



Information Society
Technologies

erpastudies

**s c h w e i z e r i s c h e
d e p e s c h e n a g e n t u r
(s d a)**



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Executive Summary

The Swiss News Agency sda is the leading news agency in Switzerland and the only one that provides a basic service in German, French, and Italian. With some 250 employees it reaches a yearly turnover of thirty million CHF.

The sda produces some 1,000 news items per day. The Agency has worked in a digital environment since the Sixties, however it is only since 1983 that every item that is dispatched to sda's customers simultaneously enters the agency's new archive, a BRS/Search database. Since 1983, this archive has grown to contain some four million items and has reached a size of 22 GB. The archive's main use is to serve as a knowledgebase for the editorial staff within the sda, while at the same time access to the archive is sold to external customers. The focus is therefore on quick and reliable access. Full-text search capabilities are crucial to this, although descriptive metadata support resource discovery.

It is beneficial to the sda that their archived news items are in a 'simpler' format for preservation (text-only format) and amount to an inconsiderably data size. The news archive is kept on hard disks, with two mirrors on-site, an external backup, and further copies at external knowledgebase portals, whereby data security is maximised.

Chapter 1: The ERPANET Project

The European Commission and Swiss Confederation funded ERPANET Project¹ (Electronic Resource Preservation and Access Network) works to enhance the preservation of cultural and scientific digital objects through raising awareness, providing access to experience, sharing policies and strategies, and improving practices. To achieve these goals ERPANET is building an active community of members and actors, bringing together memory organisations (museums, libraries and archives), ICT and software industry, research institutions, government organisations, entertainment and creative industries, and commercial sectors. ERPANET constructs authoritative information resources on state-of-the-art developments in digital preservation, promotes training, and provides advice and tools.

ERPANET consists of four partners and is directed by a management committee, namely Seamus Ross (HATII, University of Glasgow; principal director), Niklaus Bütikofer (Schweizerisches Bundesarchiv), Hans Hofman (Nationaal Archief/National Archives of the Netherlands), and Maria Guercio (ISTBAL, University of Urbino). At each of these nodes a content editor supports their work, and Peter McKinney serves as a co-coordinator to the project. An Advisory Committee with experts from various organisations, institutions, and companies from all over Europe give advice and support to ERPANET.

¹ ERPANET is a European Commission funded project (IST-2001-32706). See www.ermanet.org for more details and available products.

Chapter 2: Scope of the Case Studies

While theoretical discussions on best practice call for urgent action to ensure the survival of digital information, it is organisations and institutions that are leading the drive to establish effective digital preservation strategies. In order to understand the processes these organisations are undertaking, ERPANET is conducting a series of case studies in the area of digital preservation. In total, sixty case studies, each of varying size, will investigate awareness, strategies, and technologies used in an array of organisations. The resulting corpus should make a substantial contribution to our knowledge of practice in digital preservation, and form the foundation for theory building and the development of methodological tools. The value of these case studies will come not only from the breadth of companies and institutions included, but also through the depth at which they will explore the issues.

ERPANET is deliberately and systematically approaching disparate companies and institutions from industry and business to facilitate discussion in areas that have traditionally been unconnected. With these case studies ERPANET will broaden the scope and understanding of digital preservation through research and discussion. The case studies will be published to improve the approaches and solutions being developed and to reduce the redundancy of effort. The interviews are identifying current practice not only in-depth within specific sectors, but also cross-sectorally: what can the publishing sector learn from the aeronautical sector? Eventually we aim to use this comparative data to produce intra-sectoral overviews.

This cross-sectoral fertilisation is a main focus of ERPANET as laid out in its Digital Preservation Charter.² It is of primary importance that disparate groups are given a mechanism through which to come together as best practices for digital preservation are established in each sector.

Aims

The principal aims of the study are to:

- build a picture of methods and match against context to produce best practices;
- accumulate and make accessible information about practices;
- identify issues for further research;
- enable cross-sectoral practice comparisons;
- enable the development of assessment tools;
- create material for training seminars and workshops; and,
- develop contacts.

Potential sectors have been selected to represent a wide scope of information production and digital preservation activity. Each sector may present a unique perspective on digital preservation. Organisational and sectoral requirements, awareness of digital preservation, resources available, and the nature of the digital

² The Charter is ERPANET's statement on the principles of digital preservation. It has been drafted in order to achieve a concerted and co-ordinated effort in the area of digital preservation by all organisations and individuals that have an interest and share these concerns.
<http://www.erpanet.org/charter.php>.

object created place unique and specific demands on organisations. Each of the case studies is being balanced to ensure a range of institutional types, sizes, and locations.

The main areas of investigation included:

- perception and awareness of risk associated with information loss;
- understanding how digital preservation affects the organisation;
- identifying what actions have been taken to prevent data loss;
- the process of monitoring actions; and,
- mechanisms for determining future requirements.

Within each section, the questions were designed to bring organisational perceptions and practices into focus. Questions were aimed at understanding impressions held on digital preservation and the impact that it has had on the respective organisation, exploring the awareness in the sector of the issues and the importance that it was accorded, and how it affected organisational thinking. The participants were asked to describe, what in their views, were the main problems associated with digital preservation and what value information actually had in the sector. Through this the reasons for preserving information as well as the risks associated with not preserving it became clear.

The core of the questionnaire focused on the actions taken at corporate level and sectoral levels in order to uncover policies, strategies, and standards currently employed to tackle digital preservation concerns, including selection, preservation techniques, storage, access, and costs. Questions allowed participants to explore the future commitment from their organisation and sector to digital preservation activities, and where possible to relate their existing or planned activities to those being conducted in other organisations with which they might be familiar.

Three people within each organisation are targeted for each study. In reality this proved to be problematic. Even when organisations are identified and interviews timetabled, targets often withdrew just before we began the interview process. Some withdrew after seeing the data collection instrument, due in part to the time/effort involved, and others (we suspect) dropped out because they realised that the expertise was not available within their organisation to answer the questions. The perception of risks that might arise through contributing to these studies worried some organisations, particularly those from sectors where competitive advantage is imperative, or liability and litigation issues especially worrying. Non-disclosure agreements that stipulated that we would neither name an organisation nor disclose any information that would enable readers to identify them were used to reduce risks associated with contributing to this study. In some cases the risk was still deemed too great and organisations withdrew.

Chapter 3: Method of Working

Initial desk-based sectoral analysis provides ERPANET researchers with essential background knowledge. They then conduct the primary research by interview. In developing the interview instrument, the project directors and editors reviewed other projects that had used interviews to accumulate evidence on issues related to digital preservation. Among these the methodologies used in the Pittsburgh Project and InterPARES I for target selection and data collection were given special attention. The Pittsburgh approach was considered too narrow a focus and provided insufficient breadth to enable full sectoral comparisons. On the other hand, the InterPARES I data collection methodology proved much too detailed and lengthy, which we felt might become an obstacle at the point of interpretation of the data. Moreover, it focused closely on recordkeeping systems within organisations.

The ERPANET interview instrument takes account of the strengths and weaknesses from both, developing a more focused questionnaire designed to be targeted at a range of strategic points in the organisations under examination. The instrument³ was created to explore three main areas of enquiry within an organisation: awareness of digital preservation and the issues surrounding it; digital preservation strategies (both in planning and in practice); and future requirements within the organisation for this field. Within these three themes, distinct layers of questions elicit a detailed discovery of the state of the entire digital preservation process within participants' institutions. Drawing on the experience that the partners of ERPANET have in this method of research, another important detail has been introduced. Within organisations, three categories of employee were identified for interview: an Information Systems or Technology Manager, Business Manager, and Archivist / Records Manager. In practice, this usually involved two members of staff with knowledge of the organisation's digital preservation activities, and a high level manager who provided an overview of business and organisational issues. This methodology has allowed us to discover the extent of knowledge and practice in organisations, to understand the roles of responsibility and problem ownership, and to appreciate where the drive towards digital preservation is initiated within organisations.

The task of selecting the sectors for the case studies and of identifying the respective companies to be studied is incumbent upon the management board. They compiled a first list of sectors at the very beginning of the project. But sector and company selection is an ongoing process, and the list is regularly updated and complemented. The Directors are assisted in this task by an advisory committee.⁴

³ See <http://www.erpanet.org/studies/index.php>. We have posted the questionnaire to encourage comment and in the hope that other groups conducting similar research can use the ideas contained within it to foster comparability between different studies.

⁴ See www.erpanet.org for the composition of this committee.

Chapter 4: The Schweizerische Depeschenagentur (sda)

Schweizerische Depeschenagentur AG (sda) – Swiss News Agency Ltd

<http://www.sda-ats.ch>.

The sda is the Swiss national news agency. It was founded in 1895 by Swiss media enterprises to counterbalance the position of foreign news agencies on the Swiss market and to offer Swiss media houses an independent news source, and is still owned by the leading Swiss media houses. Its turnover is around thirty million CHF, and it has 250 employees, 80% of who are journalists.⁵

In contrast to international agencies, such as ap (the Associated Press) and Reuters, whose correspondents cover the whole world, or the dpa and AFP, who cover a large part of the world,⁶ the sda is a national agency, focusing only on Switzerland. However, it also takes foreign news stories from world and international agencies and adapts them for the Swiss public. In reciprocation, it delivers its news to other national and international agencies.

The sda is the only Swiss news agency that produces a basic text news service, called sda-Basic, in German, French, and Italian, with some 300 news items per language, per day. Consequently, the agency has editorial offices for all three languages. The German and French editorial offices collaborate closely, while the Italian editorial office is independent, smaller, and very focused on the Italian speaking part of Switzerland. Each editorial office has a special focus on the respective part of the country, but an important news items are translated between sda's three languages. Sda is headquartered in Berne and has regional offices in all major Swiss cities as well as in Brussels.⁷

Inside Switzerland, sda enjoys a near-monopoly situation. There is some overlap with the Associated Press, but no major Swiss journal, broadcast, or television station can afford not to be subscribed to the sda-Basic news service. In fact, only one daily newspaper is not, and for many news providers sda is the only agency they deal with. It should be noted that sda does not deliver its news services to individuals, but only to media houses, commercial companies, and the federal administration.

Besides its basic service sda also offers more selective and tailor-made news services, including online and mobile news services.⁸ Sda has three affiliated companies, all of them active in the news sector in Switzerland. These are the national sport news agency Sportinformation Si AG, the business information agency AG für Wirtschaftspublikationen AWP, and the news provider news aktuell schweiz, a joint venture with news aktuell GmbH of the dpa group.⁹ Together with its affiliates, sda reaches a yearly turnover of fifty million CHF.

⁵ See <http://www.sda.ch/d/sda/firm/> and <http://www.sda.ch/d/sda/firm/history/>.

⁶ Associated Press (ap): <http://www.ap.org/>; Reuters: <http://www.reuters.com/>, Deutsche Presse-Agentur (dpa): <http://www.dpa.de/>; Agence France Presse (AFP): <http://www.afp.com/>.

⁷ See <http://www.sda.ch/d/sda/organisation/> for the agency's structure.

⁸ See <http://www.sda.ch/d/product/overview/> on sda's offer. ERPANET's interviewees state that these value-added services are part of a diversification strategy to counterbalance the high salary costs.

⁹ For more information about sda's affiliates, see <http://www.sda.ch/d/sda/participation/> and the affiliates' URLs: <http://www.sportinformation.ch/>, <http://www.awp.ch/>, and <http://www.newsaktuell.ch/>.

Chapter 5: Circumstances of the Interviews

ERPANET first contacted the sda in October 2003. Contacts were intensified in January 2004, and the sda agreed to take part in this case study. An interview was conducted on April 6, 2004, at the sda's premises in Bern, Switzerland. Two people from sda participated in the interview, namely the media responsible in Customer Relation Services, Ms Grazia Siliberti, and the head of system management, Mr Thomas Eltschinger. The interview lasted for two hours. Ms Siliberti supplied further material, such as business reports, as well as answers to additional questions after the interview.

ERPANET would like to thank Ms Siliberti and Mr Eltschinger, as well as all other people involved, for their time and assistance.

Chapter 6: Analysis

This section presents an analysis of the data collected during the case study. It is organised to mirror the sequence of topics in the questionnaire.

- Perception and Awareness of Digital Preservation
- Preservation Activity
- Compliance Monitoring
- Digital Preservation Costs
- Future Outlook

The interview that forms the basis of the present report was focused on the sda's digital news archive. This comprises all news items diffused by the sda since 1983. Please note that the sda produces only text news.

Perception and Awareness of Digital Preservation

Since the 1960s the sda has produced and dispatched its news items digitally. From 1983 onwards, the dispatched items have also been simultaneously fed into an archive database. The sda therefore looks back on more than twenty years of experience of archiving digital news. During this time, the news archive has become an integral part of the sda's daily work.

The main problems

The representatives of the sda that contributed to the present report do not perceive any major problems in connection with digital preservation. As will become clear below, the digital news archive is considered very important for the agency's daily business. However, the challenges involved in maintaining quick access to a reliable archive are small both from a records management and an IT point of view.

Asset value and risk exposure

ERPANET's interviewees summarised the sda's business principles in the maxim "first reliability, then velocity". As a news agency, the sda is committed to delivering reliable, verified, neutral, and uncommented news to its customers, namely media and commercial companies. Furthermore, the quicker news is delivered, the more it is valued.

The sda staff rely heavily on the news archive to contextualised new information and offer a background understanding. The digital news archive is one of the primary business assets of the sda and is indispensable for everyday editorial work. The main risks involved are therefore of a business nature. Loss of archived information would hamper and slow down the sda's work and would make news verification more tedious and expensive. It goes without saying that only a complete archive with real-time access even under a heavy load, fulfils the requirements of a contemporary news agency. For digital preservation work at the sda, this leads to the conclusions that access is key, and that completeness of the archive must be guaranteed.

Besides these business risks, there are a few others. Since the sda sells access to its news archive to editors, organisations and other companies, loss of data would have financial consequences. As for legal liability, a disclaimer rules this out. In its terms of

use sda states that no indemnity claims shall be accepted based on the sda news. While being committed to accuracy and reliability, the sda can therefore not be held responsible for the content of the news it dispatches. In fact, ERPANET's interviewees recognise that there is always a risk of error, although marginal, and it would be irresponsible to claim that the sda news is 100 percent error-free. This disclaimer rules out the possibility that the sda be taken to court over its (real or alleged) news items.

It is worth noting that the sda has a very restricted correction policy for its news archive. While obvious mistakes are usually corrected on the same day, i.e. before the daily dataset is transferred to external customers' archives, the historical character of the news archive is not touched. If a past message turns out to be inaccurate, obsolete, or no longer valid, this is no reason to change it. In fact, the news archive preserves news items that are authentic at the moment of delivery and reflect this historical state. Users of the archive have to be aware of this fact.

Regulatory Environment

While in general the sda's business is governed by the framework of national laws, there are no specific regulations concerning the news archive. Neither does the agency observe external quality standards. As mentioned in the above chapter, liability is restricted through a disclaimer in the general terms of use.

On a broader note, the sda follows a set of rules to ensure the reliability of its news items. National news items are usually researched by the sda itself through its network of correspondents and editorial offices. For news that has been distributed by other media, verification is mandatory, as well as for all news that arouses suspicion. If some person is accused, he or she has to be consulted before the news is dispatched. International news is only distributed by the sda if reported and thus cross-verified by at least two agencies.

Preservation Activity

Policies and Strategies

There is no policy in place to guide the archival work of the sda. When the agency started to move into the digital realm for production and delivery of its news, it decided to preserve all dispatched news items for an indefinite period of time. The digital news archive rests on this decision.¹⁰ Archival work is guided by lower-level constraints, imposed by information management and mostly of a technical or commercial character.

Selection

At the establishment of the digital news archive the sda decided to preserve every news item despatched. This is the only selection decision, and no further selection is applied. Of course, the news items themselves do undergo a selection process in which they are chosen, edited, verified, and cleared for dispatch.

¹⁰ Interviewees stated that there had not been a thorough cost/benefit analysis prior to this decision, but that it was rather a "good gut decision".

Preservation

Responsibility for news preservation is divided among different sections of the sda, mainly because the news archive is too small to be singled out as an independent business unit. Apart from two documentalists¹¹ (1.6 FTE) who work partly for the news archive, other staff from Customer Relation Services and from IT, logistics, and development dedicate part of their working time to preservation.

The sda uses an older database format (BRS/Search) for the archive. A full-text database system, BRS/Search is not widely used today, but in the sda's view has proved to be very robust and reliable.¹² The sda do not see the need to replace this system with a more recent one as it fulfils all of their demands.

For all internal work on news items, the sda uses a text-only format. This also accommodates descriptive metadata, such as category, date, etc. The format is called DotDot, after the two dots that precede every element. The data is fed into the database and delivered from the database in this format. Since this format is very simple and openly specified, conversion to other desired formats does not pose major problems.

For dispatch, the DotDot format is converted into the international standard news format IPTC7901, developed and maintained by the International Press Telecommunications Council IPTC.¹³ Since interoperability and automatised processes are crucial in the international news business, open and free standards play a major role. The IPTC7901 format is still the main standard in use, although its development was frozen some years ago. There is widespread unanimity that the XML-based NewsML will be the major standard for text news in the near future. The sda is already using the their lightly customised NewsML/sda for its online news service.¹⁴

Metadata are restricted to descriptive metadata.¹⁵ The journalist who writes a news item is responsible for assigning metadata to it. Although there is some assistance through automation, metadata is mainly assigned manually. The head of systems management stated that descriptive metadata alone was not enough for resource discovery, therefore the full-text search possibilities offered by the BRS/Search database are considered more important.

The sda keeps its news archive database on hard disks. This is made possible by its limited size. Currently there are around four million archived news items that amount to some 20 GB. About 1 GB per year is added to the archive. The sda acknowledges that these amounts of data are small when compared to other companies' and organisations' data holdings. The database is mirrored twice in-house, and backed up on tape on a daily basis. The tape backups are brought out of the agency's premises once a week and kept offsite.

The head of systems management acknowledges that this backup policy at first sight does not meet the most demanding specifications. There is however a very strong

¹¹ These are akin to Information Managers.

¹² See <http://www.brssearch.com/> for the homepage of BRS/Search.

¹³ The IPTC website is at <http://www.iptc.org/>. See <http://www.iptc.org/IPTC7901/> for information about IPTC 7901 and a downloadable version of the format.

¹⁴ See <http://www.sda.ch/d/product/online/komplett/> for the sda-Online service, and <http://www.sda.ch/downloads/sdaNewsml-gl-03.pdf> for the NewsML Implementation Guidelines. The NewsML homepage is at <http://www.newsml.org/>.

¹⁵ Given the straightforward preservation process, preservation metadata are barely needed.

safety net involved, through the external copies at different database vendors (see below on access). Since all of the sda's news archive is kept at and distributed by third parties, and newly archived items are transferred there daily, there would not be a problem in recovering part of or the whole news archive in the unlikely case of a complete and simultaneous destruction of the three disks systems that hold the archive at the sda's premises.¹⁶

Access

The news archive is accessed through the sda's Internet platform ELIAS. This portal is password protected and used by both the sda staff and external customers.¹⁷ The latter can currently choose between pay-per-article or a monthly flat rate. For media customers, i.e. customers that are already subscribed to the sda-Basic service, the costs amount to 2.80 CHF per article or 700 CHF per month. These prices are relatively low as the sda assumes that media customers are already receiving the news feeds. The news items are delivered directly in the internal DotDot format.

Due to the specific format of the archive platform sda is not in a position to reveal access statistics. Internal access statistics cannot be established, whereas external statistics can only be produced at a large effort.

Since sda considers the administration expenses caused by the pay-per-article option too large, they are currently working towards suppressing this service and to offer uniquely the flat rate version. In fact, there are many users that consult only a few articles a year, thereby causing the agency high accounting costs.

A considerable number of customers access sda's news archive through other platforms and providers. The whole or part of the archive is copied daily to a number of database and knowledgebase portals. These include Factiva, Dialog DataStar, LexisNexis, and Genios.¹⁸ When users access sda news through one of these portals, sda earns royalties.

Compliance Monitoring

Correct transfer of news items into the database is controlled through database log files. The head of systems management checks these daily. In addition, a check on the completeness of the archive (a sign of following submission policy procedures) is provided by the archive's users: should a part of the news, such as one day's worth, not be transferred to the archive and/or the external portals, users would quickly notice this and alert the responsible party.¹⁹

¹⁶ Unknowingly the sda thus follows a preservation approach that has been researched and detailed at Stanford University in the LOCKSS project ("Lots of Copies Keep Stuff Safe"). See the LOCKSS website at <http://www.lockss.org/> and the respective erpaAssessment (<http://www.erpanet.org/assessments/>).

¹⁷ See <http://www.sda.ch/d/product/text/archiv/> for details.

¹⁸ Factiva: news and business content provider, <http://www.factiva.com/>; Dialog DataStar: portal for 350 business and technical information databases worldwide, <http://www.datastarweb.com/>; LexisNexis: legal, economic and political information provider, <http://www.lexisnexis.com/>; Genios: economic database portal, <http://www.genios.com/>.

¹⁹ The ERPANET case study of the Netherlands Historical Data Archive (NHDA) revealed a similar way of compliance monitoring through user feedback; see <http://www.erpanet.org/studies/> for the NHDA study report.

Checks for physical media deterioration are part of the regular duties of the IT systems responsible.

Digital Preservation Costs

As yet, the sda has not conducted a cost benefit analysis on its digital archiving efforts. ERPANET's interviewees stressed that the decision to institute a digital news archive had not been taken based on financial considerations. Rather, once the decision to go digital had been taken, it was regarded as a logical consequence to preserve the digital news items. The sale of access to the archives for external customers was initialised at a later date. The sda do not view this as an amortisation issue, but rather as an extra income generated on an already established asset.

However, the sda is now approaching the challenge of conducting a full and precise cost analysis of the digital archive. This is being hampered however by the fact that digital archive costs cannot be attributed to one single unit. Rather, it is the documentation unit, the IT unit, and the marketing unit that spend parts of their manpower and budget on the digital archive.

A rough guess of the digital archive's cost dimensions is based on human resources costs. From all of the sda's labour costs, it can be assumed that roughly 0.5 percent is spent on preservation purposes. The interviewees have not been able to numerate other costs involved, such as hard- and software.

Future Outlook

Generally speaking, the current functionality of the sda news archive is expected to remain stable and operable for the years to come. There are no urgent projects or glaring errors that have to be immediately approached.

An important focus over the next few months' will be the simplification of external user access. As has been mentioned above, the pay-per-article system is too costly for the sda. The agency is therefore planning to move to a flat rate-only system to cut down these costs. This is part of a more general attempt to improve the digital archive's efficiency. Cost and amortisation issues will therefore continue to play a role. Internal pressure is high, and costs must be reduced further. However, it should be noted that the *raison d'être* of the digital archive is not called into question.

Asked about their visions for the remote future, ERPANET's interviewees stated that they would like to add more value to their news archive by making it more easily accessible to the public at large. As it stands now, the sda news archive is geared towards media professionals who have the experience and knowledge to fully benefit from the opportunities it offers. It would be tempting to facilitate access to a larger, non-initiate public. An indispensable prerequisite of such a move, however, would be to clean up the archive. News items would need to be linked to each other, corrections would have to be made, and other improvements would impose themselves. However, as stated above, at present this is wishful thinking, and there is neither a business need nor a budget for such an innovation.

Chapter 7: Conclusions

The analysis of the Swiss News Agency sda shows a company that preserves and uses digital information (namely past news items) in a very self-evident way. Two specific characteristics of this information make digital preservation comparatively easy: their simple format, and their restricted size. The news items' format is plain unformatted text, whose preservation perspectives have long been judged favourably.²⁰ As news items are short pieces of text, the whole archive of some four million items is not larger than 22 GB. This is within the reach even of home office hard disk drives. Thus, both storage space and preservation strategies are relatively easily affordable and negligible in comparison to the huge advantages a quick access to all released sda news from the past 20 years offers.

A look on the recently completed ERPANET case study on the German Press Agency (dpa) reveals that there are some common approaches in the news business.²¹ The importance of the news archive to the agency, the conviction that this is to be preserved, the added value generated through external sales, have all been confirmed by both interviewed news agencies. Further commonalities are the conviction that a news archive has a limited value per se, but that access, adding value are key in running it, and a certain pressure to improve the efficiency. As a larger and international news agency, the dpa puts more effort into its digital news archive and has a separate business unit dedicated to it. However, both agencies report their archive costs to be in similar dimensions.

²⁰ See, among others, the Project Gutenberg's History and Philosophy at <http://www.gutenberg.org/about>.

²¹ See www.erpanet.org for the dpa case study report.

Appendix: List of Resources

Schweizerische Depeschagentur / Swiss News Agency (sda)

<http://www.sda-ats.ch/>

(Please note that the sda website is in German, French, and Italian only.)

Portrait: <http://www.sda.ch/d/sda/firm/>

Corporate structure: <http://www.sda.ch/d/sda/organisation/>

Affiliates: <http://www.sda.ch/d/sda/participation/>

News products: <http://www.sda.ch/d/product/overview/>

News archive: <http://www.sda.ch/d/product/text/archiv/>

International Press Telecommunications Council

<http://www.iptc.org/>

The IPTC 7901 Text Transmission Format

<http://www.iptc.org/download/download.php?fn=IPTC7901.zip>

BRS/Search database

<http://www.brssearch.com/>

ERPANET

<http://www.erpanet.org/>

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