between the themes.

It is recommended to start with research themes on theory development and data acquisition; the research themes are closely related: theory, definitions, surveys and behavioural analyses have to be done in combination since they reinforce each other or even cannot not be carried out without each other. It is necessary to carry out this research right from the beginning since without definitions and theoretical concepts surveys cannot be designed properly and without surveys empirical analysis is seriously hampered which provides a basis for policy development. It should be realised that this cluster of research cannot be carried out as linear sequence; it has to be seen as cyclical activity in the sense that theory will be improved after empirical data will become available which leads to improved survey designs and new data on so on.

Then the empirical analysis of tourism travel patterns can be done.

The third stage contains three parallel streams: policy and service development, decision making process architecture and tool building.

After new policies and services have been implemented monitoring and ex-post evaluation can take place.

Again, the research themes proposed should not be seen as activities that have to or even can be carried out in strict linear sequence. Together it constitutes a major effort of interrelated activities that in an iterative way will build up a substantial body of practical and theoretical knowledge and information; it will enable tourism travel to play an important or at least equal role in policy making comparable to that of regular travel.

7   Formatted description of the research themes

7.1   Introduction

In this chapter each research theme will be described in one page according to a fixed format. The following aspects are treated:

1. Title
2. Theme description: a brad sketch of the theme and its background
3. Problems: which problems can be solving by carrying out the research
4. Objectives: more specific goals of the research
5. Research methods: the approach envisaged is described
6. Possible role for the EC: what is the significance of this research to the EU e what role can it play
7. Expected results: specific outcomes to be produced
8. Related projects: other relevant R&D projects of the EU, member states or other organisations

ARTIST – Final Report

7.2   Descriptions

Theme 1   *Development of a set of adequate definitions*
Theme description Tourism and transport are two different worlds. Although strongly related, quite different viewpoints are chosen within each of the areas. Furthermore, within the field of transport tourist travel is treated in an incomplete and unprecise manner. A necessary prerequisite for the creation of an operational and practice-oriented body of knowledge, is an adequate set of definitions.
Problems In the transport field the body of knowledge (theories, surveys, data, models etc.) is centered on regular travel. Travellers are assumed to make more or less frequent trips in a familiar environment and to build up information on choice alternatives. Tourist travel is different; a big part of this travel is infrequent, into an unfamiliar environment etc. Furthermore, tourism is a class of travel composed of a big variety of sub-purposes like business, holidays, leisure, visit friends etc. Since no set of adequate, practical and operational definitions is available, it is extremely difficult to design surveys, to analyse data and to give explanations of tourist travel.
Objectives The overall objective is to develop a set of consistent and widely accepted transport-practice oriented definitions with respect to tourist travel. These definitions should take into account to a maximum the particular properties of tourist travel like: sub-purposes, trip linking, local activities at destinations, stays, group travel, role of agents, mode availability, modes used, frequency, etc. They should also allow for a link to explanatory factors like, socio-economic characteristics, position in firm, free time, familiarity with destination, costs, etc. The definitions can be used to develop new survey methods and to improve existing national/regional travel surveys.
Research methods It is suggested: • to study existing definitions both in the tourism and the transport world • to make use of current work being done in the field of survey designs (MEST, DG 23, etc.) • to develop definitions and classifications • to discuss these with important stakeholders in order to stimulate acceptance and use • to test definitions in small-scale surveys and analyses Co-operation with statistical offices of the EU and member states would be necessary.
Possible role for the EC In order to be able to develop transport policies at the EU level an understanding of tourist travel being a major component of cross-national travel is crucial. The same is true for decision making with respect to large infrastructure projects to be co-funded by the EU. For this information, explanation, forecasting and valuation is necessary; unless adequate definitions, classifications, segmentations are available it is hardly possible to achieve this. The EU can adopt these definitions for EU surveys and for guidelines for national surveys.

Expected results
• interrelated, consistent and operational definitions of variables describing tourist mobility;   • practical classifications of tourist mobility by purpose, destination, length of stay, etc etc   • definitions of personal explanatory variables
Related projects
It is clear that a close connection exists with the other research themes on theory building, data collection and explanation.   It is essential to establish a link with or use the results from other EU projects: MEST+ in FP.

Theme 2	*Development of practice-oriented theoretical base of tourist travel*

Theme description

The present theoretical base of travel is strongly related to daily, regular travel. Theoretical concepts like time budgets, activity programs, activity space, utility maximising individuals are developed for that type of travel. Moreover the home and the work place are two important bases of the time-space patterns.

However, time and space patterns of tourism are much more variable, less fixed by daily regularities. As a consequence traditional concepts like the one mentioned apply less to tourism travel.

Problems

There is a clear need for a substantial body of theoretical knowledge with the purpose of explaining tourism travel behaviour and patterns and on the basis of that insight building sound models which enable conditional forecasts to be made. Without theory observations remain isolated facts that cannot be explained and even more seriously no generalisations can be made that enable reliable forecasts. It is on the basis of (implied) theory that observations are made. There are no such things as practical as a sound and validated theory.

The problem is therefore to develop a specific set of theoretical concepts, hypotheses which apply to tourist travel.

Objectives

The objective is to build and validate a theory which explains tourism travel. The theoretical base should have a practical and operational orientation rather than a purely scientific character. This means that as an ultimate goal this base should contribute to the development of empirical knowledge and tools that assist policy makers in their tasks.

It is recommended to start theory development at the individual, disaggregate, behavioural level; this means that it concentrates on the explanation of tourist travel decisions of individuals or households at the micro-level. It should at least describe and explain choices to make a trip, destinations, mode use, time-of-travel, etc. In a later stage more aggregate patterns can be explained using the insights at the individual level.

Furthermore, it is recommended to start with the demand side and only later on expand theory to supply reactions and complicated market equilibria resulting from the interaction of demand and supply on various markets.

Research methods

This research follows general rules of science and has the following elements:

- select and define the domain: subcategories of tourism travel, types of travel choices etc.
- investigate existing theoretical concepts in transport and tourism with respect to their usability
- investigate sociological and economic theories
- develop sets of interrelated hypotheses
- design experimental or non-experimental designs to test these hypothesis

ARTIST – Final Report

Possible role for the EC
The relevance of this research to the EU is indirect because theory enables good and efficient surveys to be set up and through better insights more effective policies can be developed.
Expected results
The main result is a validated body of theory which enables the (further) development of surveys, tools and policies.
Related projects

Theme 3   *Behavioural study on tourist travel*
Theme description
In order to be able to develop and test hypothesis on the travel behavior of tourists it is necessary to carry out several studies of this behaviour at the micro-level.
Problems
At the moment hardly any studies have been done regarding the travel behaviour of tourists which makes it difficult to develop and test theories and hypotheses. An empirical basis should therefore be provided by defining and carrying out a number of case studies.
Objectives
The objective is to carry out a number of interrelated studies on travel behaviour of tourist in order to provide an empirical basis for testing and improving behavioural hypotheses.
Research methods
This research is closely connected to research theme 3 on theory development. From that research the most important subjects in terms of behavioural aspects should be derived. Potential subjects are: • combined destination and mode choice behaviour of households for holiday trips   • local travel behaviour at holiday destinations including access and egress modes   • same-day visitors trip making decisions   • role of time and money budgets   • combination of business and leisure trips   The studies are behavioural at the micro-level implying that at the level of the individual choices made, choice alternatives, explanatory factors related to the individual, the travel choice alternatives and the tourism alternatives should all be taken into account. Not only objective variables should be included but also more qualitative ones like perceptions, attitudes, constraints etc.   A crucial element in the approach is the empirical or quasi-empirical nature. This means that surveys on real behaviour are carried out or that so-called stated-preference experiments are done. The ultimate goal is to describe the behaviour itself in detail and to explain in a quantitative manner this behaviour using personal/household variables, choice alternatives characteristics and contextual variables.
Possible role for the EC
The main benefit of this research is an in-depth behavioural insight allowing theories to be tested and on the basis of that empirical description of statistical patterns can be provide with explanations.
Expected results
The direct results are empirical insights into tourism travel choice behaviour and its explanation. Indirectly this contributes to the development and testing of theories tools and policies.
Related projects

ARTIST – Final Report

Theme 4	*Design of a survey on national and cross-national tourist trips*

Theme description

At present the lack of consistent and relevant data on tourism travel is huge. In particular, data on a national and cross-national tourism trips is very limited. Both a better understanding and practical policymaking is seriously hampered by this situation. This research proposes actions to remedy this situation.

Problems

Tourism is one of the fastest growing industries, which is highly sensitive to level of service in general and to that of transport in particularly. It leads to large transport flows requiring investments and dedicated policies. Despite this facts sufficient, consistent and relevant data on tourist travel behaviour is rare to be found in contemporary national and cross national travel survey. Most of the travel surveys deals only with daily, regular travel, which is frequent and routine (commuting, etc.) Tourism travel, unlike regular travel, is characterised by low frequency, unfamiliar travel environment, longer distances, group travel, organised character and sensitivity to fashion and political climate.

Tourism surveys, on the other hand, generally do not refer to transportation aspects in great detail (e.g.: mode of travel, sequence of destinations, travel distance etc.). Moreover, particular types of visitors are not surveyed in most cases, e.g. same day visitors.

One major problem which urgently needs to be solved is lack of national and EU-level data on tourist travel which enables a better understanding and explanation of this type of mobility on the one hand and makes a proper inclusion of tourist travel in general transport policy making possible.

Objectives

The objective of this research is develop, test and implement new surveys and/or to improve existing surveys at the national and the EU-level with the purpose of having available on a systematic and periodic basis relevant and consistent data on tourism travel. The level of detail and quality should be at least equal to that of other classes of travel.

Research methods

In general this research should be closely connected and wherever possible and efficient integrated with current and planned data collection activities at the national and EU level. More specifically, it is suggested to build upon the outcomes of the MEST project carried out earlier and to establish a close relationship with the successor project DATELINE. This project aims at developing a travel survey on European long distance trips.

Furthermore, this research has to be based on the results of research theme no 1 regarding definitions.

A final general suggestion is to carry out this research in close co-operation with national and EU statistical offices as well as with (inter)national tourist organisations involved in data collection.

More specifically the approach would have the following elements:

- to specify in detail the data needs
- to review current national and EU- travel surveys on their information content and to recommend improvements
- to review available data sources in the tourism sector on relevant data and recommendations for improvement
- to design an overall approach for gathering of tourism travel data.
  Most likely this will imply:
  - the improvement of current national travel surveys
  - the improvement of current tourism surveys
  - the development of additional surveys which may be either home-based or choice based(at airports, borders, on trains, in hotels etc..) or a combination of both
  - a data fusion method to integrate data from various sources
  - the development of a data reporting system
- negotiation with relevant partners (agencies, organisations) about a committed approach
- to pilot and test various data collection and data fusion approaches
- to make a comprehensive proposal for implementation

Possible role for EC

The importance of EC concerning the survey design relates to:

- Identification of common problem-oriented data needs at the national and cross- national levels, in different geographic areas within a country and in different tourism and transport segments.
- Standardisation of data collection procedures for all the EU countries thereby reducing costs and increasing the possibilities of integration and exchange of data
- Having available a cross national survey at EU level

More generally of course the importance to the EU is related to the enhancement of the possibilities to develop tourism-oriented transport policies. Only when adequate data are available policy tools and design support systems can be developed.

The role played by the EC should be focused on:

- Stimulating this research
- Encouragement of cross national co-operation with respect of survey methodology and practice
- integration of data gathering actions with respect to tourism travel with other relevant surveys
- Publication of systematic data reports and analysis on tourist travel
- Dissemination of the results

Expected results

- A comprehensive methodology on data collection
- A comprehensive implementation plan
- Once the proposed actions have been implemented a database on tourism travel which is systematic, periodic, consistent, reliable and rich in content
- Integration of tourism data with other travel and tourism statistics.
- A sound basis for further development of models and other tools
- An empirical basis for dedicated policy development

ARTIST – Final Report

Related projects
The most important project to which this research is related are the EU projects of MEST and DATELINE. Through these a connection is to be established with national projects and activities on data collection. As mentioned in theme 1 on definitions the activities of DG 23 on definitions are highly relevant of course.

Theme 5	*Design of survey method on urban tourism mobility patterns*
Theme description	
An integrated approach to visitor and mobility management requires the collection of information regarding the characteristics of the visitor, the organisation of the visit and the means of transport used to reach and move within the destination. The analysis and comparison of visitors' and residents' spatial behaviour provide local tourism and transport authorities with a set of tools to optimise tourism and traffic flows and to plan suitable management strategies.	
Problems	
Even if tourism and transport are strongly related sectors, there is no homogeneity in data collection methods. Urban transport statistics, when available, provide total accessibility and traffic data (visitors and residents) for the city as a whole or for specific congested urban areas. Tourism statistics are basically focused on tourists and do not take into account same-day visitors. Furthermore, they only provide information on volume of tourism flows in urban accommodation establishments, but not on their characteristics and travel patterns.	
Objectives	
Design an integrated system of surveys aimed at: - analysing and monitoring urban tourism and mobility patterns in the short-medium term; - measuring and checking excursionism vs. residential tourism; - providing information on visitor accessibility and traffic flows in real time	
Research methods	
It is suggested: - to check existing statistical information both in the tourism and transport field; - to make use of current work being done in the field of survey design (EU, other studies available) - to develop carefully the whole system of surveys (survey plan, questionnaire design, survey test, checking of results, etc.) - to involve local tourism and transport planners and operators in the definition and organisation of surveys (e.g. identification of survey venues, etc.)	
Possible role for the EC	
The role of the EC is essential in: - recommending the definition of a common research method - urging the spread of such a method in all European cities characterised by large or unusual tourist flows - promoting the setting up of a common database and then the development of a city network - providing information on other projects in the same field	
Expected results	
- definition of a common research method for collecting tourism transport data in urban centres - creation of a comprehensive database - development of a city network sharing comparable information on urban tourism travel patterns	

ARTIST – Final Report

Related projects
A close connection exists with other European projects launched in the field of transport and visitor flow management (e.g. Eurostat's Reference Manual on Design and implementation of surveys of inbound tourism to an area, MATISSE20002000, CAPITALS, etc.). It is essential to establish a link with, or to use the results of, these projects. It should be considered to involve the POLIS initiative in these activities, given their role in exchanging data and experiences between European cities

ARTIST – Final Report

Theme 6	*In-depth analysis of national and cross-national tourism mobility patterns*

Theme description

The empirical description of national and international tourist mobility patterns in Europe has been seriously hampered by a lack of data. As soon as sufficient data are available a systematic analysis of these patterns should be carried out.

Problems

Although the ARTIST project has done a serious attempt to describe and analyse tourism travel patterns within and between countries a complete and reliable analysis could not be delivered because data were not available and not all countries participated in the project.

Objectives

This research aims first at describing both national and international (within the EU) patterns of tourism travel. Important aspects are:

- volumes of trips by origin, destination in terms of countries and regions
- volumes by type of tourism, holiday, same day visitors, city trips, seaside, etc.
- characteristics of the travellers, income, household etc.
- modal and temporal distribution
- trip organisation
- etc.

Although highly needed, for the time being developments over time and their explanation cannot be analysed since it will take some 5 to 10 years before time-series data will become available.

This analysis can be reported at let us say 5 years interval in a kind of 'state-of-tourism travel report'

Research methods

This research is mainly a multivariate statistical analysis based on the following steps:

- identify main topics to be analysed.
- develop statistical analysis scheme, including definitions of categories and levels of aggregation
- perform the descriptive analysis
- perform explanatory analysis on cross section data and links with available time-series data.
- publish results

Possible role for the EC

The relevance to the EU is that for the first time a reliable and detailed empirical insight into aggregate tourism travel patterns is available. It can be used to identify policy issues and help to develop policies.

The EU can at regular intervals publish the results to a wide audience in the form of a status report.

Expected results

The result is a comprehensive and detailed description of national and cross-national patterns of tourism travel. After some time this cross-sectional decryption will also include important time-series giving developments. Major characteristics and developments will be explained at an aggregate level.

Related projects

ARTIST – Final Report

Theme 7	*Development of new forecasting models for tourism mobility at national and EU level*
Theme description	

Theme description

The incorporation of tourism travel in policy development at the EU and the national level requires the ability to make adequate predictions of tourism mobility. These forecasts are necessary to anticipate transport problems and to develop or evaluate transport policies.

It was found, however, that hardly any suitable instruments are available for making reliable predictions.

Problems

The main problem is that in view of the lack of suitable models for making predictions of tourism mobility, the development and evaluation of transport policies at the national and EU level is seriously hampered. Currently available tools in by far the most cases do not take into account the specific characteristics and background of tourism travel. Consequently, tourism travel is often treated as a 'remaining category' or similar as the other travel segments.

Objectives

The objective is to develop a set of transport models which enable policy analysts to make reliable and meaningful predictions of tourism mobility at national and EU-levels of decision making. These tools should reflect the specific characteristics and explanatory factors of this travel segment. Examples are time patterns, destination attraction factors, particular mode choice factors, role of tour operator, group travel, etc.

The tools to be developed should be explicitly linked to the needs of decision making of the various agents.

Research methods

In the transport a sound methodology has been developed for constructing models, similar to that in other fields like engineering and economics. It is recommended to adopt this practice as far as possible. Of course, the nature of the tourism travel models will be different.

Important steps are:

- identification and classification of the needs for predictions
- investigation and assessment of available national and international transport models
- define the tasks and use of the models needed
- specify the structure of the models based on theory, available models, data availability
- design and build the models
- validate and test models

It is essential to learn as much as possible from available models and tools in the field of tourism which are being used for other purposes than transport policy development.

ARTIST – Final Report

Possible role for the EC

Reasons for involvement of the EC is twofold. First, at the EU level transport policy development and infrastructure planning is an important task. It is anticipated that the current common transport policy will be updated periodically taking into account future issues. The same holds for environmental policies. Furthermore, planning or co-financing large infrastructure of a European significance will need adequate travel predictions to assess the feasibility.

Second, many countries face similar and interrelated transport problems connected to tourism and it is profitable to achieve some economy of scale in the very expensive development of these tools. It is clear that the close relationships between definitions, data and models makes a common model construction effort profitable.

Expected results

The result of this research will be a set of well-designed, operational, validated and well-documented models that produce accurate and reliable predictions of tourism mobility to be used in a policy development context. It is to be expected that for different purposes different sets of models will be developed.

Related projects

A link should be established with other EU-projects aiming at transport model development, data collection etc. Of course, an orientation on policy making and infrastructure planning stimulates a practice-oriented approach.

ARTIST – Final Report

Theme 8	*Traffic safety policies and tourism mobility*

Theme description

Traffic safety is a major political issue both at the national and the international level. With about 50,000 people killed on the roads annually in Europe it is a major concern in road transport policies. Given the fact that tourism mobility constitutes a large share of total car mobility it is necessary to consider specific policies. Of course, general safety measures also improve the accident rates in tourism travel. However, some classes of tourism travel have special characteristics that require dedicated measures.

Problems

In Europe car mobility of tourists causes particular safety problems or requires specific measures. This research effort aims at those classes of travellers having specific driving behaviour or encountering driving conditions. Car drivers with leisure travel purpose whose safety aspects are not different from regular drivers are not dealt with.

Most likely, long distance travellers for holiday purposes are the relevant class. Car drivers drive long periods, in adverse weather and day light conditions, with fully loaded vehicles, sometimes with caravans and in unknown territory. In addition, touring cars are driving under severe time pressure because of very strict schedules.

As a consequence these increased safety risks result in high numbers of accidents with many casualties.

Objectives

The first objective is to determine car and bus accident levels caused by tourism travel. This analysis has to distinguish various types of accidents according to cause, road and weather conditions, car and driver characteristics. Particular attention should be given to typical characteristics of drivers and travellers on holiday.

The second objective is to develop on the basis of this analysis policy and research recommendations with the aim of increasing traffic safety in tourism travel. These measures may relate to regulations, driver education and training, travel and traffic information, traffic management and in-vehicle safety equipment.

Research methods

This research is partly statistical analysis of traffic safety data. It is anticipated that standard safety data will not allow the establishment of a relationship between accidents on the one hand and driver and trip characteristics on the other. This means that expert opinions should be sought and particular surveys on accidents that occur in certain period of time have to be carried out.

Of particular promising measures and services prototype studies and pilots can be done.

Possible role for the EC

Safety is a crucial element of the common transport policy; furthermore research and development with respect to measures and technologies may benefit from the economy of scale of a common approach.

Expected results
The main result is a set of policies and services that increase road traffic safety of travellers on holiday.
Related projects
Other EU safety related projects.

Theme 9	*Development of international, integrated tourist-oriented transport services and systems*

Theme description

This research aims at improving long distance sustainable travel modes for tourists. In particular international public transport (especially train) should be upgraded towards a flexible and competitive system, that meets the needs of international travellers.

Problems

Currently, international public transport does hardly offer adequate services to international tourists because:

- It lacks of adequate supply in terms of frequency, direct or seamless connections, travel time, comfort and price that meets the demand of tourism. In particular the lack of co-operation between national railway companies is a major cause of sub-standard long-distance services.
- One of the big problems is the international transport of baggage in public transport – this is a main influence towards the choice of car for international trips. The train mode is in this respect far behind the air mode.
- Public transport regrettably only offers solutions for station-to-station parts of the whole "door-to-door" trip. Access from home and egress to the tourist destinations are hardly integrated and cause big problems for tourists. This problem relates to a range of functions: physical supply, co-ordination in time, information gathering, reservation, payment, luggage handling etc.
- The public transport mode normally gives only a partial solution for the travel needs within the destinations.

If rail services do not substantiality improve a high risk exists that the rail mode will completely disappear from the tourist market within the foreseeable future.

Objectives

To develop strategies which will enable to :

- Increase the competitiveness of public transport in competition with car and plane. This would mean cross-national integration of services on special connections. The Thalys-approach could serve as a model.
- Increase sustainability of the transport system by improving the position of p. t. in the transport market.
- Improve inter-modality in the access and egress of e.g. tourism regions/cities.

Research methods

- Carry out in-depth market surveys on travel choice factors and constraints of tourists. Different tourism markets and modal supply situations should be distinguished. Select those segments that have large volumes and a reasonable potential of the rail mode.
- Analyse the problem of different (national) players in international public transport (especially rail). Compare these with the strategies and services of the car and air modes.
- Explore the possible services that link the long-haul rail mode with the local access modes and the local transport at the destination. Look at integration with taxi, van-pools, limo-services, car rental companies, parking at the home-side. Integration refers to the transport services themselves but also to information gathering, reservation, payment, luggage handling etc.

- Analyse the awareness of the problem and the willingness for a change including all players in this field (rail–companies, tour-operators, private rail operators, taxi-operators, tourist industry, car rental companies, users)
- Develop strategies to improve "user-friendliness" and at the same time "sustainability" and formulate candidate pilots

Possible role for the EC

The significance of this research to the EU stems from the following:

- The enhancement of sustainable transport for tourists fits perfectly in the Common Transport Policy
- It deals with both the liberalisation of the railway-passenger-market and the cross-national co-operation or integration
- This research is relevant to regional economic developments policies e.g. for the accessibility of the Alpine tourism region, the north – Italian sun and beach tourism region etc.
- The results of these Demonstration projects to be applied in other fitted areas.
- Increasing the role of the standardisation of railway services.

Expected results

- Key measures for the implementation of a flexible, user-friendly international public transport that offer door to door (especially train)
- A strategy to improve the position of public transport. (train) in the international travel – market (tourism – business and leisure)
- Specific recommendations to increase inter-modality and sustainability
- A method to improve international accessibility of tourism and business regions

Related projects

CONPASS – improvement of cross-border public transport., concentrating on local and regional transport.

"Sanfte Mobilität – autofreier Tourismus" in the Austrian Alpine tourism region.

Theme 10	*Design and test of information systems for urban visitors*

Theme description

A predominant characteristic of most visitors is their unfamiliarity with the travel and tourist options at the destinations. This makes it difficult to make the right decisions with respect to travel, activities and services. Modern ICT technology offers very promising opportunities to provide visitors with tailored, accurate and on-line information.

Problems

The problem is a lack adequate travel and tourist information for visitors. Therefore it is necessary to develop and test various information systems to be used by visitors. These systems should build upon clearly determined needs for information during various stages of their trips and visits.

Another problem to be tackled is that of a (potential) lack of standardisation resulting in duplication of work and therefore high costs.

It should be borne in mind that non-technical issues are very important to a successful introduction; this research should come up with ideas on how to stimulate a successful co-operation between various actors.

Objectives

The aim of future research is to develop and test promising information systems for urban visitors. These systems should satisfy the needs of visitors both with respect to the contents and to the way the information can be used.

The information and functions should cover the tourist domain (attractions, accommodations etc. as well as travel aspects. Furthermore, it is essential to offer relevant information on each stage of the visit: in the planning stage, en route and at the destination itself. It is clear that on-line information on transport services and tourist facilities are an essential component; at the same time functions like informing, reservation, booking and payment are to be considered.

Use should be made of modern technologies wherever suitable and affordable.

More a requirement than an objective is the necessary co-operation of the various actors and stakeholders in the city. Especially the involvement and co-operation of parties from the transport and the tourism industry is important.

Research methods

The approach suggested is:

- to determine the needs of visitors for information about travel and tourist activities
- the review previous and on-going developments in this area; in particular the results of the MATISSE2000-2000 project should be studied and used
- to select a number of representative case-cities for which the system will be developed
- to specify and develop a prototype information system in close co-operation with the local actors from the transport and tourist field.

- to demonstrate the prototype system(s). It is essential that most modern media (PC, internet, in-car, GSM) are used where relevant
- to evaluate the system as to its use and resources needed for construction and maintenance
- to disseminate the results to other EU-cities

Possible role for the EC

Given the fact that many cities face similar problems the system can be used in many places. Furthermore a link with other information systems like traffic information and traffic management systems is anticipated. It is advised to realise a certain level of standardisation within Europe. Especially, since visitors often visit many cities and may benefit from standardisation.

On top of the standardisation of technical specifications the EC can help to find ways to make local actors work together. Launching projects where the requirements are that certain actors have to be involved, is one of the possibilities.

Expected results

A prototype multi-lingual visitor information system for cities that is applicable to many European tourist destination. Such a system serves the visitor in making his travel and leisure activities choices and at the system may help the available transport and tourist infrastructure to used in an efficient way.

All required information and functions are integrated in one system, which can be used at home, during the trip (in the car and in public transport) and at the destination.

Related projects

The EC is already involved in projects dealing with standardisation, for example DATEX and RDS-TMC. An important project is MATISSE2000-2000 which is dealing with the same problem and solutions and offers a broad overview of related projects and initiatives.

Theme 11	*Development of advanced, flexible, demand responsive urban transport systems and services for visitors*

Theme description

Tourists incur large transport flows in many tourist cities. Very often the transport demand of tourists is such that it cannot be met by regular transport systems available for regular, daily travel. Demand is particular with respect to the geographical pattern, time-of-travel, group size etc.

On the other hand the tourist destinations do not allow classical modes of travel to be introduced or expanded because of the preservation of the historic and cultural townscape or the need for quit an clean environments.

This research deals with particular transport services and systems that are able to meet tourists' demand within the constraints given.

Problems

In urban areas with large numbers of visitors not all types of transport demand of visitors cannot be met by classical transport systems and services like regular public transport(train, bus, tram metro), taxi, car in an adequate or efficient manner.

Examples of such demand segments are local access and egress from large terminals like airports, access to large venues like sports stadiums, exhibition and congress centres, local transport within fully pedestrianized inner cities or other historical parts, local transport in resorts, connections to large scale peripheral parking lots, local transport to attractions in the surroundings of the tourist destination, etc.

In general there is a need for (a) flexible, on-demand services, for (b) high volume systems to large venues, for (c) quiet and clean transport means. Examples are train taxis, hotel buses, people movers, automated train links, water buses and bikes, electrical vehicles, shuttle buses etc.

In order to assist urban transport planning for tourism travel it is necessary to have an updated assessment of potential systems and their application possibilities in terms of performance, costs and links to other forms of transport.

Objectives

The aim of this research is :
- give an overview of existing and planned transport systems and services for urban visitors
- to describe these options in detail
- to assess the performance and costs in order to indicate their applicability
- to produce a 'handbook' giving a practical overview to be used by planners

The dominant perspective is the use for local transport needs of visitors.

ARTIST – Final Report

Research methods

The following approach is recommended:

- make an inventory of suitable services and systems in European cities and elsewhere
- classify these systems and services according to technical, organisational and application aspects
- select a number of cases for each important class of systems and services
- describe these in larger detail: technicalities, operation, organisation, financing, use, cost and benefits, fares, integration with the main transport system, etc.
- give an assessment indicating application domain, lessons learned etc.
- produce a handbook

Possible role for the EC

Serving the local transport needs of urban visitors is a common problem of a huge number of European cities. Providing them with practice-oriented at a EU level is very helpful and benefits from a large economy of scale.

Furthermore, it should be realised that the availability of suitable local transport services is an important mode choice determinant for the long-haul part (air, car, train) so it also contributes to the Common Transport Policy.

Thirdly, innovations in transport technology need market niches for piloting and testing: the tourism market offers very often such opportunities.

Expected results

The main result is a systematic overview of transport systems and services that are able to meet the local transport needs of urban visitors and a practical handbook for local transport planners that assist them in considering innovative options.

Related projects

There is a relationship with the EU-projects FANTASIE and Utopia dealing with transport innovations.

Theme 12	*Development of land-use / transportation strategies for managing urban visitor flows*

Theme description

Tourism flows (size and directions) in tourist destinations are affected by the location of facilities and sites. One of the means for visitor flow management is to identify promising opportunities for land use strategies, such that supply will meet the demand and tourism flows become more manageable in time and space.

Problems

Many of tourist destinations suffer from inadequate matching between demand and supply in the time space as in the geographical space. One of the reasons for that is an unbalanced concentration of flows which is affected by a non-optimal location of tourist activities. This of course in particular where the location choice of the attraction can be done in view of these problems (e.g. sports stadium, congress centers etc.) and less in situations where the attractions are given due to historical and geographical reasons.

The consequence of this suboptimal mismatch are corridors with high traffic and pedestrian congestion and difficult access to sites. This not only affects the visitors but also the local population movements to their routine activities. Such problems are typical to both urban and regional tourism; in the past they have hardly been treated since there is a lack of awareness and knowledge on potential land-use strategies for tourism.

Objectives

The overall objective is to identify promising land-use strategies as an additional tool for visitor flow management. It will emphasize location choices of planned sites (leisure parks, exhibition centers, museums, etc.) with respect to different tourist characteristics which may have different impacts on the land-use (see next section).

Research methods

- Analysing the usage of infrastructure in space and time by visitors in relationship to various visitor characteristics and patterns of behaviour. The following aspects will be considered: type of tourist (internal, incoming); purpose of travel; mode of organisation (FIT, organised groups). This will be done in a number of well-selected case-cities.
- Examining different approaches of land-use planning and discussing it with the different stakeholders in order to understand their interests and thus to increase level of acceptance.
- Review of good practices from EU countries.
- Developing measures for examining effectiveness of sites and services locations.
- Developing land-use strategies due to different urban/regional structure and to different tourist characteristics.

Possible role for the EC

The outcome will help to develop transport and land-use policies within the EU, mostly at the regional and urban level. It will also help the decision making on infrastructure projects financed by the EU that will connect to major tourist attractions. Measures will help a standardised evaluation of such projects (current and future).

ARTIST – Final Report

Expected results

- Measures for evaluating effectiveness of tourist activities location.
- Strategies for efficient land-use planning as a mean for visitor flow management.
- A basis for future models of development on transport and land-use planning in tourist destinations.

Related projects

There is a connection with other themes which deal with behavioural studies and flow management (no. 5,12,21 and 22), and to other studies on land-use (DG 23).

Theme 13	*Comprehensive visitor flow management strategies for big events*

Theme description

Big events which are being organised more and more frequently, cause extraordinary problems in terms of logistics, transport and traffic management by its very nature: the confluence of large flows of visitors at one or a few locations together with numerous workers involved in the organisation of the event is one cause. On the other hand the concentration in time of traffic and transport flows is another one. Finally, very often transport links and areas are utilised that are not part of the daily system which cause problems of way-finding, signing, charging etc.

Big events like sports tournaments, exhibitions, fairs and entertainment shows clearly require specific visitor flow and traffic management practices.

Big cultural and sports events are known and carefully planned on a long time's notice. Two main characteristics influence the planning and operation of such events: (a) the relatively short period of the event; (b) the large geographical space it takes. There is a need to co-ordinate the tourism flows between all sites of the event within a short time window. This so-called inter-site management is a promising tool for flow management.

Problems

Because of its short duration big events are generally organised on the basis of normally available infrastructure and transport means. These are in most cased already heavily loaded in normal circumstances, especially in urban areas; therefore special measures with respect to the organisation of transport and traffic management need to be taken. This while protecting the population and activities directly affected by the event. Since these events really disturb standard habits they are real 'test labs' for innovative schemes for the organisation of transport, flow management and traffic control.

A special potential instrument is the so-called inter-site management. It includes different techniques which can be adopted to solve the transportation – tourism problem, such as: co-ordination of opening hours of the different sites, allocation of time slots, optimal routing (planning and operating), links with transport and parking services, ITS for information and control, etc.

Objectives

This research mainly aims at:

1. analysing the transport and traffic problems caused by big events
2. describing and evaluating visitor flow and transport/traffic management practices in big events
3. to identify and assess so called inter-site management measures
4. developing guidelines for optimal practices with big events

Research methods

The following approach is recommended:

- designing a typology of big events based on characteristics like geographical distribution of events, time profiles, visitor flow characteristics etc. by reviewing previous and planned events.
- making an inventory of visitor flow management and transport/traffic flow management practices applied in previous big events.
- selecting a limited number of big events to be held in Europe in the near future for closer analysis.
- monitoring and evaluation of the results of the practices adopted in the cities
- to review different transport and access techniques related to intersite co-ordination which can be applied.
- preparing guidelines describing best visitor, inter-site and traffic management practices for big events

Possible role for the EC

Big events are important attractions with a big economic impact but cause at the same time big transport problems. The EU can help to develop, test and disseminate practices, especially when big events have cross border impacts.

The study will help to improve the management of tourism flows to big cultural and sports events in the EC countries (like European Football Championship, national festivals (e.g. Venice), pilgrimage sites for 2000 events, trade-fairs and exhibitions (e.g. ITM – Berlin)) and of future potential international events (like EXPO, World Football Championship< etc.). Such solutions of flow management will be available within the EC countries and linked to cross national flows towards the destinations of the events.

Expected results

The results are:

- a typology of big events with connected transport and tourism problems
- knowledge of the cost-effectiveness of visitor, inter-site and transport/traffic flow management practices
- guidelines for the application of those practices

Related projects

It is necessary to establish a link with several on-going national projects on this subject. There is a close connection with other research themes (e.g. no. 13). It is recommended to contact with EURO-2000, ROME 2000 and ISRAEL 2000.

Theme 14   *Development of ITS-based guidance systems for urban tourists*
Theme description
Urban destinations for tourism are identified as high constraint areas of tourism flows. Intelligent Transport Systems services constitute an adequate instrument for guiding urban visitors and thereby managing these travel flows. Both roadside and in-vehicle systems are promising tools to be implemented in the future.
Problems
Most of the urban tourist destinations suffer from highly concentrated visitor flows located in relatively small-condensed areas, resulting a high congestion towards the tourist sites. This affects the access for both tourists to reach the sites and the local population to reach their routine destinations. Also high negative environmental impacts are created. The more complex is the city, the more severe is the problem. The current situation shows a lack of techniques for visitor guidance (information and decision making), flow management and control. Especially public transport users need a lot of information about the system, which is difficult to get for tourists at the moment. A particular aspect is the lack of familiarity of visitors with the local transport systems given the normally low frequency of their visits.
Objectives
The overall objective is to identify or develop adequate ITS strategies to manage the visitor flows in urban areas in three different levels: (a) information supply; (b) parking, route and public transportation guidance; (c) traffic and parking control. All market segments should be considered: visitors versus citizens, private cars versus public transportation users, FIT versus organised groups. The study will also examine the potential of recent tools such as in-vehicles technologies (electronic maps, cellular mobile systems, etc.) and their use. In particular the special needs and circumstances of visitor's needs to be policy addressed, e.g. unfamiliarity, language skills, inaccessible paying systems, stress.
Research methods
The approach suggested consists of the following elements: • Analyse a selection of different urban tourist destinations and policy scenarios which require the use of ITS. • Review good practices of tourist-oriented ITS-services that have already been implemented. • Review new technologies and developments of ITS and examining their potentiality for tourist services. • Developing strategies, based on the techniques and the technologies mentioned, for each urban destination type and scenario. • Recommend pilot projects for promising packages of ITS services

ARTIST – Final Report

Possible role for the EC

Many of the European cities are attractive destinations for cultural tourism leading to significant transport flows, while at the same time the development of adequate infrastructure is usually constrained; in many cases these constraints are stemming from the need of preserving the cultural heritage. Thus, the use of ITS to manage and control the flows is essential since this may obviate the need for expanding the infrastructure. The outcome of this use is a good balance between tourism and other urban activities, reducing negative impacts and creating sustainable tourism. Given the numerous European cities showing these problems in common, it is an EU interest to promote these ITS-solutions in way that they are comparable and interoperable as far as needed and possible. These solutions contribute to the competitive edge of the European city tourism industry.

Expected results

- Potential measures for implementation of tourist-oriented ITS-services in urban tourist destinations
- Strategies to be used for different urban destinations and scenario types.
- Recommendations on integrating ITS-services in the different stages: planning, operation and control, and the linkage between them.

Related projects

There is a connection with all other themes on urban flow management and information systems (no. 9, 10, 12, 20 and 21). It is recommended to connect other EU projects on information for tourism (DG12, DG13 and DG23). In particular this research should build upon the results of the MATISSE2000-2000 project which gives already a nice overview and many examples of ITS services.

Theme 15   *Impact of transport on tourism patterns*
Theme description   One of the dominant explanatory factors of the rapid growth of tourism is the development of extensive transport networks and low-cost travel services. The introduction of the train in the 19th century and that of the car and the aeroplane more recently have given tourism a tremendous boost. The rapid motorisation and the development of low cost air travel contributed to the change of tourism from an activity of the elites to a product for the masses. Although the overall effect of transport supply on tourism is clear the detailed interaction is not understood.
Problems   The problem of this theme is to better understand the long-term effect of transport supply on tourism. Better insights into this complex interaction offers possibilities to stimulate regional tourism or to limit environmental problems through investments in the transport sector.
Objectives   The objective is to describe the long-term interaction between tourism and transport supply. In particular, the effects of transport infrastructure and services on the volumes of tourism and the related facilities have to be studied.
Research methods   It is proposed to: ▪ Select a limited number cases (regions)   ▪ Carry out a historical analysis on the accessibility, tourist flows and tourist facilities   ▪ Develop a systems-dynamic model that incorporate in a quasi-quantified manner the mutual effects over time. Supply reactions of infrastructure providers, tourist resort developers are crucial in the approach.
Possible role for the EC   The results of this research are relevant for the EU since they offer a better insight into the long-term tourism-related effects of strategic investments in infrastructure. These insights especially relate to regional economic developments and land-use impacts.
Expected results   The result is a semi-quantified framework that can be used for the explanation of the growth of tourism flows in relation to changes in accessibility. More importantly, this framework is useful for the estimation of long-term economic effects of investments in large infrastructure. As such it may be incorporated in broader assessment procedures.
Related projects   There is a relationship with EU projects dealing with socio-economic impacts of transport infrastructure improvements. Moreover, it can contribute to other attempts to understand and model long-distance travel.

Theme 16	*Development of a monitoring methodology for urban policies and measures related to tourism mobility.*

Theme description

It is very important to learn from new policies, services and measures that are introduced in urban areas with the aim of assisting visitors in their activity and travel choices and of managing traffic and visitor flows. It is, however, not an easy task to determine the effectiveness of those measures and to transfer the lessons learned to other areas. Therefore, a methodological framework is needed that can help local planners to design ex-post evaluation studies.

Problems

The effects of new policies, services and measures in the field of urban tourism mobility are very difficult to determine and to attribute to individual improvements. The reasons are among others:

- effects are not large and difficult to measure
- it takes some time before effects can be noticed
- many factors of tourism mobility beyond control are changing at the same time
- visitors are a changing group with low visiting frequency
- complicated interaction with other transport policies and regular transport flows
- a lack of theory and models explaining urban tourism mobility

It requires a sound but practical design in order to assess individual measures.

Objectives

The objectives are:

- to analyse particular problems involved in the evaluation of the above mentioned measures
- to provide local parties with some guidelines on how to carry out monitoring studies

Research methods

The following steps are recommended:

- set up a classification of potential measures that require monitoring and assessment ranging from transport systems and services, ITS systems, to visitor flow management practices etc.
- review successful monitoring and assessment studies in the transport field
- develop guidelines for monitoring studies; these guidelines refer to the experimental design (study and control areas, cross section vs. longitudinal, data needs like home interviews, visitor surveys, panels, counts etc.), analytical techniques etc.

Possible role for the EC

Many European cities may benefit from the results since they are then more able to evaluate improvements and adapt their policies. Through a common methodology the results of many individual cities and measure can be compared more easily enabling a quick and efficient build up of systematic insights that can be exchanged and transferred.

Expected results

The result will be a set of practical guidelines for the assessment of potential urban measures and services; these guidelines will differentiate between a number of classes of measures and services.

Related projects

There is a link with research themes 8, 9, 10 and 11. It is necessary to learn from other ex-post evaluation projects in the field of urban transport.

Theme 17   *Development of an action to incorporate tourism mobility in national and EU decision making*
Theme description   Research has shown that tourism travel does not play a significant role in strategic transport planning in most EU-countries. At the same time it proves to constitute an important class of mobility requiring special measures. The awareness of the importance is rather limited among decision-makers and their transport analysts.
Problems   Analysis showed that in most countries tourism mobility is not taken into account explicitly in strategic transport planning nor in feasibility studies related to large infrastructure investment projects. At best this segment of mobility is included implicitly and dealt with similarly to general mobility or as a class 'other'. It has been shown however that tourism mobility has characteristics and a background different from those of regular travel. It requires therefore special policy measures.   The problem to be solved is how to incorporate tourism travel in strategic transport policy making and infrastructure planning.
Objectives   The aim is :   • to design an action with the purpose of making decision makers aware of the importance of tourism travel   • to develop potential actions on how to incorporate tourism travel in the relevant decision-making process   The research is focused on strategic planning at the EU and national level and on large-scale infrastructure projects.
Research methods   It is suggested to: • disseminate the results of the ARTIST project to the relevant decision makers through a high-level meeting   • to analyse the relevant decision making processes and identify the main stakeholders especially from the tourism world   • to develop alternative ways to include tourism travel in these processes. It is necessary to consider all phases of decision making ranging from problem formulation, identification of potential policy measures to evaluation, selection and implementation.
Possible role for the EC   The EC may: • stimulate awareness of the importance of tourism travel among various national and EU decision making arenas   • incorporate tourism travel in its own transport policy making and infrastructure investment planning   • stimulate exchange of practices and experiences between national decision making in various member countries

ARTIST – Final Report

Expected results
The results to be expected are:
▪ increased awareness of national and EU transport policy makers with respect to tourism
▪ concrete suggestions for the improvement of transport planning and policy making processes
Related projects

Theme 18	*Incorporation of tourism mobility in feasibility studies of big infrastructure projects*

Theme description

A large number of big infrastructure projects are being considered or planned in Europe. The expansion of airports or the construction of new airports is an example. The construction of high-speed train connections another. Crossing water in Scandinavia and the mountains in the Alps require huge investments in bridges, tunnels etc.

Tourism travel constitutes a significant share of transport demand to be served by these facilities. This means that in the ex ante assessment of these projects tourism mobility should be included in a proper manner.

Problems

The central problem of this theme is that the way tourism travel is included in ex ante assessments of large infrastructure projects. Investigations show that generally these procedures do not include the benefits of the improvements in a sound manner as far as they are related to tourism transport. First, the valuation of travel timesavings and improvements of travel time reliability has been given only very limited attention in the past resulting in poorly founded parameters (e.g. values of time). Second, the indirect effects on the economy of regions served are largely unknown and therefore often only included in a rudimentary manner at best.

Objectives

The objective is to improve methods used for the assessment of large infrastructure projects with respect to the benefits to tourism travel and the regional economy. In particular, correct values for the values of time and punctuality to be applied for different classes of tourism travel have to be determined. Furthermore, a method has to be developed to estimate the effects of improved accessibility due to investments in infrastructure on the regional economy as far as the tourist sector is concerned.

Research methods

In order to determine valid values of time and punctuality it is recommended to apply conventional methodology used in transport economics. This makes integration in standard evaluation procedures much easier. This methodology refers to concepts like 'willingness to pay' as well as to behavioural analysis like stated and revealed preference techniques and dis-aggregate choice modelling.

The estimation of the tourism-related effects on the regional economy is much more difficult from a scientific point of view. It can be said that in general the regional economic effects of infrastructure are hard to determine in western economies. It is recommended to depart from the state-of-the-art of quantifying the regional economic effects of improved accessibility and then to improve within this general framework the estimation of specific tourism-related effects. It is useful to make progress using particular types of investments e.g. airports and classes of tourism, e.g. urban tourism.

Possible role for the EC

Given the involvement of the EU in planning and financing cross national infrastructure projects it benefits form a sound and consistent evaluation framework that enables individual projects to be assessed and priorities to be determined across several projects.

ARTIST – Final Report

Expected results
The result is an improved ex ante evaluation methodology that takes into account the specific characteristics and impacts of tourism mobility.
Related projects
EU and national projects dealing with comprehensive evaluation of large infrastructure projects should be investigated on its relevance.

ARTIST – Final Report

Theme 19	*Development of an awareness campaign for local authorities of tourist destinations*

Theme description

Even if tourism and transport are strongly related sectors, local authorities in tourist destinations are generally not aware of the existing interactions between them. Transport planning usually does not take into account the role of tourism mobility. Common problems as well as synergies between tourism and transport can be recognised by public administrators by means of awareness campaigns.

Problems

Awareness about tourism and transport interactions is not generally the result of specific campaigns: most of the existing examples are due to the decision of single public administrators, often stimulated by public/private transport and/or tourism operators. Different approaches are needed in order to adequately communicate awareness at Regional and Urban level.

Objectives

Design a structured system aimed at spreading awareness about the importance of tourism and transport interactions in tourist destinations within local authorities.

Research methods

It is suggested:

- to study case studies where awareness has been developed
- to identify and analyse processes and methods in awareness development
- to identify players which usually start the awareness process or seem to be the most effective in order to communicate awareness
- to study and compare awareness campaigns related to other fields (health, environment, etc)
- to produce a handbook and/or database of effective processes/methods

Possible role for the EC

EU is essential in providing:

- a homogeneous approach
- the highest diffusion to awareness campaigns
- the largest number of case studies from which best practices can be derived
- the possibility to establish links with other projects

Expected results

- establish methods for building awareness campaigns
- identify actors and their roles
- design a handbook and/or database of effective processes/methods; possibly an interactive web-site

Related projects

ARTIST's results, above all the list of selected solutions and best practices, can constitute the base tools for differentiated marketing campaigns: a best practice database can be the source where examples adequate to the selected target (seaside resorts, metropolitan areas, etc) can be found. Close connections exist with other research projects related to transport (MATISSE2000 2000, Capitals, etc), tourism (The European network of historical Rivieras, etc) or awareness campaigns. MATISSE2000 database can be also used, by means of an alternative reading (by type of destination instead of by type of solution), in order to identify examples of best practices useful for targeted awareness campaigns.

Theme 20	*Architecture of decision making processes at urban level*

Theme description

The ARTIST study showed clearly that tourism and transport are two different worlds also in the sense of planning and decision making at the urban level. It is necessary to bring both worlds together in order to be able to design and implement systems and services for the urban visitors in an efficient manner. Including both worlds in one process also means that different actors with different goals are involved.

Problems

One of the problems providing tourism mobility services on a local level is that the actors from the tourist industry and from the transport sector have different goals, different cultures, different contexts, different means and resources and different levels of information and insights. A big step forward could be made in developing and implementing adequate demand oriented transport services by integrating both classes of actors into the decision making process.

The literature about organisation and (process) management indicate that having single leaders who do consider other actors' goals is detrimental to comprehensive and efficient decision making. The chances are that actors will use blocking power and that new systems will not be realised.

This research should produce recommendations about organisational forms and processes to include both the transport and the tourism actors in the decision making about tourist oriented services at the local level.

For every situation a quick scan of the possibilities is required before the start of the process.

Objectives

In the transport and tourism world the knowledge about organisation and management topics is limited. This knowledge has to be gathered including the possibilities and risks of:
- Creating win-win situations
- having a leader who is able to motivate other actors
- having an independent process manager might be needed.

Research methods

It is suggested to:
- to review possibilities and experiences about organisation and (process) management in multi-actor arena's especially when the public and private sectors are involved;
- to carry out in-depth analysis of cities where successful formula have been set up;
- to identify and select possible pilots to investigate the apply new concepts in practice;
- in those case cities relevant actors and their goals, resources, contexts are investigated. It is important to select particular transport services or policies as to which decisions have to be made;
- look for win-win situation and develop process architecture to realise the win-win result;
- transfer of the insights and recommendations gained.

ARTIST – Final Report

Possible role for the EC
In the world of traffic and transport (and possibly also in the tourism area) the knowledge of the decision making process when different actors are involved is minor. Even the problems on a local level are not clear yet. The EC could help to investigate the problems in general and initiate practical case studies. The aim is to find possible new solutions and stimulate the transfer to other projects..
Expected results
The technical realisation of tourism transport services ranging form traffic information and booking systems to new transport systems is only one dimension. In practice the technical feasibility is far from enough for the real implementation of these systems. In the standard practical situation the conflicting goals of many parties involved are the driving force.
This research will produce more insights into new decision making processes bring parties from the tourist and transport areas together; specific recommendations on decision making architecture (forms and processes) are given.
This will lead to a more quick and efficient implementation of tourism travel oriented services at the local level.
Related projects
Within the EU-project DIRECT the non-technical issues of travel information systems have been investigated. Aspects like partner-involvement, funding and exploitation are dealt with. The POLIS platform constitutes a potential forum for identifying case-cities and for the dissemination of the results.

Theme 21	*Guidelines for transport planning to include tourism mobility*

Theme description

Transport planners and local authorities need instructions in order to integrate tourism needs and tourism impacts on the environment in transport master plans. Guidelines should contain a suggestion for the process of transport planning in tourism regions/cities, the necessary involvement of tourism-planners and tourism managers.

Problems

Transport and tourism in present practice are regarded as separate topics in the urban and regional transport planning and decision making process. Urban/Regional tourism flows have (depending from the level of tourism in the region/city) a big share of total mobility, especially during peaks of tourism.

Objectives

To develop recommendations for transport planners to include tourism – related to demand, problems and solutions - in the transport planing process in order to increase sustainability and inter-modality of local, regional and international tourism mobility to and within cities/regions**.**

Research methods

- To analyse the "best practice" of transport planning including tourism / in tourism regions.
- To analyse theory of tourism mobility (result of Themes No. 8,11)
- To analyse existing transport guidelines which can be modified according to tourism considerations.
- To develop guidelines which consider both tourism and transportation.

Possible role for the EC

- Launch a research project for the integration of tourism and transport needs in the transport planning process providing a recommended list of possible solutions.
- Provide a recommendation of unified measures for all EC countries.

Expected results

- Increase the efficiency of the present and future transport infrastructure.
- Increase "user friendliness" in the sense of meeting the tourism demand.
- Increase sustainability of urban/regional transport systems.
- Improve and maintain accessibility of tourist regions.

Related projects

There is a connection with other research themes on planning aspects and model development.

ARTIST – Final Report

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