

2007 Annual Report

The Year in 27 Chapters

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Our market is like wine: Not all years are of the same quality. If the measure of quality is the number and length of new railway lines, then 2007 deserves the label "excellent,,. A few examples:

■ **TGV East in France:** The newly built, 300 km line between Vaires and Baudrecourt has cut travel time between Paris and Strasbourg by 90 minutes to just two hours and 20 minutes. A number of other cities also benefit from the line, such as Zurich, with three daily direct trains. The fastest one reaches Paris in just four hours and 20 minutes.

■ **High Speed One and St. Pancras Station in the UK:** Travel times in the international Paris/Brussels/London triangle shrank to two hours and 15 minutes (Paris–London) and one hour and 51 minutes (Brussels–London). Those familiar with the waiting times and lines at the huge Heathrow and Charles de Gaulle airports are unlikely to even think of booking a flight between these cities again. Rail has become the undisputed market leader for passenger travel in the triangle.

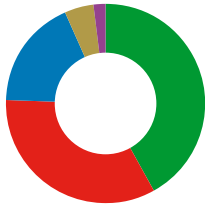
■ **Lötschberg base tunnel:** In the context of Switzerland's integrated, network-based rail service offering, a new rail line benefits services not just between a few points, but over the entire network. The opening of the first base tunnel through the Alps generally has cut travel times between central Switzerland and tourist centres in Valais by 60 to 90 minutes.

■ **Madrid–Valladolid und Antequera–Malaga AVE lines:** Spain is building a high-speed rail network with breathtaking speed. It will soon be Europe's largest. The two newly built lines that entered service in December 2007 each cut travel times by about 90 minutes. In Spain, where the main travel flows are between Madrid and large coastal cities some 500 to 650 km away, the AVE trains are capturing the lion's share of what used to be domestic air travel. This also promises financial success, for example on the line between Madrid and Barcelona, which had been the city pair with the heaviest air travel in Europe. In just a few weeks, RENFE had achieved a market share of over 40 %!

This list is certainly incomplete. As the quality of rail service rises, the general public, and particularly people who until now have driven or flown, are increasingly turning their attention to the current rail renaissance.

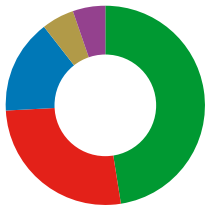
Signals are green in a number of countries. In Spain, France and Italy (and China, it should be noted), the building of new rail lines is continuing at high speed. Portugal, full of optimism, is striving to join this movement. In Switzerland, the parliament will soon consider an additional package of improvements called Future Development of the Rail Infrastructure (ZEB in German) costed at 5.2 billion Swiss francs along with a budget to plan the next generation of major projects.

Accompanying this favourable market environment directly related to our activities is a macroeconomic outlook that still seems robust despite the negative results of a few financial risk-takers and increasing energy costs. World trade is becoming ever more closely knit. As we bring more and more goods from the Far East in giant container ships to the docks of Europe's deep-sea ports, we have an ever-greater need for environmentally friendly and energy-efficient hinterland transport. This can again prove quite profitable for the railway sector.



- Germany
- Switzerland
- France
- Portugal
- Various

In 2007, we worked on a total of 153 assignments for 90 clients. The average fee per assignment was about 50,000 Swiss francs, with a classic distribution curve between a few big and many mid-sized and small assignments. In terms of client country, France and Germany dominated along with our Swiss home market.



- Transport operator outside Switzerland
- Swiss transport operators
- Public agencies outside Switzerland
- Swiss public agencies
- Private firms

Among clients and licence purchasers, we see a continuous trend of assignments (including licence orders) away from government agencies and toward transport operators. In 2003, half of our assignments were still from government agencies. Over the last five years, however, this share dropped to a quarter while turnover doubled. The fastest-growing client segment has thus been the transport operators.

The scope of the subject matter we work on broadens every year. The following chapters provide a concise overview of the year's largest projects.

3. Work with German Railway's intercity and regional passenger divisions



Punctuality is said to be a virtue of kings. In modern times – at least according to ads – every customer is king. He or she thus expects a high degree of punctuality from each transport operator. As a system, the railway has – compared with its road and air competitors – the greatest potential for better punctuality. But ensuring a timetable's punctual operation requires that a nearly endless variety of processes work continually and faultlessly. What are these processes?

They begin with an error-free timetable, followed by track, catenary, points, signals, interlocking systems, rolling stock and IT systems that must be continuously available and work without breakdowns. Standing behind these technologies are people who operate, keep watch and take corrective actions as needed, for the railway does not operate in a protected environment but is instead outdoors, exposed to wind and weather. The railway cannot control external factors, but merely protect against them. And finally, the railway serves its customers, who expect punctuality at all times. But the behaviour of some customers does less to foster punctuality than kings once did.

In 2007, we worked on this complex set of topics with several working groups of German Railway (Deutsche Bahn). This involved scientific investigations, economic analyses and many other contributions. The work combined knowledge within DB with a critical examination from outside. In this context, we organised two workshops at SMA in Zurich with both the client (DB) and employees of the Swiss Federal Railways (SBB) concerned with the same problems. This bringing together of experience and creativity contributed decisively to the optimisation of processes.

Our collaboration with the Munich metropolitan area rail network (S-Bahn) and the southern division of the German rail infrastructure operator DB Netz included in 2007

- development of the S-Bahn's emergency and contingency plans for the 2008 timetable year,
- design of the 2010 S-Bahn timetable with a new stop at Friedenheimer Brücke on the main line and
- further development of the service concept for the second main line with an underground East Station (Ostbahnhof).



By 2015, the number of freight trains (mainly container trains) from the German North Sea ports into the hinterland is expected to double. This is posing great challenges for a railway network that is already partially overloaded. A search is therefore on for operational and infrastructure measures that can bring significant benefits quickly and at low cost.

The first part of our task in this DB project was to determine the number of trains on all origin-destination pairs and, with the help of a "saturation,, timetable for the relevant lines and nodes, to analyse and determine whether the trains can run in 2015. As expected, this led to traffic overload for a few lines and nodes.

On the basis of this capacity analysis, we then developed ideas to remove or mitigate infrastructure bottlenecks. About 75 such measures were identified throughout Germany. They range from measures that can be taken immediately, such as re-routings, and new construction that could be considered in the mid-term, such as replacement of flat junctions with flyovers, all the way to long-term projects such as building new lines or electrifying alternative routes.



The department for methodologies in railway operations management at DB Netz has given itself the objective of re-designing the mid-term planning process for timetable and network development, including the required IT tools. This task is truly hand-tailored for us, because it requires both technical railway knowledge and solid competence in information technology. In 2007, two sub-projects were ready to start: The development of a timetable for the whole of Germany for the 2015 planning horizon and the design of interfaces between Viriato (which is used in the development of the timetable) and downstream tools for the detailed examination of bottlenecks and large nodes. Work on these tasks is continuing in 2008.

In Germany, a number of train operators provide regional passenger services under contract to public agencies, who select the operators by competitive bidding. SMA worked with a number of these agencies in 2007.

Contracting agencies in North Rhine-Westphalia

The German state of North Rhine-Westphalia (NRW) launched a comprehensive fixed-interval timetable in December 2002. The timetable is now in its second phase and sixth year. External factors, such as the granting of contracts for specific lines and sub-networks, or infrastructure extensions, have required ongoing changes in details of the timetable without changing its general structure. Again in 2007, we thus continued to actively accompany the timetable's further development, for example for S-Bahn extensions in the Cologne area. In addition, partly in consortium work with DB Netz, we planned optimisation possibilities for several networks that operate under contract. Another main task was advising the NRW Ministry of Construction and Transport on the definition of a state-wide network of fast regional trains.

Contracting agencies in Bavaria and Baden-Württemberg

Switzerland is supporting the electrification of the Lindau–Memmingen–Geltendorf section of the route from St. Gallen to Munich. Starting with the 2016 timetable, this improvement will allow optimisation of the timetable concept in the Allgäu region. Also, Baden-Württemberg is planning to electrify the Ulm–Friedrichshafen–Lindau line. In a project for the Bavarian Railway Agency (BEG) and the Baden-Württemberg Regional Transport Agency (NVBW), SMA developed an interstate service concept that takes full advantage of the new possibilities that electrification offers. In addition to shorter regional travel times, connections in major stations are being optimised to reduce travel times to and from other points on the network.

Contracting agencies in Hesse and Rhineland-Palatinate

For a number of years, SMA has been preparing, for the Rhein-Main Transport Agency (RMV), the technical basis of the timetables for the sub-networks on which train operators then bid. In this process, in work with DB Netz, all paths for each day of the week and seat capacity are determined and fixed, the number of vehicles determined on the basis of a complete rotation plan and the stabling tracks checked. In 2007, SMA did this work for two sub-networks in collaboration with the contracting agencies SPNV-Nord and VRN of Rhineland-Palatinate.

In 2007, SMA also carried out a study covering the entire RMV territory on the definition of sub-networks. Its results led to an optimisation of the sub-networks concerning lines to be managed together and the size of sub-networks put out to bid.

7. Introduction and further development of a fixed-interval timetable in France (project "Structuration,,)



The project "Structuration,, stands for the development of a fixed-interval timetable path catalogue for France. The project is led by the French rail infrastructure operator Réseau Ferré de France (RFF), accompanied by the French National Railways (SNCF) and the French administrative regions, who are responsible for the TER regional passenger trains. SMA supports RFF in all work phases of timetable development.

The central focus of our work in 2007 was finishing the timetable that took effect in December 2007. This timetable change included all TGV trains in the entire southeast sector of France, i.e. the Paris-Lyon-Marseille high-speed line and all its branches and the introduction of a fixed-interval timetable for the Rhône-Alpes region, including the Lyon metropolitan area, and the southern part of the Burgundy region.

The introduction of the fixed-interval timetable in Rhône-Alpes is the first step toward an improved service offering. This timetable does not, however, exist in isolation from the rest of the French network and thus is strongly influenced by various exceptions, local constraints and SNCF's marketing goals. It nevertheless represents a small revolution in French rail passenger service.

The timetable change of December 2008 will further extend the fixed-interval timetable based on the first phase. It will involve the Provence-Alpes-Côte d'Azur (PACA) region and the area between Paris and the Burgundy region. A fixed-interval timetable will also start in the Haute- and Basse-Normandie regions and will comprise intercity, freight and regional trains and some Paris suburban services.

For the mid-term, with an eye on the timetable changes in December 2009 to 2011, planning studies are continuing for comprehensive introduction of the fixed-interval timetable, particularly in northern France, with studies for services in regional and freight rail and on the TGV North line.

8. Assistance for the introduction of the "Rail Plan": Renewal and development of the rail infrastructure in the Midi-Pyrénées administrative region



A 2005 audit by Professor Robert Rivier of the Swiss Federal Institute of Technology in Lausanne revealed an alarming state of excessive aging in the conventional French rail infrastructure (as opposed to the modern TGV lines opened since 1981).

On the basis of this finding, the Midi-Pyrénées administrative region gave a group of Swiss experts under the direction of SMA the task of carrying out a detailed analysis of the regional rail network in order to evaluate the mid- and long-term development of its condition and characteristics. The results showed that because of inadequate maintenance and financial resources, all regional lines in Midi-Pyrénées would have to be closed by 2020.

This alarming finding led the region to invest €500 million and, together with RFF, SNCF and the French central government, to launch the Rail Plan. This plan is an innovation in the French rail sector and has been endowed with €850 million. These funds will be used to renew the aging infrastructure (track, civil engineering works, signalling and catenary) and raise network capacity.

In 2007, we received the follow-up assignment to support the region in evaluating the coherence of the proposals and the detailed planning of RFF and SNCF's work. The goal is to minimize the time to operational launch and simultaneously put new infrastructure elements into operation as soon as each work phase is completed.

The volume of work required for the modernisation of the entire regional network is comparable to that for a new rail line built from scratch. The project should be completed by 2011.

9. Mid- and long-term development of France's railway infrastructure



In assignments from RFF, we carried out several studies for long-term timetable planning and infrastructure optimisation.

In a study of capacity and operations within the Strasbourg node, we developed proposals for infrastructure development between 2013 and 2020. Adaptations are necessary because of expected ridership growth in the coming decades, largely due to the launch of operations on the second section of the new TGV East line. The proposed measures represent investments of €180 million. Additional studies will now follow in southern Alsace within the Mulhouse node and on selected lines, such as the tram-train system between Strasbourg and Molsheim and the line to Haguenau.

An additional planning study examined the Normandy administrative region and the approach lines to St. Lazare station in Paris. In these studies, proposals for optimised network improvements were developed in order to improve rail services to the Paris suburbs and within the Rouen railway node.

Finally, we conducted an analysis of rail infrastructure development on the Marseilles–Toulon–Hyères line in the context of adding a third track in the Marseilles area. The results showed that running suburban trains on their own track and intercity traffic on double track would yield the best results in terms of operations and service offerings.



In 2007, we carried out studies on service offerings and operations for several "private," Swiss railways (smaller railways independent of the Swiss Federal Railways):

- Bern-Solothurn Regional Transport (RBS):
Development strategy and operational simulation (in progress).
- Wynen- und Suhrental Railway (WSB):
Development strategy, evaluation of the 2009–2010 timetable concept and operational simulation.
- Sihltal-Zürich–Uetliberg Railway (SZU): Operational simulation (together with the company OpenTrack Railway Technology).
- Bremgarten–Dietikon–Wohlen–Meisterschwanden Railway Transport (BDWM): Study for the 2020 service offering (together with Cicerone Performance).

These clients asked questions in a wide variety of areas: planned timetable changes, purchase of new rolling stock or new signalling. In all cases, the objective was to optimise the triangle formed by rolling stock, infrastructure enhancement and operations. All studies required using Viriato and OpenTrack as appropriate for the different levels of analysis. Particularly interesting and new was the project with the BDWM, in which we worked directly with Siemens (Switzerland) to optimise new signalling.

11. Consultation on the Federal Council's master plan for public transport financing



In early 2007, the Swiss Federal Council began a consultation with Swiss cantons and trade associations on what is essentially a master plan for the financing of public transport projects. An important element of this plan is the further development of rail service after the first phase of Rail 2000. Under the title Future Development of the Rail Infrastructure (ZEB), the Swiss federal government is proposing a concept entailing investments of about 5 billion Swiss francs that will shorten travel on the east-west corridor between Geneva and St. Gallen by about a half hour. The Conference of Cantonal Public Transport Directors (KöV in German) asked us for expert support in communicating their response to the Federal Council. Among other things, this task involved presenting technical aspects in a way that would earn the support of all cantons for KöV's response.

At the end of 2007, the municipal engineers of the central and eastern Swiss cities called on us to help write a similar position document. They requested a watertight set of arguments in support of the political demands for upgrades of the Zug–Zurich and Winterthur–Zurich corridors. These arguments were to place the urgency of these upgrades in the context of the economic development of the Zurich metropolitan area. An important part of this task was to convince stakeholders that what needs support is not construction projects, but an adequate service offering in terms of the number of rush-hour trains and seats.



In Portugal, the planning and projects for the Lisbon–Porto and Lisbon–Madrid high-speed lines continued throughout 2007. These projects involve estimated total investment spending of more than 7 billion Swiss francs over the next 10 years. For political reasons, the opening dates have been fixed, which means that infrastructure and project planning must be carried out at a speed that to us seems adventurous.

On our advice, an informal monthly workshop has been instituted in which all those working on one of the many sub-projects – from staff members to decision-makers on the administrative board – take part. This shortens information paths, but demands a great deal of flexibility from all participants.

Just a few years ago, it was assumed that the high-speed system would be built entirely new, i.e. with new stations in Lisbon and Porto and even new en-route stations far from population centres. The plan was to use the normal European gauge of 1435 mm instead of the 1668 mm gauge usual on the Iberian Peninsula. People are slowly starting to understand that (1) such a solution would be much too expensive and (2) without a functioning feeder network, it would not even work. Technical solutions were thus found for the placement of additional tracks for high-speed trains in the existing stations in Lisbon, Coimbra and Porto. In all three cases, this is only possible when some of the broad-gauge station tracks can be converted to high-speed tracks. This led immediately to the question of how many high-speed and how many Iberian broad-gauge tracks for conventional rail traffic were needed. Answering this last question required full-blown master plans for both principal regions. What began as the planning for a new rail line thus became the development of a long-term, nationwide plan comparable to that for Rail 2000 in Switzerland, even if Portugal runs fewer trains. The required levels of investment are nevertheless comparable.

The planning work in Portugal revealed just how difficult railway infrastructure is to plan when the train operating companies are not included in the planning process, but rather are determined later, in a competitive bidding process. It is still too early to judge the efficiency of this approach for the economy as a whole.

13. SBB's Running Time Calculator



At the start of 2007, it was possible to complete the large Running Time Calculator project (ZLR in German) and introduce ZLR as an IT product within SBB on schedule. ZLR is becoming ever more established in its role as a central connector between SBB's future timetable-planning and dispatching systems.

To this end, in 2007 we extended the ZLR rolling stock database, which mainly serves as the basis for running time calculations, to make it an SBB vehicle type management system that operates across systems and divisions and in which all vehicle attributes relevant for planning are input and kept up to date.

In 2007, the ZLR project provided a way of solving the long-time problem at SBB of providing central corporate upkeep of data on speed limit zones, which is essential for accurate running time calculations.

In our work on ZLR, we were able to directly build on the experience that we had acquired in the earlier projects RADN (a system for administration of speed limits) and UNO (a database of the rail network's topology).



The goal of SBB's PULS 90 project is to allow further densification of the timetable without disruptive and costly infrastructure changes by means of a new planning and operational concept. An important component PULS 90 is the concept of developing and operating the timetable to the nearest second, which requires new IT solutions.

SMA developed the central software package "Pulsplattform", which enables both the timetable planner and the dispatcher to re-plan or modify paths in a graphical user interface adapted to the PULS 90 concept. Also available is a function to automatically re-plan paths for conflict resolution.

In 2007, we developed the offline mode of Pulsplattform to allow its use in planning paths before actual operation. The project is continuing in 2008 with the objective of using Pulsplattform in a pilot project for real-time operations control.



In 2007, the DB passenger division (DB Personenverkehr) asked us to develop a wide-ranging set of extensions and additional functions:

- *Path price modul*: This external module for the calculation of path fees directly accesses the business logic components of Viriato that arose from its redesign.
- *Extensions and adaptations in the network path portal (TPN in German)*: Viriato must be continually adapted to the constantly changing requirements and rules of TPN.
- *Functional extensions and improvements*: Due to changing processes that brought new requirements, we had to implement new functions in Viriato. Numerous suggestions for improvement from users were implemented and thus enhanced user friendliness.
- *Business-side concepts for functional extensions*: For larger functional extensions, business concepts were developed together with business groups that form the basis for implementation in future extension packages.
- *Migration onto an Oracle database*: In 2007, the DB intercity passenger division migrated Viriato onto an Oracle database. In addition to providing consulting services as part of this migration, additional tools to support business-side rail operations management had to be developed, such as a program to update DB's infrastructure master data, which changes almost weekly.

In 2007, for the third time, the DB passenger division requested all of its roughly 32,000 passenger trains directly out of Viriato via the path portal to DB Netz, then received them as available paths and reimported them to Viriato again. Overall, Viriato saw confirmation of its position as a central planning tool within the DB passenger division.

A big step was also taken toward the use of Viriato at DB Netz. In the department for methodologies in railway operations management, Viriato is part of the new concept for the IT-supported planning process (see also Chapter 5).



In Finland, the Finnish Rail Administration RHK is responsible as supervisory agency for path management. In order to fulfil this duty, RHK initiated development of the software solution LIIKE, which will reflect the entire workflow of the path allocation process.

In the future, the core task of developing paths will be carried out with Viriato. In addition to the delivery of Viriato licences and the creation of interfaces to LIIKE based on the RailML standard, SMA is also providing consulting services in the LIIKE project. SMA is able to bring in its experience, particularly in the design of DB's path portal TPN. The project, which began with joint workshops in the last quarter of 2007, is expected to run until mid-2009.

17. Viriato development and releases

In 2007, intensive efforts to improve Viriato's underlying code continued. These efforts focussed primarily on a new implementation of the train window, whose functional breadth is estimated to account for some 25 % of Viriato's complexity.

The work on the train window has led to increased efficiency in the execution of extension projects and to a long-term improvement of stability. Thanks to the detachment of the business logic into a separate component, we are able to develop "thin,,, client-specific requests for detailed outputs with relatively small effort. In this way, it was possible for example to develop a module for DB for path price calculation and a line-specific analysis for SBB for train counts by product and time of day.

18. Viriato licences

The number of Viriato licences continued to rise in 2007. New members of the Viriato users' group include a transport operator, a regional transport agency and two private planning firms.

The granting of heavily discounted academic licences allows Viriato to become known among future planners and engineers. In 2007, four universities obtained academic Viriato licences.

In addition, a number of Viriato clients have added licences or extended them with additional modules. The total licence count also includes those for the Oracle version of Viriato introduced at the DB intercity passenger division.

19. Viriato training programs

The growing number of Viriato users also increases the need for comprehensive introductory training in this planning system. In 2007, the instructor team introduced users to Viriato in Austria, France, Germany and Switzerland. A three-day training program was held for Pöyry Infra AG in Maracaibo, Venezuela.

In addition to its core business, SMA places great value on the promotion of innovative methods in transport planning. Main areas of focus are the analysis of timetables and aids that allow the user to easily display and visualise the consequences of timetable changes. In 2007, we carried out three development projects in this area:

- The Netvisio application for the visual communication of the effects of timetable changes.
- For the analysis of changes in demand, a simplified approach for the estimation of potential demand changes.
- In the area of timetable stability analysis, two pilot projects with the program MakSi in collaboration with the university RWTH Aachen.

Netvisio

One of the tasks of railway planning is the fast and simple communication of complex operational information. Schematic maps are excellent for this purpose. The observer is generally familiar with geographic features and thus can quickly analyse and evaluate data displayed geographically.

Until now, the production of such maps required much effort. The user had to manually translate railway-specific data into graphic elements. To present variants or scenarios, the user had to start map production again from scratch.

With Netvisio, we have developed an application for the presentation of schematic maps. Netvisio allows the user to concentrate on the management of the operational data. The graphical interpretation and display of the data can be configured and is fully automated.

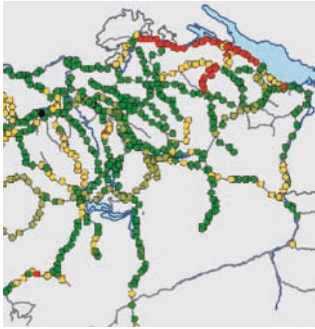
SBB uses Netvisio in its strategic network planning to illustrate variants in compact form. SMA has been using Netvisio in various projects in which the program has proved to be an excellent way to present heterogeneous operational data in a harmonised form.

Estimation of potential demand

In evaluating timetables, another question that always arises is how a time-table's costs relate to its benefits. In the realm of costs, Viriato can be used to determine the key indicators that are the essential determinants of cost: the annual number of train kilometres and the required rolling-stock rotations. Evaluating a timetable's benefits, however, until now required large-scale, time-consuming demand modelling.

The method we have developed permits determination of the relative change in passenger counts between two timetable scenarios. Eduard Lill's "law of travel,,," which is frequently applied in transport planning, provides the conceptual basis for the model. On the basis of a Viriato Netgraph, the separate Viriato module "Travel time analysis,,," calculates travel times and other measures relevant to demand. A geographic information system (GIS) is also necessary to determine the weighting of the stations on the basis of spatial, structural data such as the geographic distribution of the population's homes and jobs. The result of these two steps is a calculation of potential demand and thus a prognosis of passenger growth.

MakSi



As a result of the increasing loads on the railway network, planners are ever more often confronted with the question of how new service offerings will affect the stability and quality of a timetable. The methodology MakSi (macro-simulation) uses a method from the university RWTH Aachen based on probability theory. Initial experience with MakSi in an internal pilot concerning the Munich S-Bahn was promising. We thus proposed to the path management department of SBB to check the new annual timetable for 2008 for possible weak points by means of a macro-simulation.

In this project, MakSi demonstrated its suitability for such evaluations. We were able to demonstrate that, despite more trains, the punctuality indicators were slightly better than those of the 2007 timetable. On the basis of the positive experience with this pilot application, the SBB is showing interest in continuing to use the tool for such studies in the future.

In 2007, SMA reorganised its marketing activities and created the position of Marketing Director. In this way, we gathered together the marketing work that had previously been spread over a number of people, who all too often were preoccupied with more urgent project work.

To win new clients in Scandinavia, we participated in Nordic Rail in Jönköping, Sweden. This trade show yielded initial meetings with representatives of the Swedish infrastructure operator Banverket and with the train operator SJ. In the meantime, our contacts with Banverket have become more substantial and we expect a first assignment in mid-2008.

The Indian and Chinese railway markets are among the biggest worldwide in terms of size and current growth rate. We hope one day to participate in these markets. We conducted initial talks with potential partners in India and Switzerland. A continuation and deepening of these partnerships is foreseen in 2008.

In 2007, we also did most of the preparatory work for the fifth Viriato user conference, IT08.rail. Thanks to our cooperation partners (Swiss Federal Institute of Technology Zurich and, for the first time, systransis AG and OpenTrack Railway Technology GmbH) and our media partners, over 350 people registered.

As always, we took advantage of a number of conferences and events to introduce ourselves and present our services.

Presentations and participation at conferences and trade fairs in 2007:

05 June 2007	Darmstadt Germany	Presentation on the topic "Development of the comprehensive fixed-interval timetable: origins–current state–future,, at the Technical Railway Colloquium of Darmstadt Technical University
22 Aug. 2007	Zurich	The RegioTram in Kassel for railway representatives from Lithuania
31 Aug. 2007	Zurich	"The Swiss railway network, a metropolitan network?,,, part of a US delegation's "Study Trip on Public Transportation and Mobility to Switzerland,,
26 Sept. 2007	Zurich	"From railway to ship–from ship to railway,, (presentation during the autumn meeting of the tariff association for North Sea island transport)
26 Sept. 2007	Dresden Germany	"Application areas for automatic timetable generation,,, part of a colloquium on "Automatic generation of timetables,, run by DB Netz and Dresden Technical University (TU)
05 Oct. 2007	Pardubice Czech Rep.	"Market-oriented railway timetabling. The past, the present and the future perspectives,, – presentation at Pardubice TU
09-11 Oct. 2007	Jönköping Sweden	Stand at the Nordic Rail trade fair
23 Oct. 2007	Lausanne	"The urban project,, of the Chôros laboratory at the Swiss Federal Institute of Technology, Lausanne
26 Nov. 2007	Lyon France	Presentation on "Fixed-interval timetabling in railway operations,, at the National University of Public Works (Ecole Nationale des Travaux Publics), Lyon

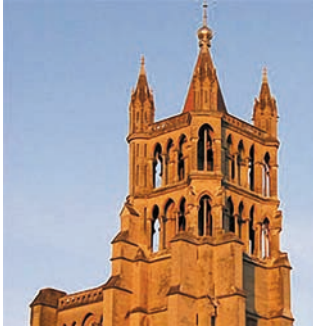
Publications:

Periodical/Issue	Title
ETR 11/2007	Management of operational disturbances on the Munich S-Bahn and proposals for infrastructure enhancements (in German)
La Vie du Rail, Edition Internationale 5	SMA, the master artisans of the new fixed-interval timetable (in French)
Schweizer Eisenbahn Revue 12/2007	2008 timetable offerings and travel times in Switzerland (in German)
Schweizer Eisenbahn Revue 12/2007	2008 Swiss network timetable map

The internal information publication WochenNews has been appearing weekly since 2007.

Thanks to a number of press articles on company news and on new projects and services, SMA was regularly cited in various editions of the trade press.

For the 20th anniversary of SMA's founding, we published an external annual report for the first time and disseminated it widely.



Speakers of the French language – including both employees and clients from this linguistic region – established themselves very early at SMA. But many years of experience have also shown that French-speaking employees and their families often find it difficult to put down long-term roots in Zurich.

For quite some time, there had thus been a latent desire to open an office in French-speaking Switzerland. But this possibility could only be brought to life by employees willing to accept the challenge. This is what happened in 2007.

The rented office space in Lausanne is right next to the station and can accommodate seven employees. We were mostly able to decide on the arrangement of the interior ourselves: the result is trim and functional, like our offices in Zurich.

A change of tenants in Gubelstrasse 28 in Zurich gave us the opportunity to lease an extra half floor in the same building. This let us add a conference room big enough for all employees at once. The new area also contains a server room, library and reserve office space for the expected additional employees.

23. Personnel and their professional training

In 2007, our team grew further and comprised 37 permanent employees at year's end. Four employees left, whereas eight were hired. All 37 permanent employees hold or will soon hold a university degree. Sixteen people work less than full-time. The new hires in 2007 were:

01 Jan. 2007	Olivier Allemann Economics degree, University of Zurich	Assistent to Senior Management
01 Jan. 2007	Carole Raynard Engineering degree, Lyon Business School (Ecole de Commerce) and Berlin Technical University	Planning
01 Jan. 2007	Alexander Schaeffer Engineering degree, Berlin Technical University	Director of Marketing
15 Aug. 2007	Pierre Robyr PhD, Swiss Federal Institute of Technology, Zurich	IT Project Manager
01 Sept. 2007	Matthias Cavigelli Engineering degree, Swiss Federal Institute of Technology, Zurich	Software development
01 Sept. 2007	Stefano Regazzoni Engineering degree, Swiss Federal Institute of Technology, Lausanne	Planning
01 Sept. 2007	Lukas Regli Engineering degree, Swiss Federal Institute of Technology, Zurich	Planning
01 Jan. – 31. Dec. 2007	Martin Gämperle	Software development

Interns have always been welcome at SMA. They learn hands-on how to plan public transport, experience the difference between the academic and private business environments, work on a topic in an internship project and often enrich us with their linguistic and cultural backgrounds. In summer 2007, up to four interns were present at once. In the course of 2007, they were Felix Bode, Jens Böhmer, Ulrich Leister and Florian Zumklei (Germany), Roxana Horincar (Romania), Boris Jäggi and Andreas Krättli (Switzerland) and Youssef Ben Joud (Tunisia).

Professional training is as important for our field as ongoing vitamin intake is for the human body. Much of this training takes the form of daily "learning by doing". Our tasks have so many different aspects that the learning material on our field never runs out. But employees also need all sorts of additional cultural, communication and scientific skills. Despite constant deadline pressure from clients, we try to keep the objective of professional training in mind.

Employee list 2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Permanent employee												
Werner Stohler												
Hansruedi Akermann												
Georges Rey												
Hans Ruedi Rihs												
Giuliano Montanaro												
Bernhard Seybold												
Olivier Allemann												
Andreas Berchtold												
Thomas Bickel												
Gina Brucker												
Dan Burkolter												
Matthias Cavigelli												
Eric Cosandey												
Burkhard Franke												
Michael Frei												
Martin Gämperle												
Björn Glaus												
Peter Göldi												
Christian Grosse-Wilde												
Rebekka Hofmann												
Pascal Joris												
Patricia Kottmann												
Marten Maier												
Gabriele Neyer												
Gösta Niedderer												
Philipp Schröder												
Carole Raynard												
Stefano Regazzoni												
Lukas Regli												
Corelia Reichen												
Reto Hunziker												
Pierre Robyr												
Frederik Ropelius												
Joachim Rubröder												
Alexander Schaeffer												
Robert Simons												
Seta Sophanna												
Luigi Stähli												
Claudia Wirz												
Intern												
Andreas Krättli												
Boris Jäggi												
Roxana Horincar												
Ulrich Leister												
Jens Böhmer												
Youssef Ben Joud												
Felix Bode												
Florian Zumklei												

An important part of our daily work is communication, be it within the company or with our clients. Under the leadership of a professional instructor, in early 2007 a first group completed the course "Communication,, for the further development of soft skills. A second group followed in September.

We continued to pursue this subject area in autumn 2007 with another series of courses on the topic of "Dialectics,,. The first two groups refined their communication and argumentation skills on Zurich's Üetliberg mountaintop.

In early 2007, we were able to invite Professor Ekkehard Wendler of RWTH Aachen and his associates for an intensive, two-day seminar. He imparted his profound and systematic knowledge of railway operations, particularly concerning rail infrastructure capacity. The event also provided a welcome opportunity for each group to familiarise themselves with the other group's IT tools.



SMA does not need an anniversary year to organise a whole series of events outside the workplace. The calendar year traditionally begins with a ski weekend, which in 2007 took place in Laax.

The closing dinner of the shareholders' meeting was combined with an circular evening trip on the MS Zug on her namesake lake. The occasion for this outing was our work with the Zug area transport agency (ZVB), who also oversees the lake ship service. ZVB was one of SMA's very first clients, and has long been having us process the distribution of ticket revenues among the transport operators participating in Zug's tariff community.

The traditional study trip took us in 2007 to the Netherlands for the first time, and was organised with the help of friends we had met during the Thalys study of 2006. The wide-ranging program included technical tours and discussions on specific topics with representatives of the infrastructure operator ProRail, Dutch train operator NS and The Hague area train operator HTM. These were complemented by an architectural tour of Rotterdam (on bicycle or foot) and a tour of the Kröller-Müller Museum and its masterpieces of Dutch and international painting and sculpture.

Then on September 22–23 come the autumn hike in the Simplon area with an overnight stay in Gondo, in the rebuilt Stockalper Sust, or former transit warehouse from the age before the railway was built. The hikers split themselves into three ability classes (depending on the number of meters of altitude to be climbed and descended). Everyone arrived in good shape at the meeting point. In the following days, there were only a few sighs due to sore muscles from lack of conditioning or slight overestimates of strength! The memories are all good in any case.

Two pre-dinner gatherings in the office rounded out the social events: The first, in which many former employees also took part, was on October 1, the exact birthday of SMA. The second one was a Christmas party to close out the eventful anniversary year.

25. Corporate structuring project

In the course of spring 2007, it became clear that working out all the legal, financial, organisational and human-resource questions connected with the restructuring of the company and the drafting of a long-term succession plan was more than our internal resources could handle.

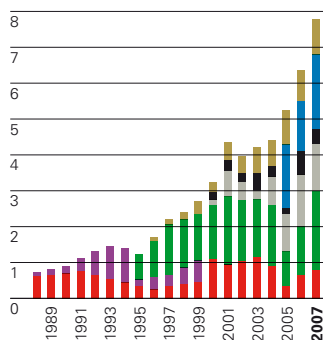
For this reason, Peter Weber, member of the administrative board, took over as project manager and selected a team of consultants to support us in this task. The assignment was given to the firm Santis, which began its work in the autumn. The bulk of the work will be carried out in 2008.

As in 2006, SMA was in excellent financial shape. This reflected not just the results of 2007, but also the financial and management policies of the previous years. These policies bore the mark of the factors that are indispensable for the growth of a company: an extremely lean organisation, modesty concerning our personal entitlements, investment of earnings in future-oriented projects and research work, and conservative handling of money without yielding to the temptation of higher returns.

	2007	2006
Key indicators (millions of CHF)		
Turnover	7,79	6,56
Subcontractors & third parties	0,61	0,76
Net turnover	7,12	5,80

	2007	2006
Distribution of hours (in %)		
Projects	61,2	62,8
Tenders	2,2	2,5
Software maintenance & sales	5,8	9,0
R & D and professional training	15,9	12,9
Administration	14,9	12,8

millions of CHF



The growth rate was 18 % concerning gross turnover, and 23 % for net fee turnover. Turnover per employee once again rose slightly, largely due to the revenue from licence sales and maintenance fees, in other words due to investments we made many years earlier. The development of turnover continues to show an upward trend. It is increasingly limited, however, by the ever more difficult recruitment of qualified employees in years when the economy is strong.

In recent years, the company has grown at double-digit rates, year after year. Over the last five years, headcount and turnover have doubled. After 20 years, the founding and pioneer years are over. The projects we have described in this report will put us in a position to find and implement an organisational structure that is appropriate for our size.

But organisational changes should not and must not affect our clients. Project work will continue unhindered. The new year promises fascinating assignments, events and challenges in ever-more-distant countries.

All this is only possible because all our employees enthusiastically stand behind an overriding, central idea: to help energy-saving and environmentally sound public transport achieve greater efficiency, attractiveness and success. Every project that succeeds and is also accepted by the public provides us with great satisfaction, whether our contribution was big or small.

The company thanks its clients for their trust, which often reflects many years of work together, and its employees for the diligent and ongoing efforts that guarantee we will continue into a successful future.

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