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**SWITZERLAND – NATIONAL REPORT**

**TSB STRATEGIC ORIENTATION SESSION**

**Supply of integrated modes  
of transport and services to clients**

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## RESUMÉ

The DETEC has entrusted FEDRO with the task of piloting a research project entitled "Strategies for recourse to the appropriate means of transport for goods traffic in Switzerland". Other federal offices are contributing to the project actively and financially. The research programme consists of 10 sub-projects. It started in autumn 2008. Its total cost will exceed CHF 2 million. The summary report is expected for December 2012.

By comparison with passenger transport, the transport of goods by road and rail has grown strongly over recent years in terms of traffic flows, infrastructure demands, environmental nuisances and safety. This is due to markedly higher rates of growth and has led to a number of conflicts at the level of transport policy. The forecasts predict a continuation of this growth by reason of economic development and trends in logistics. The studies carried out by the Territorial Development Office suggest that transport services will increase by between 32 and 78% over the period 2002-2030. The large spread between the figures is no doubt indicative of a high level of uncertainty in the forecasts. Nevertheless, there is no dispute that goods transport will grow more strongly than passenger transport. This means that the players involved in goods traffic, the entities responsible for transport infrastructures and the decision-making bodies concerned with Swiss transport policy are under pressure to answer the following questions: How can this growing demand be met in a sustainable manner? What can be done to ensure that goods transport also continues to contribute to the economic competitiveness of Switzerland in the future? To answer these questions, we need a better understanding of the relations between such factors as macro-economic development, the localisation choices of major companies, the new logistical approaches requiring higher levels of quality, punctuality and reliability, technological progress on the supply side and a greatly optimised use of the transport infrastructures. In other words, the field of research has to cover the entire logistics chain. At the same time, however, it is also necessary to bear in mind various social sensitivities and the changing attitudes towards the acceptability of nuisances. All of this results in regulations which affect the operation of the market and influence the decisions made by the players. On the other hand, the present research project permits the tasks to be tackled in all their complexity and concise answers to be found quickly to the following questions:

- **Why is it that the transport of goods by road continues to grow whereas the price per tonne-kilometre is supposed to be lower by rail ?**
- **Are other criteria determinant for the choice of the means of transport ? If yes, what are they and to what extent ?**
- **Are the regulatory mechanisms directed towards a consistent goal ? Shouldn't they be examined objectively in the light of future requirements ? Will new regulatory mechanisms be necessary ?**
- **Will the developments in the logistics market be recognised in good time and will their consequences for goods transport be interpreted correctly ?**
- **Do the configuration and quality of our transport networks correspond to the future needs of logistics and goods transport ?**
- **Shouldn't future decisions on infrastructure development be based on logistics operation chains rather than simply on analyses of journeys and capacities ?**

## 1. INTRODUCTION

DETEC has entrusted FEDRO with the task of piloting a research project entitled "Strategies for recourse to the appropriate means of transport for goods traffic in Switzerland". Other federal offices (ARE, OFT, OFEP, OFE, and OFS as well as CFF Cargo and Hupac) are contributing to the project actively and financially. The research programme consists of 10 sub-projects. It started in autumn 2008. Its total cost will exceed CHF 2 million. The summary report is expected for December 2012.

## 2. AIM

By comparison with passenger transport, the transport of goods by road and rail has grown strongly over recent years in terms of traffic flows, infrastructure demands, environmental nuisances and safety. This is due to markedly higher rates of growth and has led to a number of conflicts at the level of transport policy. The forecasts predict a continuation of this growth by reason of economic development and trends in logistics. The studies carried out by the Territorial Development Office suggest that transport services will increase by between 32 and 78% over the period 2002-2030.

The large spread between the figures is no doubt indicative of a high level of uncertainty in the forecasts. Nevertheless, there is no dispute that goods transport will grow more strongly than passenger transport. This means that the players involved in goods traffic, the entities responsible for transport infrastructures and the decision-making bodies concerned with Swiss transport policy are under pressure to answer the following questions: How can this growing demand be met in a sustainable manner? What can be done to ensure that goods transport also continues to contribute to the economic competitiveness of Switzerland in the future?

To answer these questions we need a better understanding of the relations between such factors as macro-economic development, the localisation choices of major companies, the new logistical approaches requiring higher levels of quality, punctuality and reliability, technological progress on the supply side and a greatly optimised use of the transport infrastructures. In other words, the field of research has to cover the entire logistics chain. At the same time, however, it is also necessary to bear in mind various social sensitivities and the changing attitudes towards the acceptability of nuisances. All of this results in regulations which affect the operation of the market and influence the decisions made by the players.

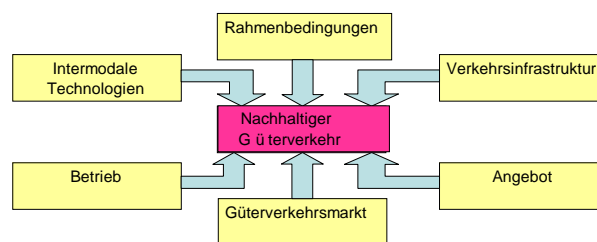


Figure 1

By comparison with passenger transport, research in the field of goods transport has a lot of catching up to do, particularly with regard to the numerous interdependences alluded to above. Past experience has shown that the comprehensive view we require can never be achieved by dealing with projects in isolation.

### **3. PURPOSE OF THE RESEARCH PROGRAMME**

The logistics market and the resulting goods traffic must make a contribution to ensuring the competitiveness of the Swiss economy. This overarching aim is broken down into a number of subsidiary objectives from the point of view of the needs of the logistics market, the transport market and society as a whole and it serves as the point of departure for the weighting of the research topics

The research projects are intended to provide an initial response to the questions raised concerning the developments in logistics and the goods transport market, the supply and demand for goods traffic, regulation and nuisances for society. By the end of the present research project, we should have specific and realistic proposals for sustainable goods transport.

In principle, the project focuses on transport within Switzerland, as well as on the export and import of merchandise. Transit flows are taken into consideration only if they have a direct effect on the results of the projects. An initial relevancy analysis should first clarify whether this hypothesis is an acceptable one. Depending on the outcome, the limiting conditions of the present research project could be adapted.

Though the research is confined to the transport of goods by land, account is also taken of the distribution and movements of freight carried by air and water through ports and airports. In the research, the emphasis will be on the whole logistics chain, i.e. from door to door.

### **4. STRUCTURE AND ORGANISATION OF THE PROGRAMME**

Ten sub-projects spread over time have been put out to tender. They are inter-related and inter-dependent and, taken together, should serve to achieve the aims in accordance with the following list of objectives:

- Needs of the logistics market : efficient deployment of resources, optimisation of logistics processes, application of innovative technologies, coverage in space.
- Needs of the transport market : deployment of means of transport in accordance with demand, economic sustainability, true transport costs, provision of sufficient transport infrastructure capacities, financing of transport infrastructures.
- Needs of civil society : to minimise emissions, improve safety in logistics and transport of goods, reduce the volume of transport, optimise demand through active management.

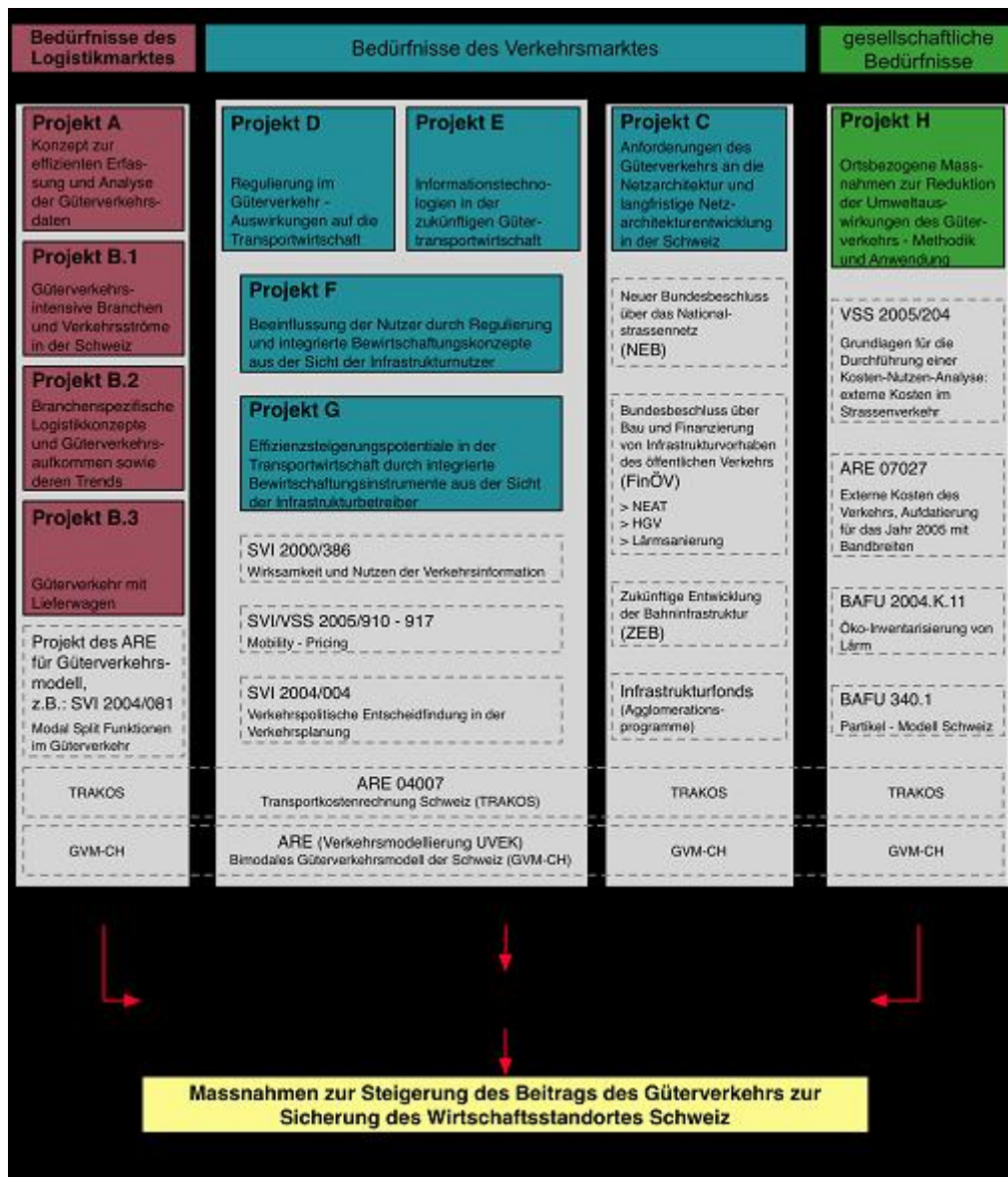


Figure 2 : Organisation of the sub-projects

## 5. THE SUB-PROJECTS AND THEIR PROGRESS

### 5.1 Concept for recording and effectively analysing goods transport data (Project A)

The project must describe the requirements to be met by a differentiated and updated statistical system for goods traffic, having regard both to the functional and spatial structuring and to the modes of transport. Among other things, the project needs to study the continental transport chains from the place of production in Switzerland (or from the border crossing in the case of imported goods) up to the final destination (or up to the border crossing in the case of exported goods). In addition, it will be necessary to examine the extent to which surveys on the structure of the economy can be applied effectively in modelling transportation. It is assumed that there will be an adjustment to developments and requirements at the European level and that the cost-benefit ratios are appropriate.

The research methodology applied is as follows:

#### Work Package 1: Existing data and survey instruments

WP 1 is concerned with presenting and assessing the existing and planned goods traffic data and statistics. There is already an abundance of data for processing.

#### Work Package 2: Framework conditions and developments

WP 2 will present the framework conditions and any developments which could have an effect on the needs and possibilities for goods traffic surveys and statistics. The project group has excellent contacts with Eurostat and other bodies concerned with the further development of goods transport statistics.

#### Work Package 3: Needs analysis for goods transport data and principles/objectives for goods transport surveys

WP 3 will establish the requirements for goods transport data and will derive from them principles, goals and constraints for surveys of goods traffic data. Important groups of actors for the needs analysis include the administration and public authorities, various technical bodies at different spatial levels, the logistics and transport service-providers, forwarding agents, planning and consultancy firms, professional associations and the universities and polytechnics.

#### Work Package 4: Proposals for the adaptation of existing survey methods and new survey instruments

WP 4 will draw up proposals for the methodical extension of the present range of instruments for goods traffic surveys and statistics on the basis of the results of WP3. This work will also take into consideration experiences from abroad. To deal with the gaps and shortcomings identified in the existing goods traffic statistics, relevant forms of options will be indicated to solve the problem.

#### Work Package 5: Good Practice from abroad for survey methods and instruments

Examples of good practice from abroad will be gathered for the data needs identified. To the best of our knowledge, experiences from Sweden, the Netherlands, France and Germany are particularly relevant. The research group has the necessary contacts with the statistics offices at European level.

#### Work Package 6: Analysis and evaluation of the proposals

WP 6 is concerned with the analysis and evaluation of the adjustment proposals drawn up in WP 4. This will serve the purposes of the pre-selection of the adjustment proposals for the concept. The general assessment of solutions will be carried out on the basis of their advantages and disadvantages with regard to the following main criteria : uses/cases, user needs, fulfilment of EU requirements, technical feasibility, organisational feasibility, acceptance and cost-effectiveness.

#### Work Package 7: Concept for the efficient recording and analysis of goods traffic data

WP 7 will gather together in the form of a concept the adjustment proposals from WP 6 which have been shown to be useful. The concept for the efficient recording and analysis of goods traffic comprises the following parts: (A) summary of actual status, requirements,

need for action, objectives / requirements, constraints, (B) standard measures (which measurement parameters are required for which application purposes, precise definitions and measurement methods for new/adapted measurands), (C) improvement measures (supplementing existing surveys, possible new surveys, adjustments to existing surveys), with differentiation between short term and medium term measures due to the need to take migration into consideration, as not everything can be implemented immediately, (D) summary cost-benefit assessment of the concept, (E) competences for surveying / recording and evaluating, (F) time limits for the implementation of the measures, (G) need for coordination with the European statistics offices, (H) funding requirements.

This project will be completed in the middle of 2011.

## 5.2 Industries generating large volumes of goods traffic and goods traffic flows in Switzerland (Project B1)

The project will analyse the logistical characteristics specific to the transport of goods in the freight trade. The key industries which generate heavy goods traffic in Switzerland will be identified, their characteristics will be described and the spatial breakdown between regions of Switzerland with intensive or extensive traffic will be shown in the form of logistics clusters. On the basis of all the usable data (e.g. national accounts, goods transport and customs statistics) and information (e.g. National Research Programme 41), the key industries in Switzerland will be identified in accordance with their contributions to added value and goods traffic intensities (wherever possible in such a way as to differentiate between internal traffic, export traffic, import traffic and transit traffic).

The research methodology is described below:

Work Package 1 consists in searching out and procuring appropriate secondary data to serve as the basis for all of the subsequent analyses. This includes quantitative secondary data. The comprehensive search will serve to ensure that no existing analyses need to be repeated. In addition, it will be possible for the purposes of the project to analyse the existing database at the University of St Gallen (LOG-HSG) for the logistics market in Switzerland 2008, 2009 and 2010.

Work Package 2 will contain the goods traffic and industry-related analysis of the quantitative data material. At the same time, it will analyse the role of transit traffic for the project. In addition, it will identify eight key industries for goods traffic in Switzerland. These are responsible for more than 90% of the volume of goods traffic by quantity and value.

Work Package 3 consists in a qualitative and quantitative consideration of the key industries which covers the main logistic and economic parameters and highlights the structures of the logistics systems, as well as the connections with other industries.

Work Packages 4 & 5 derive the primary data requirement on the basis of the existing secondary data. The analysis has shown that a quantitative survey is necessary, particularly concerning Work Packages 4 and 5.

This sub-project will be completed at the beginning of 2011.

### 5.3 Regulation of goods traffic – impacts on the transport industry (Project D)

The objectives of this study consist firstly in structuring the instruments of regulation for all significant means of transport. The study will assess the impacts of each of the instruments of regulation currently established in Switzerland. In addition, particular attention will be paid to the changes in competition which could arise following the opening of the market for goods traffic and their future trends will be outlined. On this basis, the study will show how the organisation of the European transport market affects Switzerland and what degree of freedom remains in Swiss transport and competition policies for the introduction of new instruments of regulation. The project will highlight the opportunities and the risks for the income of goods transport companies and should contribute to ensuring that the Swiss economy is placed on a sustainable basis. Finally, the study will need to address the question of the potential of these instruments for efficient infrastructure use.

The methodology chosen is as follows:

#### Work Package 1: Overview and structure

Analysis of the legal bases, identification of the applicable target system, system analysis of the points to be addressed and the relevant levels of the transport industry, proposal for comprehensive structuring and classification of the instruments of regulation.

#### Work Package 2: Evaluation of experiences

Evaluation of the international literature on liberalisation and transport, with special focus on the actors; evaluation of national and international studies on the effects of specific regulation measures; analysis of trends in relation to development of the international regulations in goods traffic; evaluation of the lessons and trends concerning the liberalisation and regulation of other network related markets; derivation of good practice and lessons for Switzerland.

#### Work Package 3: Appraisal of the current regulations in Switzerland

Assessment of the effects (costs, traffic, competitiveness); assessment of the opportunities and the risks.

#### Work Package 4: Evaluation, optimisation measures

Characterisation of the main lines of research; selection and analysis of the impacts of a maximum of 15 measures; impact analysis based on modelling and indicators; overall assessment (opportunities and risks).

#### Work Package 5: Case studies

Case studies will be selected; interviews will be conducted; evaluation and lessons learned

#### Work Package 6: Consequences and recommendations

Transport study recommendations; transport policy appraisal; final report.

This project will be completed in spring 2011.



#### 5.4 Information technology (IT) in the transport industry of the future (Project E)

The project will identify the fundamental requirements for a future IT infrastructure. The first priority is to develop and evaluate optimisation measures based on IT and a more effective use of the infrastructures and chains of operations. To this end, forecasts will be made concerning the infrastructure resources to be activated (potential capacities) and the investment and operating costs resulting for the parties directly or indirectly involved. In addition, it will be necessary to show, apart from the profit potential, the communication and information systems and the medium to long term infrastructure requirements covering all the means and types of transport for those who participate in the process of producing the services.

The methodology chosen is as follows:

##### Work Package 1 : Situation analysis

WP 1 will first identify the IT systems presently used and their functionalities, as well as the actors concerned and their requirements. In addition, it will be necessary to conduct studies of the literature and carry out field surveys. WP1 will also determine the current state of affairs in relation to application possibilities for IT-assisted optimisation and more efficient use of the infrastructures and process chains.

##### Work Package 2 : Determination of current trends

WP 2 will determine the current trends situation in relation to application possibilities for IT-assisted optimisation and more efficient use of the infrastructures and process chains. The core element of this work package is an analysis of the IT market with regard to future developments. To this end, it will be necessary to obtain input data in the form of the specialist literature and above all the market characteristics of the IT industry.

Work Package 3 and Work Package 4 will serve to determine the benefits and the potential for optimisation. The focus here will be the differentiated evaluation of the information obtained from WP 1 and WP 2.

##### Work Package 3: Needs and specific benefits

Here, the information obtained from WP 1 and WP 2 will serve to show the gaps between the current status of the IT systems and the desired objective, as well as to determine the needs of the actors and the specific benefits of the individual technologies.

##### Work Package 4: Optimisation potentials

WP 4 will investigate the optimisation potentials on the basis of infrastructure management, process chains and in-house factors. In order to identify optimisation potentials, it will be necessary to identify weak points and bottlenecks. In this respect, cooperation with industry partners like SBB Cargo or Migros would be useful.

##### Work Package 5: Monetary evaluation

A monetary evaluation of the optimisation potentials will be determined on the basis of the results of WP 3 (Benefits) and WP 4 (Optimisation potentials). In order to permit an assessment of the transport system as a whole, a cross-modal monetary evaluation will be conducted. One possible approach to the monetary evaluation for the optimisation

potential of the infrastructure is a valuation of every gain in time that can be achieved by the avoidance of bottlenecks.

#### Work Package 6: Elasticities

A determination of elasticities will be conducted on the basis of the results of WP 3 (Benefits) and WP 4 (Optimisation potentials).

#### Work Package 7: Migration strategy

Migration strategies will be investigated and determined on the basis of the results of the preceding work packages, taking into consideration the presently existing systems.

The outcome of the investigation of the requirements will be the description of a system architecture which reveals the interconnections between the different modes of transport. This must be free of any discrimination and harmonised with international developments.

This project will be completed in 2011.

#### 5.5 Requirements of goods transport logistics in relation to the infrastructure of the networks and the long-term development of these networks in Switzerland (Project C)

The task is to identify the requirements of goods transport expected in the medium and long term, having regard both to the capacities and functionalities of the road and rail networks, which will be compared with the current plans for the networks, identifying the critical areas and any functionalities that are lacking or inadequate. The project will assess the possible contributions of network development to the sustainable development of the Swiss economy. To this end, due attention must be paid to coordinating with network developments in the immediate neighbourhood of Switzerland. A description is expected of the way in which the Swiss transport networks should develop in relation both to capacities and to cost-sharing, taking into consideration the development of both goods transport and personal mobility.

Network development questions will always be tackled from the point of view both of goods transport and of passenger transport. Regional or opportunist policy arguments will be systematically avoided or dealt with separately.

This project will start in autumn 2010 and will be completed in summer 2012. Further information and partial results may be made available during the congress.

#### 5.6 Localised measures to limit the impact of goods transport (Project H)

The project will analyse emissions due to goods transport in order to establish the specific emissions for the relevant parts of the network on the basis of the means of transport, respectively the vehicles used. This will result in the establishment of environmental load profiles arising from goods transport ("national map of the goods transport environment in Switzerland"). The existing instruments to contain environmental loads caused by goods transport will be assessed in relation to their effectiveness. Other instruments will be proposed and the possibilities of their introduction will be fully clarified. The study must assess and indicate the instruments which are the most cost-efficient and provide the

greatest benefits both to the environment and to the population. These instruments must also be recognised and accepted by the economy. Within this framework, it will also be necessary to take into consideration both technological innovations and developments in norms and standards at the European level.

This project will start in autumn 2010 and will be completed in summer 2012. Further information and partial results may be made available during the congress.

#### 5.7 Influencing users and their points of view by means of regulation and integrated management concepts (Project F)

The task here is to show the effects of the information gained in projects D and E from the point of view of the actors involved in goods traffic. The project will identify the influence of the regulations and telematics systems on the different means of transport and the parties involved. Their influence on the process as a whole will be clarified by reference to each of the logistical procedures. The evaluation will be carried out for their characteristic time frames (trends). This analysis should clarify the requirements and the effects of the increasing overlaps between the transport telematics systems and the logistics systems. The project should make it possible to deduce control strategies for the introduction of integrated systems (acting on a number of modes) designed for the existing transport chains and to assess them from the point of view of an "overall optimum" based on the actors. In particular, the project will show the potential for increased efficiency for combined regulation and telematics measures. This project constitutes a synthesis of projects D and E from the point of view of the users of the infrastructures.

This project will start in autumn 2010 and will be completed in summer 2012. Further information and partial results may be made available during the congress.

#### 5.8 Potential for increasing the efficiency of the transport industry by integrated management instruments from the point of view of the infrastructure operators (Project G)

This project will serve to identify the possibilities and the effectiveness of the integrated management concepts intended to bring about efficient use of infrastructures within the context of Switzerland. The measures incorporated in the concepts may relate to regulation and to information technology or, more particularly, to a combination of the two. The management concepts will be oriented towards an optimum contribution in order to ensure a sustainable development of the Swiss economy. The corresponding concepts for utilisation will be drawn up and appropriate migration paths will be developed. This project constitutes a synthesis of projects D, E and F from the point of view of the infrastructure operators.

This project will start in autumn 2010 and will be completed in summer 2012. Further information and partial results may be made available during the congress.

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## 5.9 Transport of goods by delivery van (< 3.5 t) (Project B3)

This project will investigate specific aspects of the transport of goods by delivery van, a subject which has not been investigated in the course of past or current projects. In particular, the project will seek the following: to analyse and assess the role of delivery vans in transport logistics and in goods traffic, as well as the related developments over the past 20 years; to identify the development trends and influencing factors in logistics, as well as the transport policy framework conditions affecting the use of delivery vans in relation to traffic congestion, road safety and environmental impacts and to analyse and assess developments over the past 20 years; to identify the key problems and the need for action with regard to congestion, road safety and environmental impacts from the point of view of the infrastructure operators and the authorities; to propose strategic approaches and measures to solve the key problems and to present the implementation of the measures, bearing in mind the question of their acceptance. The results will form an important basis for assessing and adapting the framework conditions for the use of delivery vans.

This project will start in autumn 2010 and will be completed in summer 2012. Further information and partial results may be made available during the congress.

## 5.10 Specific logistics concepts per industrial sector and the generation of goods traffic, as well as the related trends (Project B2)

In view of increasing global competition and ever more intensive international business relations, many companies are restructuring their added value in Switzerland. This results in modified requirements with regard to production, (intermediate) storage, the preparation and completion of consignments and the transport of goods in various stages.

Against this backdrop, it is necessary to conduct an empirical examination of the specific logistics concepts per industry at the micro-economic level, by considering representative companies from the key industries which are particularly transport-intensive and the relevant spatial logistics clusters in Switzerland (in accordance with Project B1) with regard to their current organisation (status quo) and probable future organisation (trends).

On this basis, the project will show what specific effects are currently resulting and may be expected in the future with regard to the generation of goods traffic in Switzerland.

This project will start in autumn 2010 and will be completed in summer 2012.

## 6. PARTIAL RESULTS AND OUTLINE SUMMARY

Some promising partial results already known for projects B1 and E are presented below.

For the sub-project "Goods Traffic Flows", it is necessary to tackle the resulting overlaps of industries, goods and flows of materials. Depending on the classification system, the flows of goods may be apportioned, whether wholly or not at all, to the trading companies and to the refuse disposal and recycling businesses which form the last link in the chain. Accordingly, particular attention must be paid to the development of an appropriate conversion and apportionment coefficient.

Selection and definition of the key branches on the basis of quantity, value and services:  
 The selection and definition of the key industries is based on the available data at the level of the groups of goods. In addition, we analyse the annual transport quantities and services separately for rail and road transport. In road transport, it is possible to distinguish significant differences in the relative shares of the total transport volume based on quantity and capacity. This shows that stones, earth and building materials (blue) account for more than half of all transport in terms of quantity but for only 21% in terms of service. This suggests that these goods are characterised by relatively short transport distances.

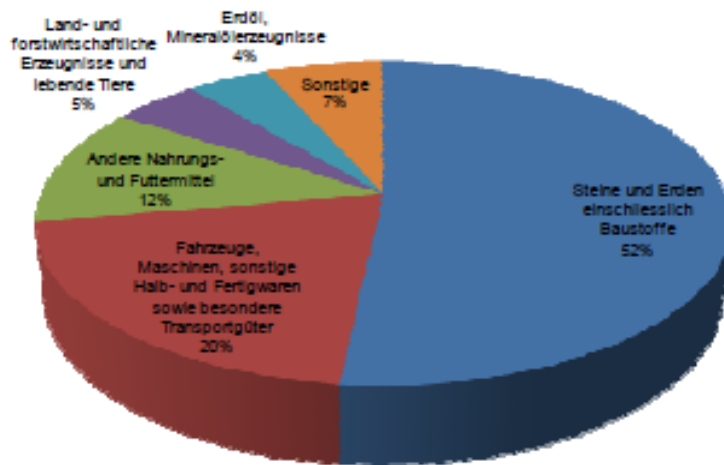


Figure 3: Relative shares of the most important groups of goods in terms of quantity (t) in road transport.

Consideration of the rail data shows a broader spectrum of goods. However, the separate analysis in terms of transport quantities and services reveals an extremely even distribution. This may be ascribed to the particularity of rail transport. As a rule, rail is used only for distances greater than 200 km. Thus, the transport service-related differences are much less significant than in road transport, which caters for both short and long distance transport.

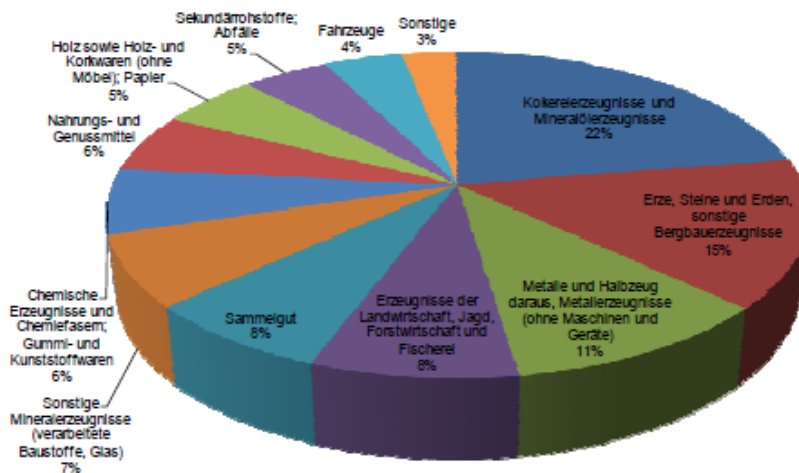


Figure 4: Relative shares of the most important groups of goods by weight carried (t) in rail transport

Based on the explanations with regard to the differentiation problem, six simple key industries and two cross-sectional industries were defined. The following industries were assigned to the primary and secondary sector:

- Chemicals and plastics processing
- Metallurgical industry
- Vehicles, machinery, electrical and precision engineering industry
- Building industry
- Food and beverage industry
- Oil industry

The following industries from the tertiary sector were defined as cross-sectional industries:

- Retail trade and wholesale trade
- Refuse disposal and recycling

The recoding of the data sets relating to the groups of goods covers approximately 95% of the total weight-related goods traffic volume, 90% of the transport service-related goods traffic volume and 90% of the value-related goods traffic volume on the road and on the railways. After the overall analysis on the basis of the groups of goods, it is necessary to transfer the data to the key industry-oriented consideration. To this end, a corresponding conversion table was drawn up within the framework of the project.

Interesting interim results have also been found for the sub-project "Information technologies in the future goods transport industry". It is possible for individual selected process chains to show, by way of example, what optimisation potential can be achieved with the help of the particular information technology applied.

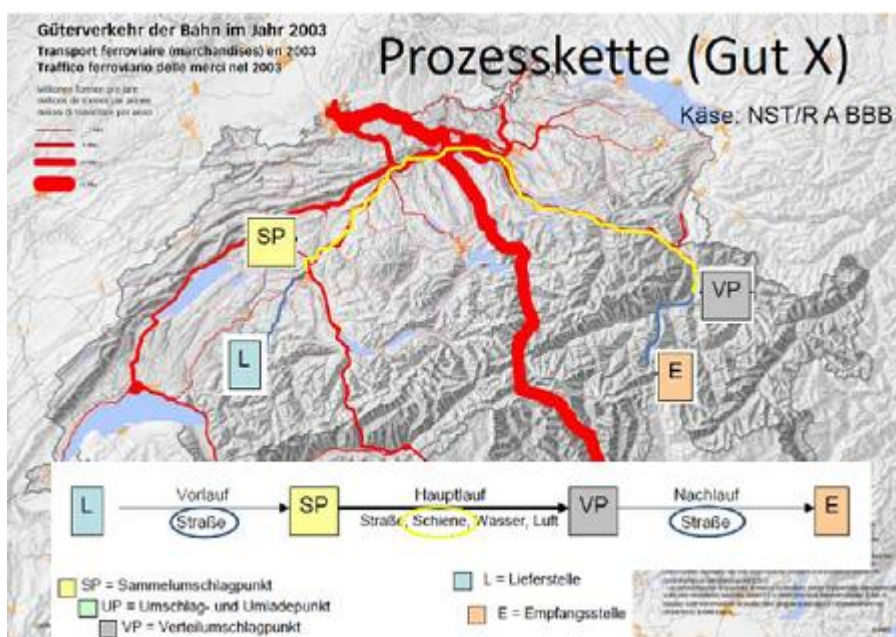


Figure 5

One such application example represents an imaginary process chain which consists of the generation, the transport and the consumption of a particular good X. The process chain can be divided into main processes, sub-processes and activities. On the basis of this breakdown, it is then possible to apply information technology at certain points in the process chain and put it into effect.

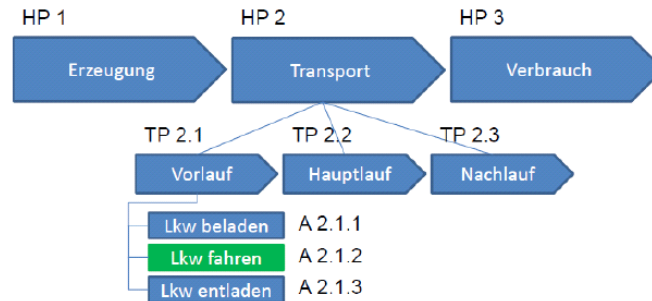


Figure 6

In order to show the potential arising from the deployment of information technology, a comparative calculation of transport times for the good X was carried out on the basis of information from the literature. This led to the following result:

Aktivität Nr.	Aktivität Name	Zeit ohne IT in [min]	Zeit mit IT in [min]	IT Potenzial in [min]	IT Potenzial in [%]
A 2.1.2	Lkw fahren	44	42	2	4,5
A 2.2.2	Zug fahren	184	160	24	13,0
A 2.3.2	Lkw fahren	31	30	1	3,2

Figure 7

As may be seen from the table, the deployment of information technology generates very appreciable optimisation potential in relation to specific process chains. At the same time, the deployment of information technology changes the original process chain as it speeds up the processes.

At this stage, we may hazard a tentative conclusion. The responses to the key questions formulated prior to the start of the projects (see resumé) may very well be obtained. The summary report due to appear at the end of 2012 will permit a better understanding of the criteria leading to the choice of mode by the logistics players. The evaluation of future needs (time horizons 2020 and 2030) and their effects will enable us to arrive a more precise planning and scaling of the complementary infrastructures needed to guarantee reliable goods transport. The choice of the right means of transport suited to the particular need will be guided by an optimal and responsible utilisation of the supply on offer.