



TRANS 3

Multimodel TRAVel iNformation Service for trinational regional transport

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FINAL REPORT

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Abstract:

Summary of project approach and objectives. TRANS-3 has implemented and trialled the multimodal pre-trip information web site www.transbasel.com during 2001-2002. The principal achievement of the web site is its multimodal journey planner covering car, bicycle and public transport within the trinational agglomeration of Basel. Evaluation results drawn from user feedback indicate a potential for a significant audience and for an impact on the user's choice of transport mode. The project proposes a business model aiming at durable operation of the service.

Keywords : Basel, multimodal travel information, multimodal journey planner, choice of transport mode, Transbasel, TRANS-3.

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1 PROJECT OVERVIEW

1.1 SUMMARY

TRANS-3 has implemented and trialled the web site www.transbasel.com : a multimodal travel information web site for the trinational agglomeration of Basel.

The transbasel web site is addressed to residents and visitors of the trinational agglomeration of Basel, who make trips with origin and/or destination located in the agglomeration. The goal of the web site is to **inform the choice of transport mode** : individual car, bicycle, by foot, public transport, Park + Ride, Bike + Ride. TRANS-3's achievement is to implement, for the first time and for the general public, a web site which covers all of these modes, which allows for **intermodal journeys**, and which covers comprehensively a mid-size European agglomeration with its employment basin.

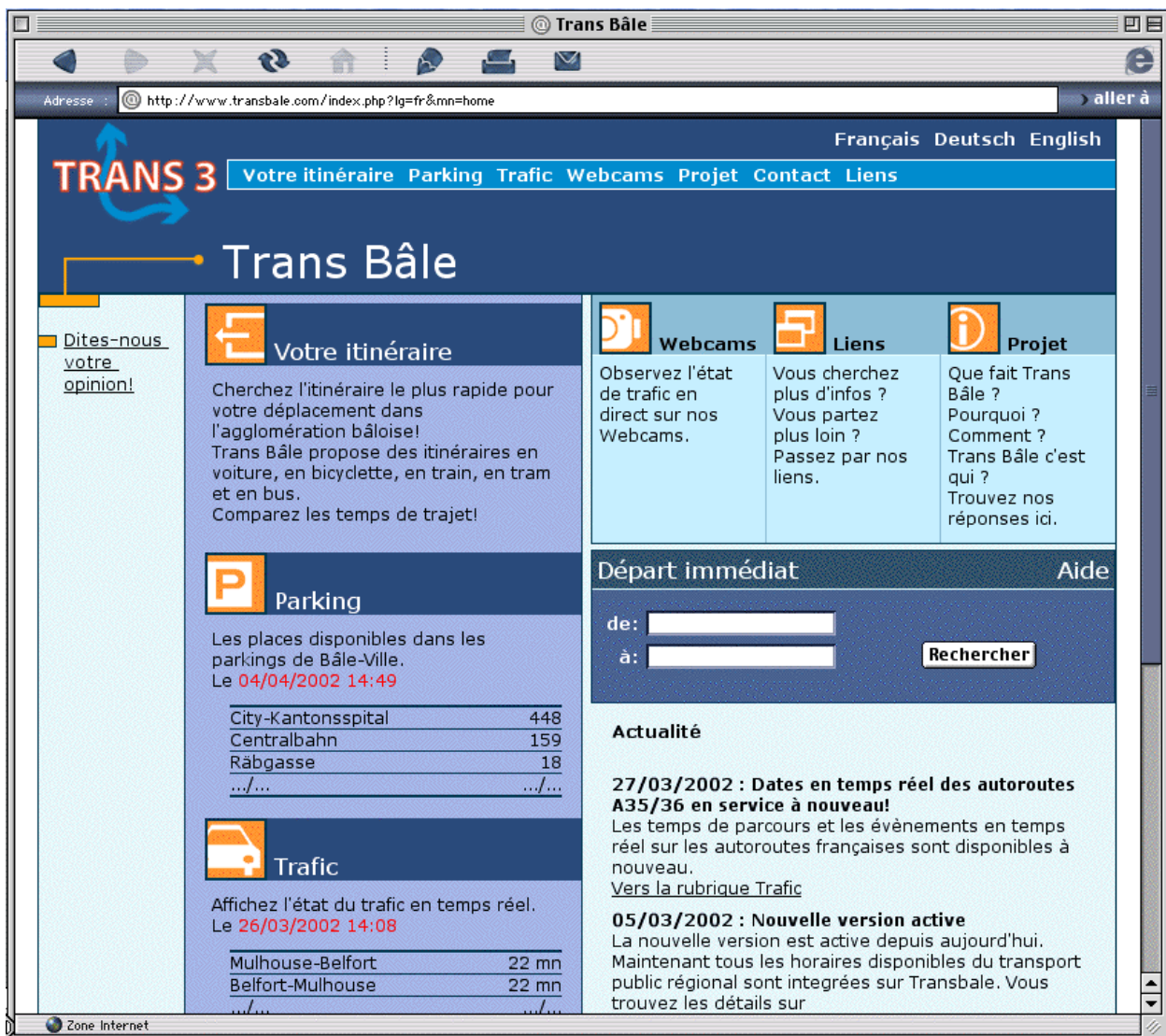


Figure 1-1: Home page of www.transbasel.com, multimodal travel information web site for the trinational agglomeration of Basel (CH/D/F). TRANS-3 has implemented the site and trialled it during 12 months.

The web site offers a **route computation**. It proposes, on a single request, a choice of alternatives using different means of transport, and indicates a **travel time for comparison**. Each route's detailed description is presented in a way adapted to the concerned transport modes. The route computation is based on detailed **timetables** for all public transport lines, and takes into account real-time **parking occupancy** data. Furthermore, the web site informs on real-time **road traffic status**, and feeds local web portals with travel information. It constitutes a basic platform for further regional traffic and transport information services.

TRANS-3 has **implemented** the web site and the underlying system starting from existing data static and dynamic data sources, and from technology for data acquisition and multimodal route computation developed in the 4th FP project CAPITALS PLUS. It has **operated** the web site for a trial period of 12 months.

It has **evaluated** the web site by collecting feedback from users. The site has reached an average of 100 visitors per day during the project lifetime. 70 % of users have given a **positive rating** to the site, 85 % judged the information as **useful**, 60 to 85 % (depending on the feature) have judged the information as **credible**.

TRANS-3 has proposed a **business case** and an **organisational scheme** for future exploitation of the transbasel web site. It has disseminated the gained experience among transport authorities and operators, and the professional community.

The project has cost **940'000 Euro**. The main variable determining the cost of a comparable project will be the nature and quality of existing data sources.

All partners of TRANS-3 wish that the web site www.transbasel.com be **maintained in operation** after the end of the project. They are convinced that the perspectives for transferring the TRANS-3 system to other agglomerations will also depend on the capacity of the TRANS-3 partnership to **find a permanent organisational and financial setting for the transbasel service**.

1.2 PARTICIPANTS

TRANS-3 is a joint project of regional transport authorities, transport operators, and technology suppliers. **Multiple organisations are involved** because of the multimodal character of the project, and because of the administrative fragmentation of the trinational agglomeration of Basel.

	Organisation	Function	
Transport authorities and administrations			
Members of TRANS-3 consortium	Wirtschafts- und Sozialdepartement des Kt. Basel-Stadt	Public transport authority	
	Bau- und Umweltschutzdirektion des Kt. Basel-Landschaft	Public transport authority Road operator	
	Verkehrsabteilung des Polizei- und Militärdepartements des Kt. Basel-Stadt	Road traffic authority	
	Landratsamt Lörrach	Road traffic authority	
	Swiss Federal Roads Administration	National road administration	
	Federal Office for Spatial Development	National transport planning authority	
<i>External partners</i>	<i>Communauté des Communes des Trois Frontières</i>	<i>Public transport authority</i>	
Transport operators			
Members of TRANS-3 consortium	Swiss Federal Railways (SBB)	Railway operator	
	Basler Verkehrsbetriebe (BVB)	Bus and tramway operator	
	Société des Autoroutes Paris-Rhin-Rhône (SAPRR)	Road operator	
<i>External partners</i>	<i>Regio-Verkehrsverbund Lörrach</i>	<i>Public transport authority</i>	
	<i>Société Nationale des Chemins de Fer (SNCF)</i> <i>Deutsche Bahn</i>	<i>Railway operators</i>	
	<i>Baselland Transport (BLT)</i> <i>Métro-Cars / Distribus</i> <i>SüdbadenBus GmbH (SBG)</i> <i>Südwestdeutsche Verkehrs-AG (SWEG)</i>	<i>Bus and tramway operators</i>	
	<i>Betreibergesellschaft des Permanenten Parkleitsystems Basel</i>	<i>Car park operator</i>	
	<i>DDE du Haut-Rhin</i>	<i>Road operator</i>	
	<i>Viasuisse</i>	<i>Operator of traffic information</i>	
	Technology suppliers		
	Members of TRANS-3 consortium	S.A.S. Carte Blanche Conseil, Paris (F)	
R. Keller & Partner Verkehrsingenieure AG, Basel (CH)			
RAPP Ingenieure+Planer AG, Basel (CH)			
Rosenthaler + Partner AG, Muttenz (CH)			

2 PROJECT OBJECTIVES

TRANS-3's objective has been to trial a **multimodal pre-trip travel information service** for trips within the **trinational urban and suburban area of Basel (CH/D/F)**. The project's programme included System implementation, Trial operation, Evaluation, Exploitation planning, and Dissemination.

Project objectives	Description
System implementation	<p>TRANS-3 is a Take-Up action using results of CAPITALS PLUS. The aim was to implement a traveller information service by starting from</p> <ul style="list-style-type: none"> • technology developed in CAPITALS PLUS, • user needs collected in the Trinational Agglomeration of Basel, • existing data sources.
Trial operation	<p>TRANS-3 has operated the travel information service during a trial period of 12 months.</p> <p>The aims were</p> <ul style="list-style-type: none"> • to collect user feedback on a travel information offer which is new as far as it is centered on the choice of the most adapted transport mode, • to gain the operational experience for all concerned parties (system suppliers, transport operators, authorities) which is necessary for moving from an experimental to a durable service operation.
Evaluation	<p>Evaluate the service from the perspectives of all concerned groups.</p> <ul style="list-style-type: none"> • Travellers, by means of web statistics, user panels, questionnaires, spontaneous feedback • Transport operators and public authorities, interested in the impact on the behaviour of travellers • System suppliers and operators, interested in assessing the implementation process, the technical performance, the operation costs.
Exploitation plans	<p>Elaborate a business plan and to propose a legal structure for exploitation of the travel information service after the end of TRANS-3.</p>
Dissemination	<p>Disseminate the experience gained in TRANS-3 and create opportunities for deployment of similar services in other sites. The dissemination activities were directed to the professional community of transport authorities, transport operators, travel information providers.</p>

3 APPROACH

3.1 WORKPACKAGES

TRANS-3 has been decomposed in **5 workpackages**:

- WP1 Co-ordination and project management
- WP2 User needs and system specifications
- WP3 System adaptation and trial
- WP4 Assessment and evaluation
- WP5 Dissemination and Implementation.

This structure is illustrated below.

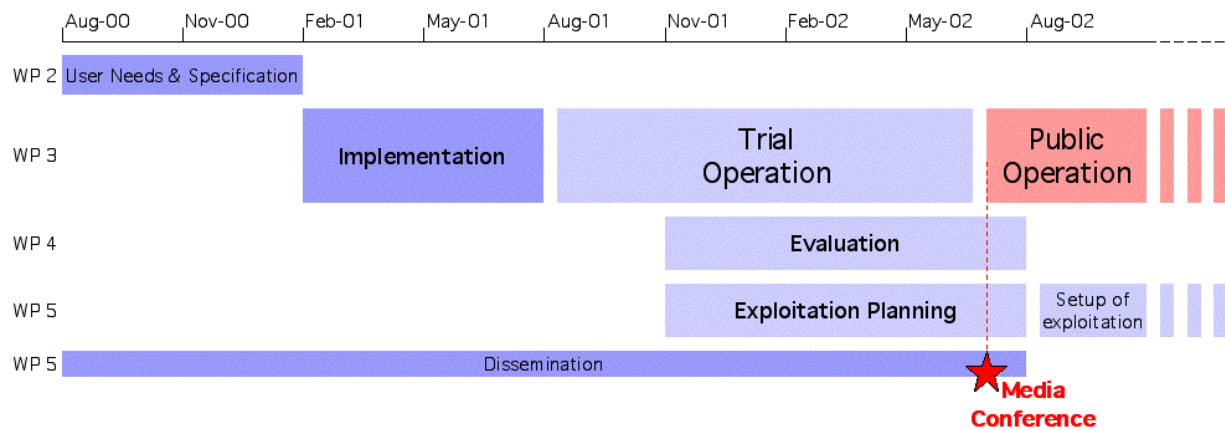


Figure 3-1: Workpackages of TRANS-3. Trial operation started in August 2001, while the quality of information continued to be strongly improved in the subsequent months. In July 2002, TRANS-3 presented the web site at a media conference, putting it into fully public operation.

3.2 CONTENT OF [WWW.TRANSBASEL.COM](http://www.transbasel.com)

3.2.1 PERIMETER



Figure 3-2: Perimeter of www.transbasel.com. (diameter ~50 km). It is chosen in order to include all local and regional trips which have their origin or destination within the trinational agglomeration of Basel.

3.2.2 TRANSPORT MODES

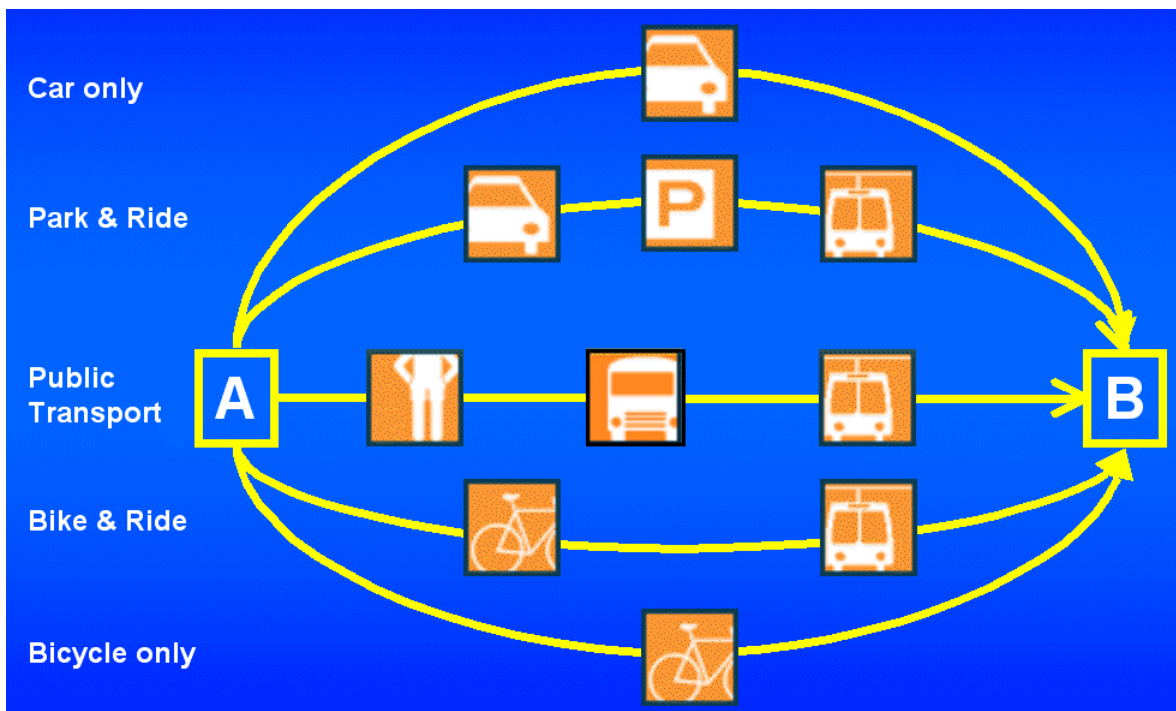


Figure 3-3: Modes and combinations of modes offered by the route computation function of www.transbasel.com.

3.2.3 LANGUAGES

The web site is trilingual : English, French, German.

3.3 DATA SOURCES

3.3.1 NETWORK CODING

TRANS-3 has adopted a data model based on the ALERT Plus standard. The basic network is a graph composed of *access points* and *links*. Each access point belongs to a *pole*: a pole corresponds to what is perceived by the traveller as a single place (and carries a single name), even if several access points and links may be required for describing the movements of a traveller who passes by this place during his or her trip. (A pole may but must not contain more than one access point.)

All travel time attributes are associated to the links. Public transport (PT) lines described by timetables are not represented by explicit links. They are represented by association of arrival and departure times (of a given PT service) to the access point which stands for the PT stop.

In addition to links, access points and poles, the TRANS-3 data model contains *zones*. They contain one or several poles. When a trip request concerns an origin or destination pole which is inaccessible by public transport or inaccessible by car, the route computation algorithm selects another pole located in the same zone as start or end point in order to compute the alternative modes.

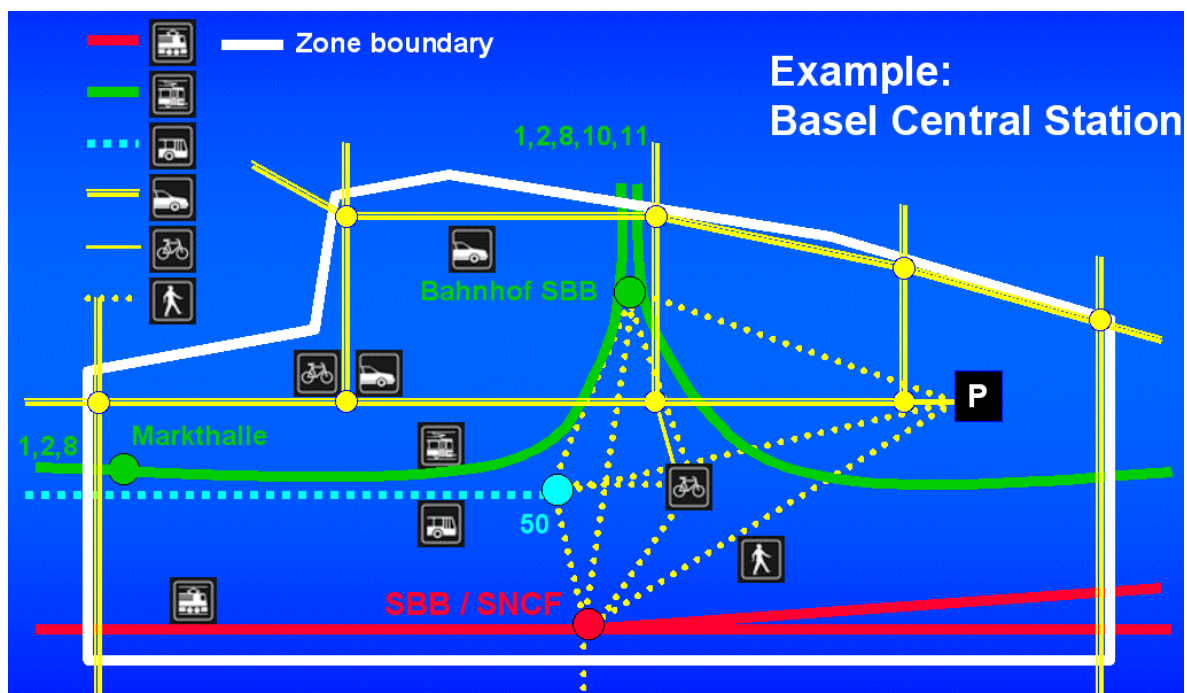


Figure 3-4: Illustration of TRANS-3's network coding. The basic graph is composed of access points and links. Each access point belongs to a pole ; a pole may contain several access points. It corresponds to what the traveller perceives as a "place". (Poles are not visible in the illustration.) A zone contains one or several poles, and is used for selecting alternative start or end points in cases where a given pole is inaccessible to car or to public transport.

3.3.2 SUPERPOSITION OF DATA LAYERS

TRANS-3 has aimed at a complete network coverage in the concerned area, because holes in the coverage (e.g. missing PT lines) constitute an important handicap to the practical usefulness of a travel information service.

For conciliating the aim of complete coverage with the aim of including dynamic data where available, a principle of superposition of data layers has been adopted. The basic layers cover the whole network, the superior layers cover those parts of the network where they are available. For each link, the route computation uses the highest layer which is present.

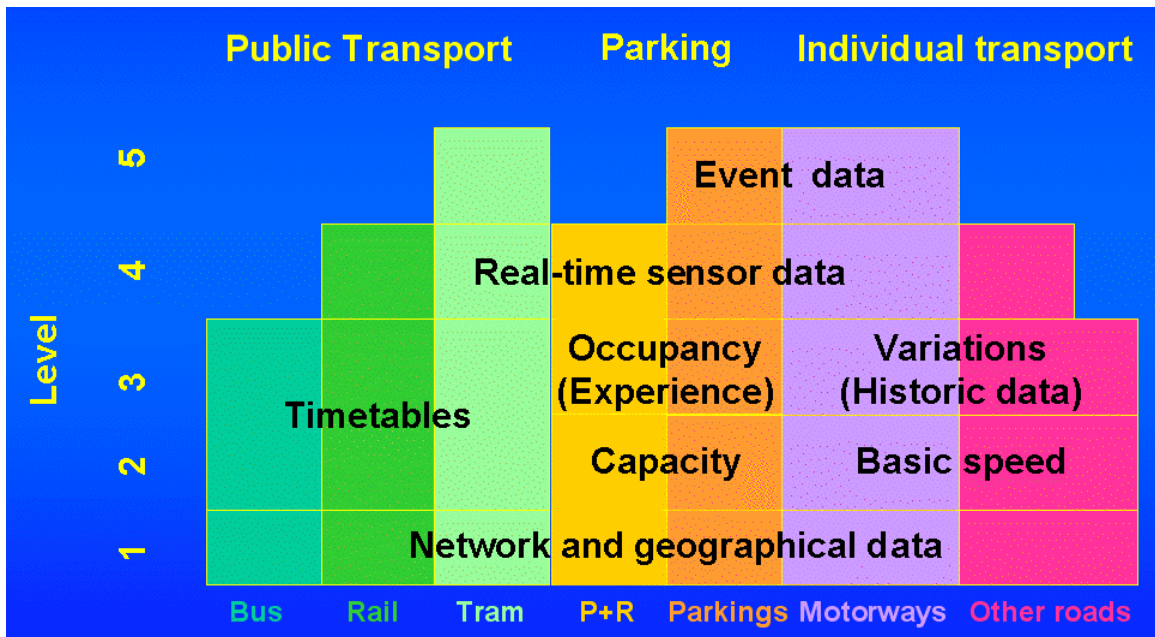


Figure 3-5: Illustration of the principle of superposed data layers. The basic layers cover the whole network, while the higher layers extend only on parts of the network. For each link, the route computation uses the highest layer which is present.

3.3.3 LIST OF DATA SOURCES

Description	Coverage	Supplier / Origin
Static data layers		
Static network for car and bicycle modes Basic speed and variations with daytime	Full coverage. The network density decreases with distance from the centre of the agglomeration.	The data stem from the multimodal transport model GVM for the agglomeration of Basel
Static network of public transport stops	Full coverage for all included PT lines.	Mixed origin : transport model GVM and coding by TRANS-3
Pedestrian network and interconnexions with PT stops	Density decreases with distance form centre.	Mixed origin : transport model GVM and coding by TRANS-3
Static network of car parks and related access links	30 car parks	Coding by TRANS-3
Timetables		
Railway, tramway, bus timetables	Full railway networks Tram and bus networks in Swiss sector of agglomeration	SBB supplies integrated data stemming from several operators : BVB, BLT, AAGL, WB, Post
Bus timetables	Distribus network	Metro-Cars
Bus timetables	SWEG and SBG networks in German sector of agglomeration	Regio-Verkehrsverbund Lörrach
Dynamic data		
Real-time car park occupancy	13 central car parks	PPS (Permanentes Parkleitsystem Basel)
Real-time motorway events and sensor data	French A36	SAPRR
Real-time road events	Swiss Alert-C network	Viasuisse supplies data stemming from cantonal polices
Real-time motorway events	French A35	CETE Bordeaux (French State agency)

4 PROJECT RESULTS AND ACHIEVEMENTS

4.1 SYSTEM

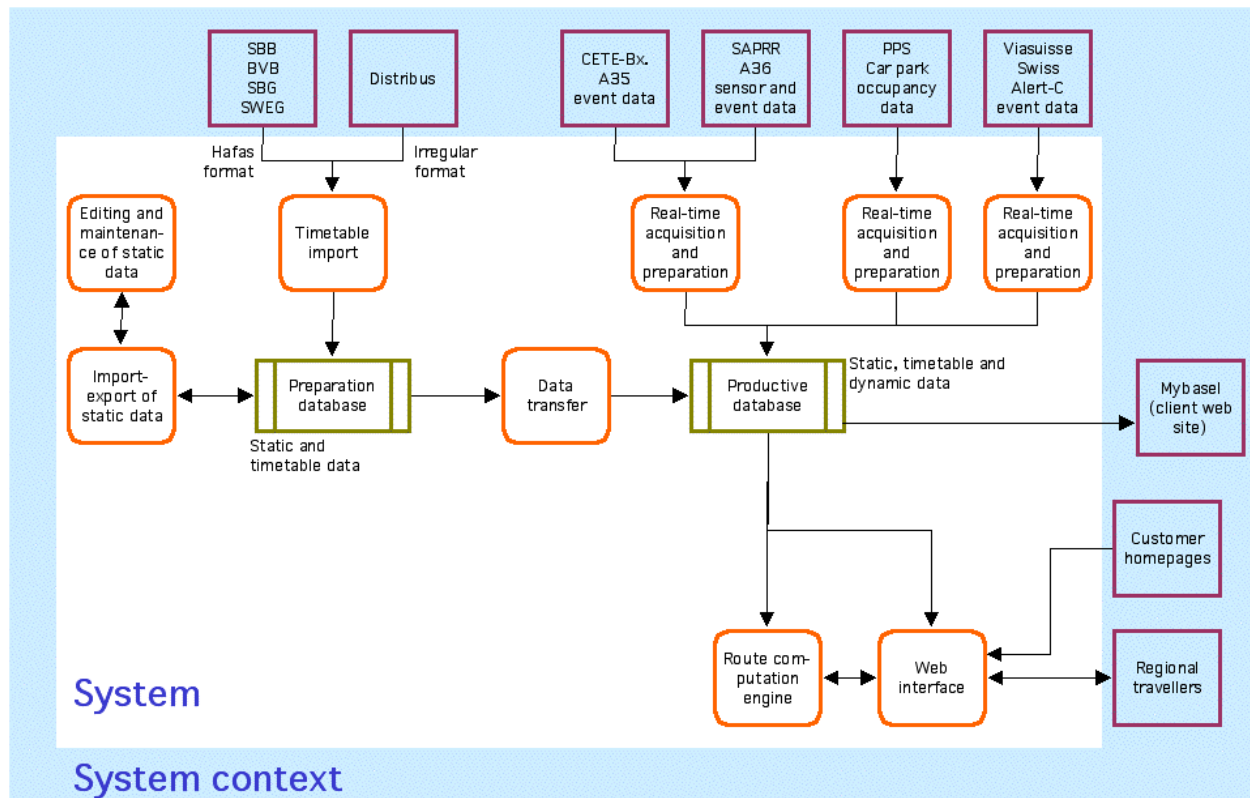







Figure 4-1: Functional diagram of the TRANS-3 system. The system concentrates static and timetable data in a preparation database (on the left), and superposes them with dynamic data from several sources in a productive database (on the right). The productive database supports the web site www.transbasel.com, and in particular the route computation.

4.2 WEB SITE: MULTIMODAL ROUTE COMPUTATION

The web site www.transbasel.com is TRANS-3's primary result, and the multimodal route computation is its most innovative feature. Indeed Transbasel's route computation has pushed farther than any other presently operational travel information service the integration of individual and collective transport modes.

- It offers a **multimodal choice** of alternative routes and indicates the travel time as a criteria for comparison between individual and collective modes
- In certain cases it offers **intermodal solutions**, e.g. Park + Ride. Park + Ride recommendations are either the result of constraints (the origin or the destination point is unaccessible to car or to public transport), or simply the result of travel time optimisation (Park + Ride is faster than car alone and than public transport alone).

The screenshot shows the TRANS-3 website interface. At the top, there is a navigation bar with the logo 'TRANS 3' and links for 'Votre itinéraire', 'Parking', 'Trafic', 'Webcams', 'Projet', 'Contact', and 'Liens'. The main heading is 'Votre itinéraire'. Below this, a search bar shows the origin 'de: EuroAirport (Schweiz)' and the destination 'à: Barfüsserplatz (Basel)'. The results section, titled 'Les résultats de votre requête', displays three route options:

Moyens de transport	Lieu de départ	Lieu d'arrivée	Durée de trajet
 	EuroAirport (Schweiz) 14:00	Barfüsserplatz (Basel) 14:21	21 mn
 	EuroAirport (Schweiz) 13:56	Barfüsserplatz (Basel) 14:21	25 mn
	EuroAirport (Schweiz) 13:56	Barfüsserplatz (Basel) 14:24	28 mn

Below the results, there is a search form titled 'Votre requête' with fields for 'de:', 'à:', 'Date:', and 'Heure:'. The 'de:' field contains 'EuroAirport (Schweiz)' and the 'à:' field contains 'Barfüsserplatz (Basel)'. The 'Date:' field has radio buttons for 'aujourd'hui' (selected) and 'demain'. The 'Heure:' field shows '13 h 56' and radio buttons for 'départ' (selected) and 'arrivée'. There are also links for 'Aide' and 'Couverture géographique'.

Figure 4-2: Result of a route computation request. The TRANS-3 route computation offers a choice of individual and collective transport modes, with comparison of travel times. For each route, a detailed description can be obtained by clicking on the respective line in the result table.

The **data** underlying the route computation are:

- Fix link travel time values for the pedestrian and bicycle modes
- Daytime-dependent link travel time values for the car mode
- The detailed (vehicle-by-vehicle) timetables of the public transport networks
- Real-time car park occupancy data.

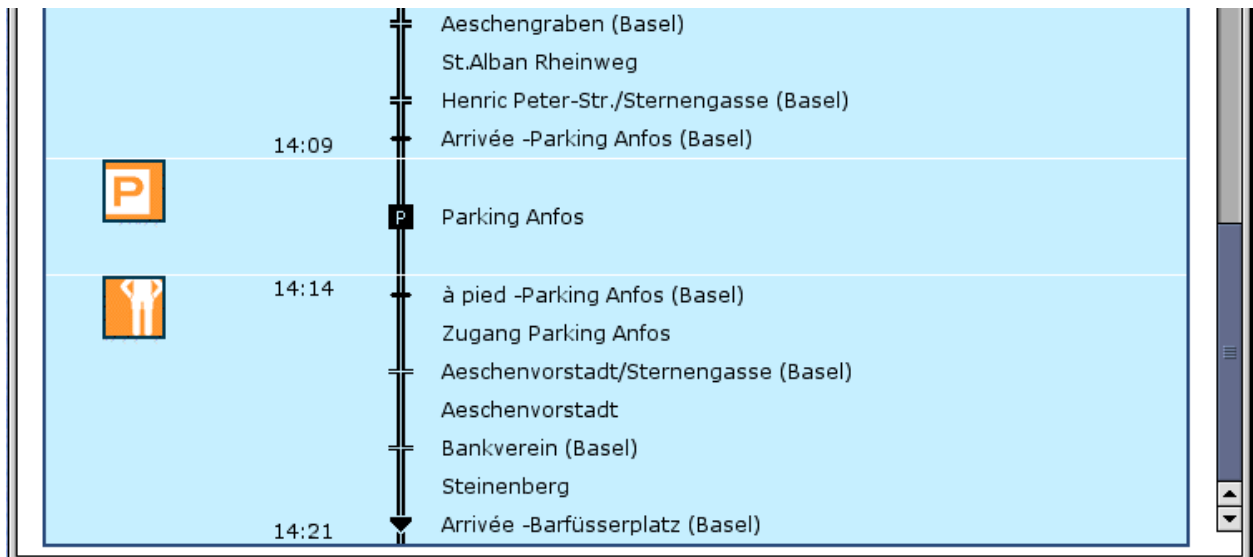


Figure 4-3: Detail of a route computation result. The TRANS-3 route computation offers intermodal routes : for example, it recommends to park the car in a car park and to reach the final destination by foot (in this example, the destination is located in a pedestrian area.)

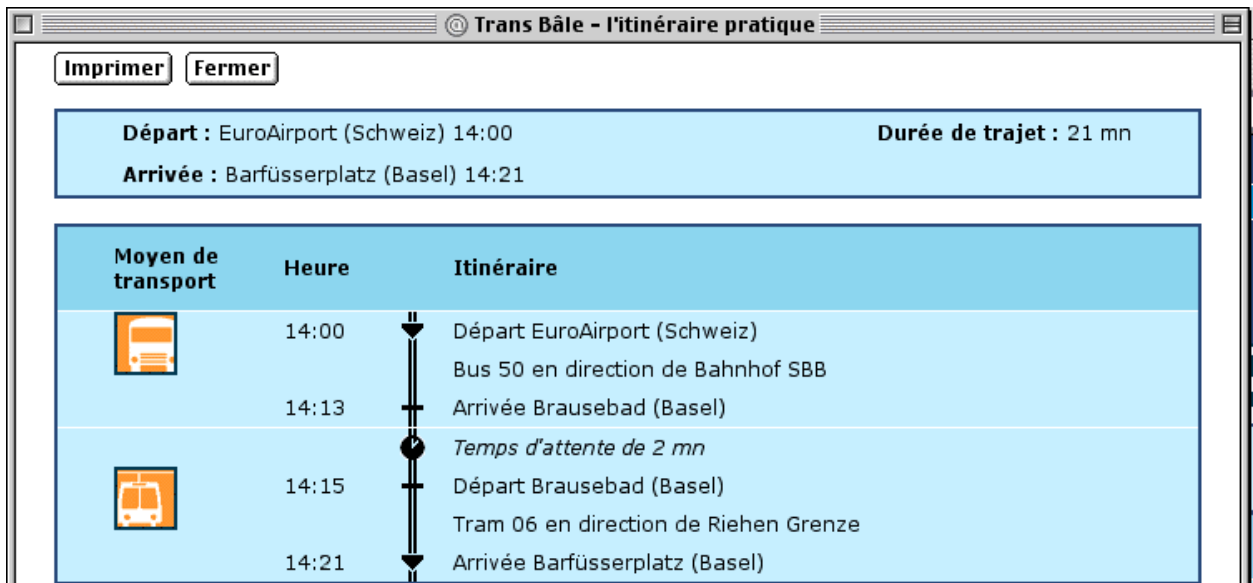


Figure 4-4: Detail of a route computation result. The presentation is adapted to each transport mode.

4.3 WEB SITE: PLATFORM FOR TRAVEL INFORMATION

Besides the route computation, the transbasel web site has further characteristics which make it a platform for traffic and travel information.

4.3.1 COMPLEMENTARY FEATURES OF THE WEB SITE

- Real-time display of available **car parking spaces**
- Real-time display of **motorway traffic status** by maps and web cams
- A collection of **links** to related web resources.



Parking	
Les places disponibles dans les parkings de Bâle-Ville.	
Le 04/04/2002 14:16	
City-Kantonsspital	457
Centralbahn	159
Râbgasse	26
.../...	.../...

Figure 4-5: Real-time display of available car parking spaces on www.transbasel.com. The occupancy number of 13 central car parks are updated every 15 minutes.

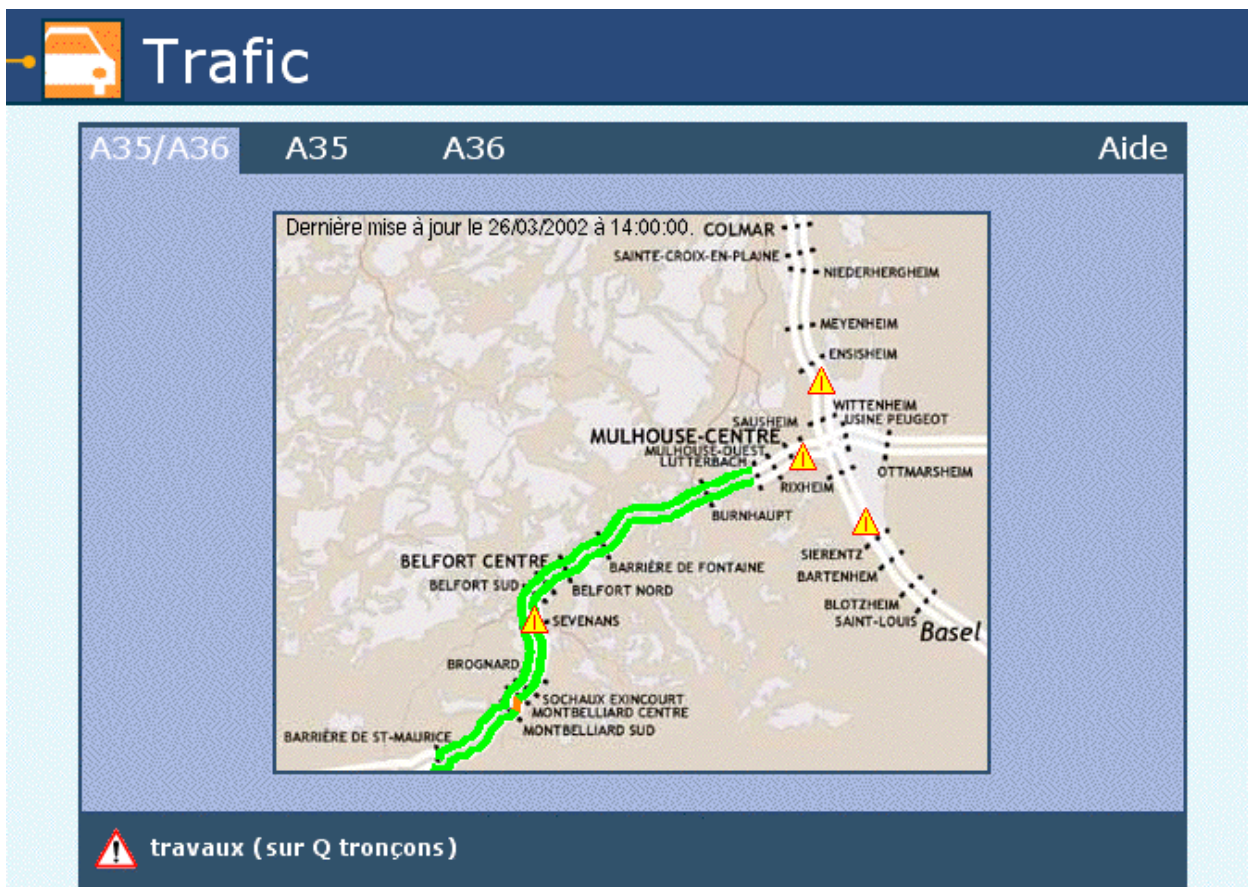


Figure 4-6: Real-time display of the motorway traffic status. The real-time information on

motorways covers event information on French A35 and A36 and Swiss A2 and A3, as well as travel time information on French A36.

4.3.2 COOPERATION WITH LOCAL WEB PORTALS

TRANS-3 has entered in cooperation with private local web portals in order to explore perspectives for becoming a **public resource** for multimodal traffic and travel information. At present two forms of cooperation exist:

- In agreement with the operator of the car parks, Transbasel supplies real-time car park occupancy data to www.mybasel.ch.
- www.planetbasel.ch and www.mybasel.ch have integrated a route computation form to their web sites. The user is directed to transbasel for the answer.

4.4 EVALUATION: USAGE STATISTICS

TRANS-3 measured the web site usage by means of server statistics. The service has been accessible to the public from 30-Aug-01 on, but promotion of the web site started with the on media conference on 04-July-02 only. From this date on, the site received about **100 visits per day** between Monday and Friday.

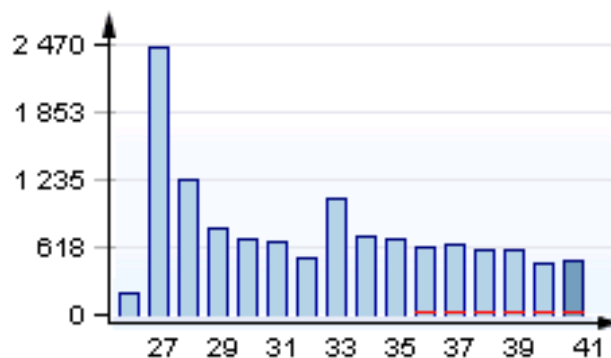


Figure 4-7: Number of visitors per week between July and October 2002.

4.5 EVALUATION: APPRAISAL BY USERS

TRANS-3 collected user feedback by means of:

- A paper questionnaire addressed to an **internal user panel** in March 2002,
- A short **on-line questionnaire** placed on the web site,
- A detailed user questionnaire distributed by e-mail to an **extended user panel**,
- A questionnaire distributed to a **panel of experts** and representatives of transport user associations.

The on-line questionnaire yielded the richest feedback. 88 questionnaires received between 19-June-02 and 10-Oct-02 have been analysed. The detailed results can be found in deliverable D8. The sample size is sufficient to make assertions on statistical trends, but the method of collection (spontaneous feedback) may be a bias to certain results. Interpretations are subject to caution.

4.5.1 GENERAL APPRAISAL

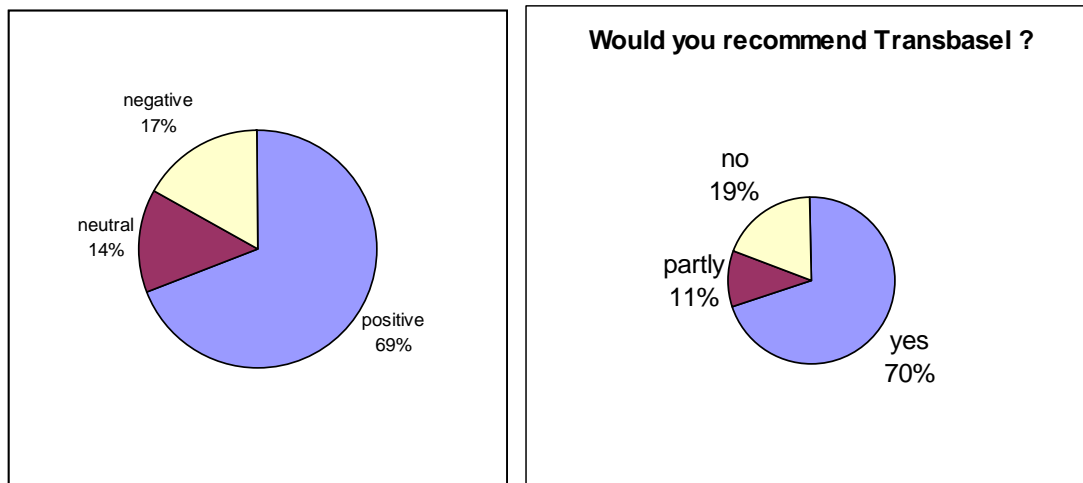


Figure 4-8: The majority of the user feedback gave Transbasel a positive rating.

4.5.2 USEFULNESS

The on-line questionnaire yields the following answers:

	Route c.	Traffic	Parking	Webcam	Link
very useful	54 %	53 %	58 %	45 %	44 %
useful	27 %	29 %	31 %	30 %	44 %
useless	8 %	8 %	4 %	17 %	2 %
don't know	11 %	10 %	7 %	8 %	10 %

The feedback from the extended user panel allows to distinguish the usefulness according to the **reason of the trip** : work or spare time. Generally the users consider the service more useful for spare time trips than for trips to work. Many users comment that they know well the trip to work. The interest for the trip to work depends on the presence and relevance of real-time components in the information.

This is the users' perspective on usefulness. From the authorities' point of view, the web site's usefulness is determined by its **impact on the citizens' behaviour**, since their interest would be to use multimodal information as an instrument for optimising the use of the existing transport offer and helping to get a modal shift to public transport. Hence one question related to the change of behaviour.

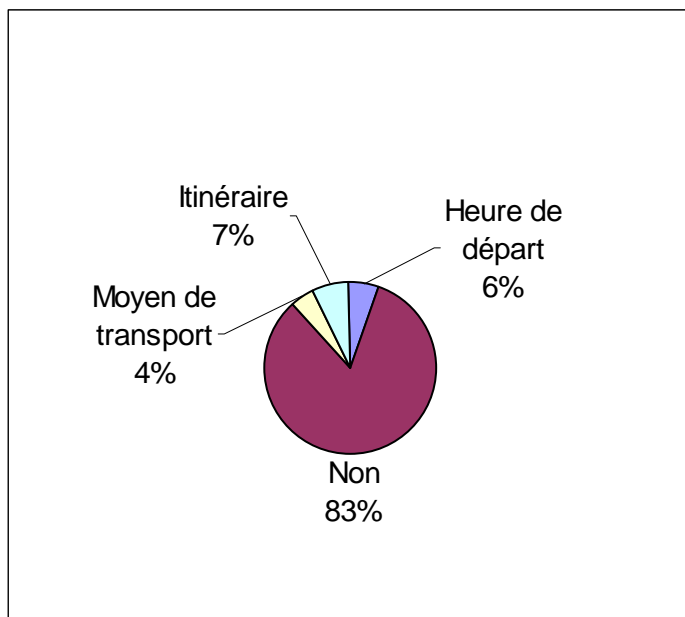


Figure 4-9: Feedback from on-line questionnaire to the question: Have you changed your usual route after having consulted Transbasel, and if yes, what have you changed ?

4.5.3 CREDIBILITY

Credibility of information is a prerequisite for any regular use of the web site. It is an issue since the multimodal character of the information implies an additional **data elaboration**, an unusual way of **presentation**, and a **new editor** of information (the TRANS-3 consortium).

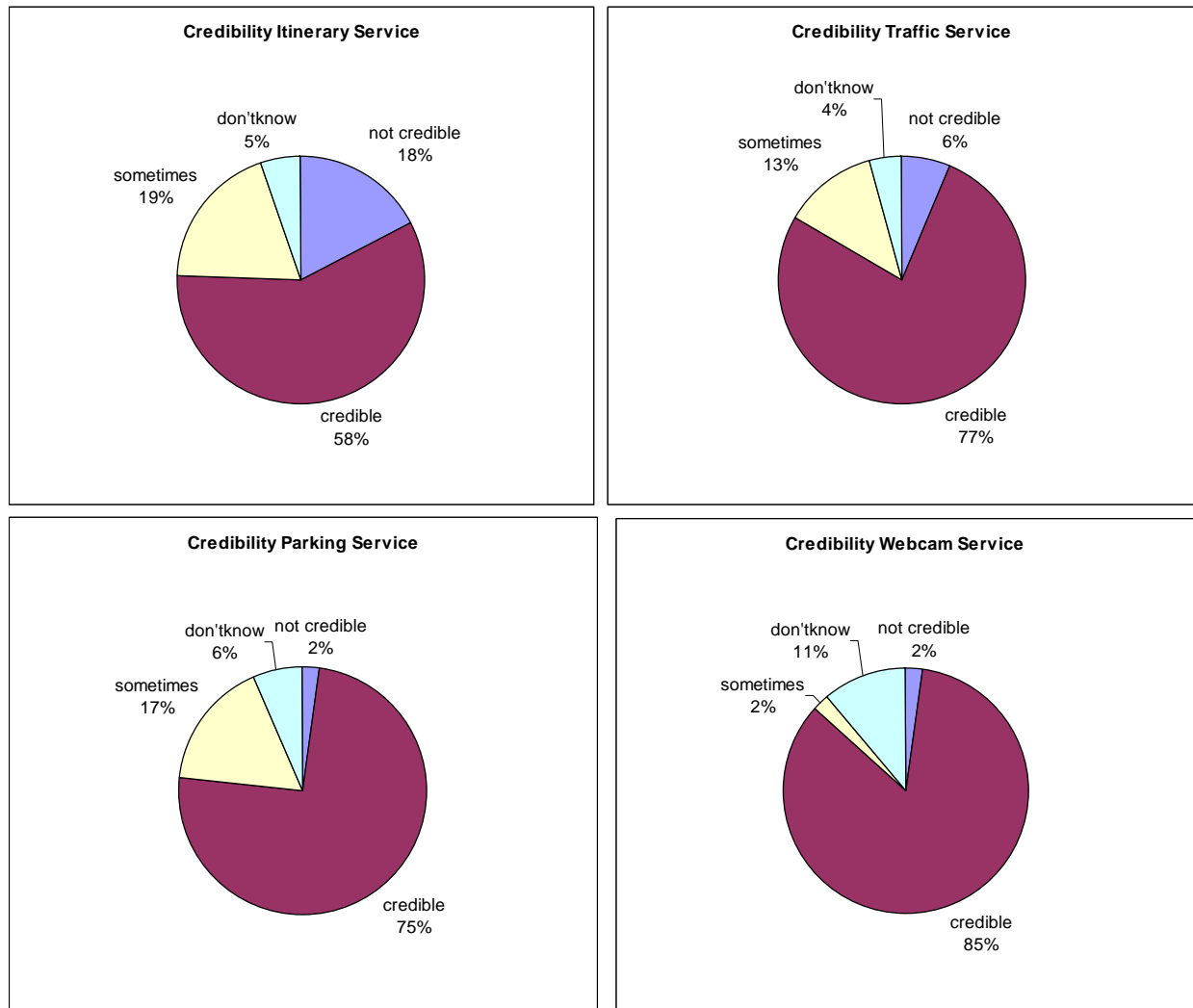


Figure 4-10: Feedback from on-line questionnaire on credibility of offered services.

The user feedback confirms that credibility is an issue as soon as there is a data elaboration (even when it is minimal as in the case of parking occupancy). Remember that the web cams, which are rated credible, have been rated as the least useful of the proposed services.

4.5.4 COMMENTS

The webmaster of Transbasel has received many e-mails from users. **Most comments are encouraging**, and quite indulgent with the imperfections of the service, expressing hope that development continues !

4.6 EVALUATION: TECHNICAL ASSESSMENT AND RECOMMENDATIONS

Starting from problems encountered during the project's lifetime, TRANS-3 collected a set of observations and recommendations which may be of value for further development and exploitation of multimodal travel information services. They are discussed in detail in deliverable D8.

- Intending initially to **display maps on the Web site**, TRANS-3 has subsequently renounced to this feature, which is generally present in car travel information services but still often absent in public transport information services. TRANS-3's feasibility study has shown the **lack of appropriate geographic data sources** : urban public transport features are generally absent from geographic sources, transport operators do not have geographic descriptions of their networks, many sources lack continuity across country borders, and multinational editors have high entry prices. The effort for TRANS-3 in terms of manpower as well as monetary costs would have been too high.
- TRANS-3 has used the network of a **strategic transport planning model** as a starting point, and modified it according to the needs of the multimodal route computation. This proceeding has been successful but has revealed certain difficulties, which relate to **abstractions and simplifications** which are justified for a planning model (used by specialists) but have inadmissible consequences for travel information (intended to non-specialists). For example : the planning model **lacks toponyms** ; it may code a road with a parallel bicycle lane as a single link, which is misleading for travel information ; it may model a single PT stop when a bus line uses two parallel one-way streets with physically separated uni-directional stops ; the planning model can vary the **network density**, which means missing PT stops and is inadmissible for travel information ; **etc.**
Furthermore, TRANS-3 had to develop a common understanding on how to translate the physical network into the coded network topology (simple conformity to the logical data model does not guarantee homogeneous results of the route computation).
The experience shows that only persons with a **real-world knowledge** of the physical network can guarantee a good network coding.
- For manual coding of network features as well as for subsequent data maintenance, an integration of the static database with a **GIS-type graphical user interface** is desirable.
- **Use rights, data formats, and data quality for public transport timetables** are a substantial problem. TRANS-3 has adopted a specific provider-defined format (**HAFAS**), widely used in Switzerland and Germany.
- TRANS-3 has successfully used **standardised formats** for real-time road traffic data acquisition : **DATEX** for events from SAPRR and CETE Bordeaux, **ALERT-C** for events from Viasuisse, **MI2** for sensor data from SAPRR.

4.7 BUSINESS MODEL

TRANS-3 has elaborated a **business case** and **options for organisation** for continued exploitation of www.transbasel.com after the end of the project, has analysed the **transferability** to other agglomerations, and has identified software components which have an exploitation potential **in other contexts**. Details can be found in deliverable D9 (Technology Implementation Plan).

The **business case** is based on two revenue sources :

1. **public funding** for the public-service component of the system : data acquisition, web site operation, function of "data warehouse" for third-party services,
2. an **added-value** service intended for **business web sites**. The added-value consists in coding the access to the client's shop or business premises within the TRANS-3 network, and creating a specific itinerary request form to be integrated in the client's business web site.

Concerning **future organisation**, the institutional partners have tended to a contractual scheme **compatible as much as possible with their existing contractual relations** with the transport operators. The scheme proposed by TRANS-3 is illustrated below.

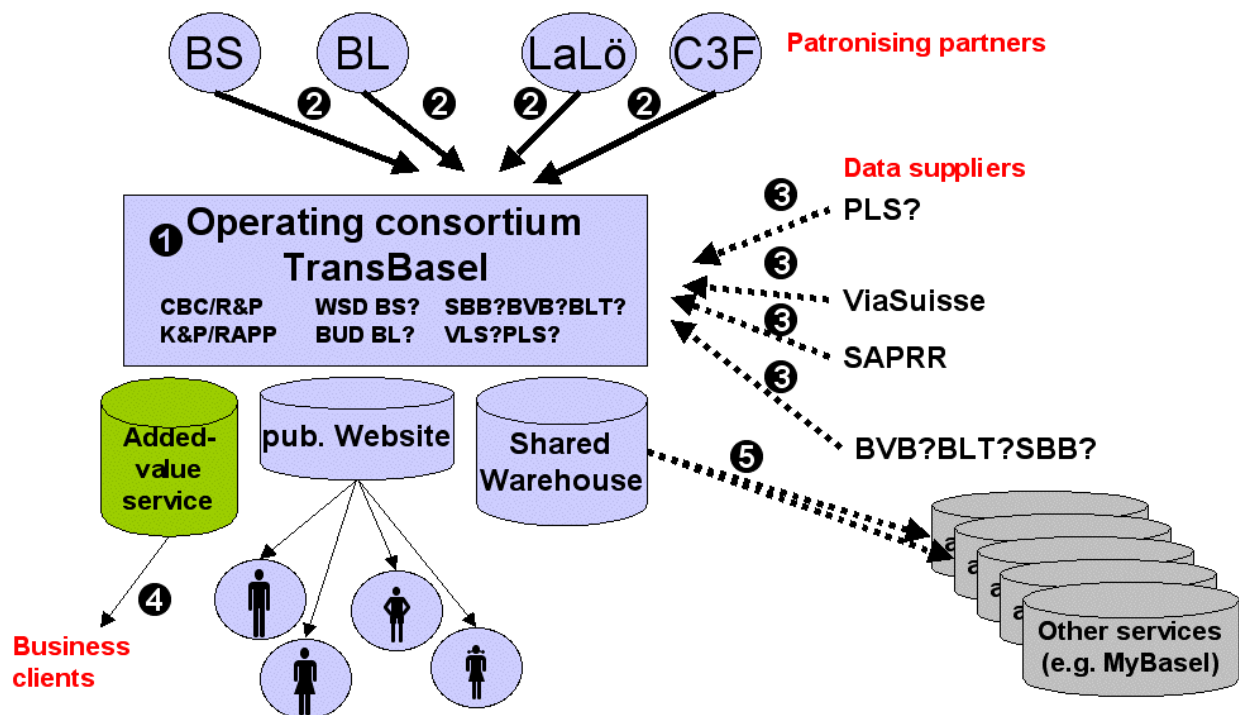


Figure 4-11: Organisational scheme proposed by TRANS-3 for future operation of www.transbasel.com. The scheme proposes an operating consortium (internal agreement (1)) which contractualised with public authorities for funding (2), with transport operators for data supply (3), with commercial clients (4), and with third-party information service providers who use the multimodal database of the TRANS-3 system (5).

Transfer of the system would mean to set up a system for the same purpose in another agglomeration.

- Generic software pieces can be **re-implemented without modification** : database implementations, route computation software, interface software for standard formats (HAFAS, DATEX)

- Further software pieces have to be **adapted** : tools for initial data import and for import of heterogeneous timetable formats, web site coding (in case of a new visual identity and differences in content), software tools for map displays
- A third group of building blocks has to be **substituted** : hardware, **data**, eventually new modules for dynamic data acquisition.

The analysis shows that the effort for transfer **depends essentially on the static and timetable data resources** which exist in the new context.

Exploitation in other contexts concerns the **multimodal route computation software** (which has already been implemented in a demonstrator for the 5th FP project TRIDENT) ; the **client software for DATEX and MI2**, and the **software modules for the generation of dynamic maps**, which can be used for multimodal as well as for monomodal road traffic applications.

4.8 DISSEMINATION

TRANS-3 has been presented on many occasions to transport authorities and transport operators, to the professional ITS community, and to media. The media conference held in July 2002 has obtained a good echo in local and regional press, radio and television. Please refer to section 5.2 for the full list of dissemination activities.

5 DELIVERABLES AND OTHER OUTPUTS

5.1 DELIVERABLES

Deliverable Code & Name	Planned delivery date	Actual delivery date	Comments	Security
D1 Project presentation	15-nov-00	15-nov-00	<i>The initial Web site has been substituted later on by the rubric "Project" on www.transbasel.com.</i>	<i>Public</i>
D2 Report on User Requirements	15-dec-00	17-jan-01		<i>Public</i>
D3 Functional Specifications	15-feb-01	25-may-01 03-oct-01	<i>Initial version</i> <i>Update for annual review</i>	<i>Internal</i>
D4 Draft Validation Plan	15-feb-01	04-apr-01 15-sep-02	<i>Initial version</i> <i>Final validation plan</i>	<i>IST</i>
D5 Dissemination and Use Plan	15-feb-01	26-feb-01 03-oct-01	<i>Initial version</i> <i>Update for annual review</i>	<i>IST</i>
D6a Operational Web site	15-jun-01	30-aug-01	www.transbasel.com www.transbale.com	<i>Public</i>
D6b Media Event	15-jun-01	04-jul-02		<i>Public</i>
D6 Media Coverage & Dissemination		15-oct-02	<i>Non-contractual deliverable, which documents media event and dissemination workshop.</i>	<i>Internal</i>
D7 Dissemination Workshop	15-apr-02	11-sep-02		<i>Public</i>
D8 Report on Evaluation Results and Technical Recommendations	15-may-02	22-may-02 31-oct-02	<i>Draft version for annual review</i> <i>Final deliverable</i>	<i>Public</i>
D9 Technology Implementation Plan	15-jun-02	22-may-02 31-oct-02	<i>Preparatory report for annual review</i> <i>Final deliverable</i>	<i>Internal</i>
D10 Final Report	15-oct-02	31-oct-02		<i>Public</i>
S1 System overview		22-may-02	<i>Non-contractual deliverable</i>	<i>Internal</i>

The public deliverables are available for download on www.transbasel.com.

5.2 DISSEMINATION AND PROMOTIONAL INFORMATION

5.2.1 CONFERENCES AND WORKSHOPS ATTENDED/ORGANISED BY THE PROJECT

Date	Title	Number of persons attended + other information
06/08-aug-00	ITS World Congress, Torino	attended by delegates of CBC, RAPP, FEDRO, SAPRR
09-nov-00	Project Presentation of TRANS-3, Chamber of Commerce Basel	held by RAPP
25-jan-01	DATEX user forum (Paris)	Presentation of TRANS-3 by G.Baudez
01-fev-01	IST Concertation Meeting (Bruxelles)	G. Baudez
09-fev-01	ISCOM Project Meeting with French partners (Mulhouse)	G.Baudez, P.Rapp, R.Ueltschi
01/03-mar-01	Swiss Transport Research Conference, Ascona	Ch.Egeler presented TRANS 3(03.03.01)
07-mar-01	SWIRTICO	C.Marshal presented TRANS 3
06-jun-01	VSS EK 9.03	Ch. Egeler and C. Marshal present TRANS 3 to Swiss Roads Professionals Association Commission on Location Referencing
21-jun-01	ITS Europe, Bilbao	P. Rapp presented TRANS 3.
15-sep-01	UVEK Geographic Information Systems workshop	C. Marschal presented Trans-3 at a workshop on Geographic Information Systems at the Federal Department for environment, Transport and Communication
01/04-oct-01	ITS World Congress Sydney	M. Rapp presented Trans-3
06-nov-01	VSS/SVI Seminar on Traffic Telematics	P. Rapp presented Trans-3 to the joint assembly of the Swiss Association of Road Professionals and Swiss Traffic Engineers
19-nov-01	IVM Zurich	M. Rapp presented Trans-3 to the Steering Group of the project for Integrated Transport Management in Zurich
03/05-dec-01	IST Event 2001 Düsseldorf	Booth at exhibition
20/22-mar-02	Swiss Transport Research Conference, Ascona	Presentation on first experiences (Ch. Egeler), attended by 30 persons
11-avr-02	Journée ATEC/ARENE on multimodal travel information	Presentation of TRANS-3 (G. Baudez), attended by 50 persons
04-jul-02	Media conference	Presentation of transbasel web site to local media. Attendance 15 persons from press (CH, D), radio, TV
11-sep-02	Dissemination workshop	Presentation of exploitation concept (business plan and institutional agreements) to all concerned authorities, operators and data suppliers
11-sep-02	Landkreis Lörrach	Ch. Egeler presents the results to the political committee on environment and transport issues

5.2.2 ARTICLES PUBLISHED , PRESS COVERAGE, DEVELOPMENT WEB SITES

<i>Date and Type</i>	<i>Details</i>
04/05-jul-02 Various local media	Very good local media coverage following media conference. See Deliverable D6.
Project web site	www.transbasel.com
"Strasse und Verkehr" 11/2001 (Official journal of Swiss Association of Road Professionals)	Technical article by P. Rapp "Multimodal information service for the trinational agglomeration of Basel"
22-nov-00 Various local newspapers	Local press coverage of event in Lörrach on 21.11.00 with mention of TRANS-3.

6 PROJECT MANAGEMENT AND CO-ORDINATION ASPECTS

The following table summarizes the **financial effort** of TRANS-3 :

	Euro
Budget contributions	
IST programme (EC)	183'968
IST programme (Swiss Office for Education and Science)	291'268
Project-specific co-funding by local and national authorities	123'379
Consortium partners	102'807
Total budget	701'422
Cost exceedance (= Investment by the private companies in the consortium)	239'000
Total cost	940'422

The **cost split** according to budget was : (see diagram below)

WP1	Co-ordination and project management	10 %
WP2	User needs and system specifications	20 %
WP3	System adaptation and trial	44 %
WP4	Assessment and evaluation	18 %
WP5	Dissemination and Implementation	7 %

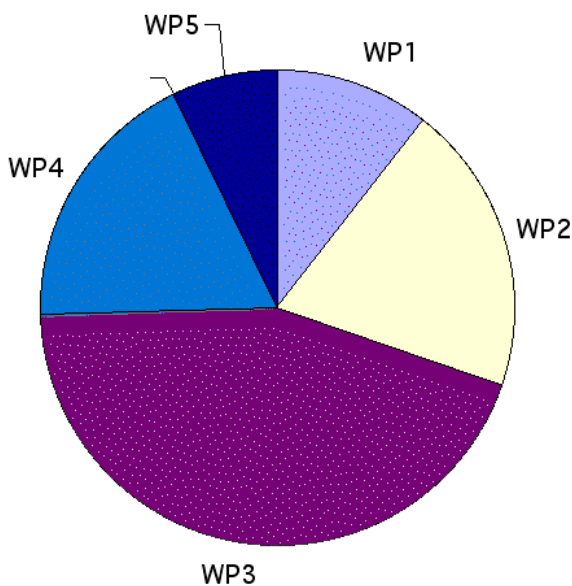


Figure 6-1: Cost split according to initial budget.

Work packages 2 and 3 revealed difficulties, which were the cause of cost exceedance. Overmore, **project management** required an additional effort due to the large number of partners involved.

- The **survey and analysis of available data sources** took more time than planned. It was often difficult to identify the best organisational and technical contact persons. The consortium had to clarify the responsibilities of the different partners. These difficulties delayed the system specification and implementation.

- The consortium partners defined a fairly high threshold in terms of quality of the delivered information, before giving green light to public promotion of the web site. Unsatisfying route computation results stemmed mostly from the **unsufficient quality of the underlying data** : static and timetables. A extraordinary effort was necessary to verify and correct the data quality.

7 OUTLOOK

7.1 FUTURE EXPLOITATION OF WWW.TRANSBASEL.COM

All partners of TRANS-3 wish that the web site transbasel.com be **maintained in operation** after the end of the project. The motivation comes from the feeling that the service can effectively become an instrument of public policy in matters of regional transportation, and by the encouraging interest and feedback from users, journalists and observers.

There is agreement on the fact that the solution for future exploitation will be in a **public-private partnership**. A political support of the service is necessary for making legitimate the operating consortiums' access to all required data, and for covering at least a part of the operation costs.

The political support can take the form of a direct **public service mission** (run the public website, and offer the resource of a multimodal data warehouse for third-party information service providers). Alternatively, it could be indirect through authorities becoming principal paying users of added-value services (such as integration into public websites, or information displays or kiosks in public premises).

The present business model rests

- on **free access to data**
- on **public investment** for initial set-up
- on a latitude for selling **added-value services**.

Indeed, the revenue generated by added-value services will be too small to amortise private investment for initial set-up of the system. It is essentially a **scheme of public economy**.

The presence of a private or mixed operating consortium seems nevertheless justified, since the private stakeholders would be interested in **searching additional and new associated services** (in relation to points of interests, for example).

7.2 TRANSFER TO OTHER AGGLOMERATIONS

The TRANS-3 consortium has presented and promoted the transbasel web site in several agglomerations of the respective participants' countries (Bern, Zurich, Lugano, Paris, Düsseldorf) and on international forums (ITS congresses of Bilbao and Sydney). The effective multimodal integration achieved by TRANS-3 has attracted interest from institutional actors.

The institutional actors need an **organisational solution to multimodal travel information** along with the technical solution. The consortium is convinced that the perspectives for transferring the TRANS-3 system will depend to a large extent on the capacity of the present partnership to **find a permanent organisational and financial setting for the transbasel service**.

8 CONCLUSIONS

TRANS-3 has created a web site which has attracted the attention of the public and of the transport professionals who work on multimodality. There are specialists of multimodal travel information who consider www.transbasel.com as a **reference implementation**.

TRANS-3 has achieved its **objective of trialling the service** during a significant period and with a general public. The trial has permitted to **test the concept** of an information targeted on multimodal journey planning "in real world", and to **engage the discussions** with authorities and transport operators on durable operation.

The experience of TRANS-3 shows that a multimodal service using only **static and timetable data** is already of **substantial help to travellers**. These data can be considered as the core value of transbasel's journey planner. On the other hand, the experience shows that even for static and timetable data, there are numerous difficulties related to the data sources and data quality. The implementation and operation of a multimodal service based on these data alone already represents an **organisational and technical challenge**.

TRANS-3 shows that integration of **dynamic data** is feasible and can enhance multimodal travel information. However, many operators do not have dynamic data which is adapted to travel information, and the dynamic data cover fragments of the network only. Advanced applications such as multimodal traffic management information in exceptional situations, do not seem to be within reach of the TRANS-3 partners in near future.

TRANS-3 has worked as an open consortium and has **exchanged its travel information** with third-party web services. This approach seems promising for the future, since it contributes to create interest for multimodal information, to identify priority user groups, to refine the content of the information, and to orient future extensions (including to other media than the web) aiming at increasing the audience. The TRANS-3 partners are convinced that **multimodal content** will have a place in the future development of travel information in agglomerations.