
Building the German Digital Library Vascoda: Status Quo and Future Prospects

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Abstract

vascoda (www.vascoda.de) is a new portal for scientific information – it is the nucleus of the German digital library. vascoda is a central access point for interdisciplinary searches ranging from humanities and social sciences to medical studies, engineering, and more. Access to all types of documents is made possible: born-digital as well as digitised and print materials can be obtained either free of charge or through pay-per-view options. The service already includes full-texts, link-collections, databases, subject-specific search engines and more.

More than forty German institutions – mostly libraries and other information specialists are working together to offer users an actual one-stop-shop for all scientific information.

The first release of vascoda was realized through the co-operation of the network of subject-based Virtual Libraries sponsored by the DFG (German Research Society) as well as the Information Alliance and the Electronic Journals Library sponsored by the BMBF (Federal Ministry for Education and Research). Together, these institutions make it possible to combine the search for information and the access to full-text documents. Some of the journal articles and other documents can be accessed free of charge from anywhere in the world, the licence information for Germany is provided by the Electronic Journals Library and other partners.

In this paper, the services of vascoda and examples of how to find quality information for different fields of study will be presented. In spring 2005, a number of new services will be provided. This paper will also look into some of the future developments of vascoda.

Keywords : Digital Libraries, Portal, Information Services

0. Introduction

A number of libraries and subject information providers as well as learned societies provide a variety of subject portals with high-quality information. Academic researchers often know the important websites for their specific subjects but it is very hard to keep track of all the information that is available through the internet. There is a need for orientation, harmonization, and the possibility of simultaneous searches to enable researchers to find important information quickly. The search for information should also lead directly to the desired document to speed up the process of information retrieval.

In many countries different providers – state funded or commercial - try to offer their academic researchers and students portals or subjects hubs which provide easy access to quality information. Most of these projects specialize in specific subjects or in specific types of media (e.g. journals, Internet resources, e-publications etc.). vascoda's aim is very ambitious and there are many obstacles along the way, but the vision is to actually provide academic researchers with everything they need from simultaneous searching in many high-quality databases, a ranked presentation of the results, and the possibility of accessing the

desired documents either directly or by ordering them directly through document delivery services like subito (<http://www.subito-doc.com/>) or interlibrary loan.

Easy access to academic information through an interdisciplinary search combined with easy access to full-texts and navigation to individual subject-specific services is already provided by *vascoda*. Many problems still need to be solved before *vascoda* can be an actual one-stop-shop though. One major obstacle is the complicated licence situation in Germany. Due to the federal structure there are no national licences for important databases, so the solutions will have to work with this structure. Centralized solutions are despised in Germany, so the creation of one central point of access and the construction of a national infrastructure are important - yet difficult to achieve - goals. In this respect, *vascoda* is an important joint-venture of over forty German institutions (libraries, database-providers, etc.), sponsored by the Federal Ministry for Education and Research (BMBF) and the German Research Foundation (DFG). A list of members and associated members can be found at: <http://www.vascoda.de/en/wir.html>

This paper will present the aims of *vascoda* and the idea behind it. An overview over the already existing services and a glimpse at future prospects will be given.

1. Aims and Mission of *vascoda*

“Information overload” poses a problem that many researchers complain about. The information is theoretically available but since so much (mostly useless) information is presented through the internet, most people just do not know where to look for the information that is relevant to them. Also, it is widely believed that almost everything can be found through Google or other search engines. Many people do not know that a lot of high-quality information – even though it may be available free of charge – can not be found with search engines, because it is hidden in the deep web. The so-called STEFI-Studie showed that in the year 2000, 64.1 % of German students used search engines to look for information, while only 5 % used subject specific information gateways. (Klatt, p. 11) Information specialists know that search engines are not an effectual means for a comprehensive search, because the contents of most high-quality databases are not indexed by Google. Highly specialized databases can still offer a better service than a huge index of websites but many people do not know where to find this quality information. Thus, there is need for a service that provides orientation in the face of billions of documents that are available.

Google and other search engines have had a huge impact on how people want to search for information. The search has to be easy, the answers have to come fast, and the service has to be comfortable. Computer and Internet technology offer a wealth of opportunities for the search and delivery of information. By far, not all the possibilities have been used yet. However, there is a vision to provide users with all relevant information as quickly and as easy as possible. The BMBF (Federal Ministry for Education and Research) published its strategy in a position paper “Informationen vernetzen – Wissen aktivieren” (http://www.dl-forum.de/dateien/Strategisches_Positionspapier.pdf) According to these aims, *vascoda* tries to offer a comprehensive service for end-users who are not information specialists. Users who already use one of the individual portals (which make up *vascoda*) may use *vascoda* if they have interdisciplinary query. If, for example, a user wants to have information on “shamanism,” he or she can either search in the subject portal for Ethnology or search in *vascoda* and discover additional relevant answers from Psychology, Social Science, Economics, Sports Science, Education, History or Medicine. More complex searches will have to be done in the subject portals. Because of the bottleneck-phenomenon, *vascoda* will never be able to offer searches that are as complex as those that can be done in an individual subject portal.

The most important mission of *vascoda* is to create a homogeneous point of access to heterogeneous resources and to standardize the services wherever possible to provide the users with comfortable solutions.

This paper gives an overview over the services that are already available and on the plans for the near future and the next few years.

2. Status Quo

vascoda has been online since August 2003; a second release of vascoda was presented at the end of April 2004. At the end of 2004, twenty-one different subjects are included in the meta-search. The meta-search includes a number of specialized databases (e.g. Medline, FIS Bildung, PSYINDEX, SOLIS) and a number of databases which include metadata of quality Internet resources for specific subjects. Library OPACs are already partially included. More OPACs and Online Contents databases will also be included in the near future. Not all relevant content is included in the search yet and not all of the database providers manage to direct the user to the desired copy immediately. A great deal of work still needs to be done to find solutions for the different licence situations for local libraries. Since Germany does not yet have national licences for specific databases, it will be of greatest importance to find an easy-to-use system of providing licence information and the possibility of pay-per-use options for databases which are not available free of charge.

vascoda itself is a free service, but access to some of the partner's services may be restricted by licences. Access to full-texts is already provided in different ways, depending on license situations. The goals that vascoda wants to reach have been set very high, which means that much still needs to be done in order to create a comprehensive service.

3. A Search in vascoda

At the moment, a search in vascoda is a meta-search of a number of different databases.

It is a web-services structure using SOAP based on XML. The web-services structure of vascoda is described in detail in "Einsatz von Web-Services bei vascoda" (Steidl).

A search in vascoda will give a user a number of results from different subject areas. After a successful search the results are sorted by subject/provider.

The future prospects will be discussed in the Future Prospects-section.

4. Licences and Link Resolving: Retrieving the Full-Text

If the results generated by the vascoda-search are freely available Internet resources, the user can click on the link and get the information he or she desires. If, however, the information is an article from a book or a journal, the user will need information on how to access the material. For articles from electronic journals, the Electronic Journals Library (EZB) holds the licence information. It offers a comprehensive service for checking local licence situations. (<http://www.bibliothek.uni-regensburg.de/ezeit/?lang=en>) The EZB architecture is widely used in Germany, Austria, Switzerland and some other European countries and also by the Library of Congress in Washington. The EZB works with traffic lights which indicate the accessibility of the text. Green lights mean that the article is from a free web-journal and can be accessed from any computer in the world; yellow means that the respective journal is not generally a free journal but that the users' institution has licensed it, so that the user can access the text directly and free of charge; red means that the user does not have the license to access it. So, if the lights are green or yellow, the user can go ahead and read the full-text. This service depends on the delivery of the complete set of metadata to the EZB, so they can lead the user directly to the article. (This is not always the case yet.) It also means that the providers of the full-text will have to offer an open-linking-structure. In the future, a generic link resolver will make it easier to access journals which are freely available on the internet but which do not support an open-linking-structure yet. If the lights for a specific journal are red, the user might use a pay-per-view option, if it is available for the respective text.

vascoda is connected to the EZB via Open URL-technology, so that a user of vascoda can get the information on licences and availability through the EZB. The EZB leads the user to the full-text, via two or three clicks, or in many cases already directly.

The following example shows how a search in vascoda and the delivery of the full-text to the desktop ideally work. A user searches for “malaria” in vascoda and gets the following results:



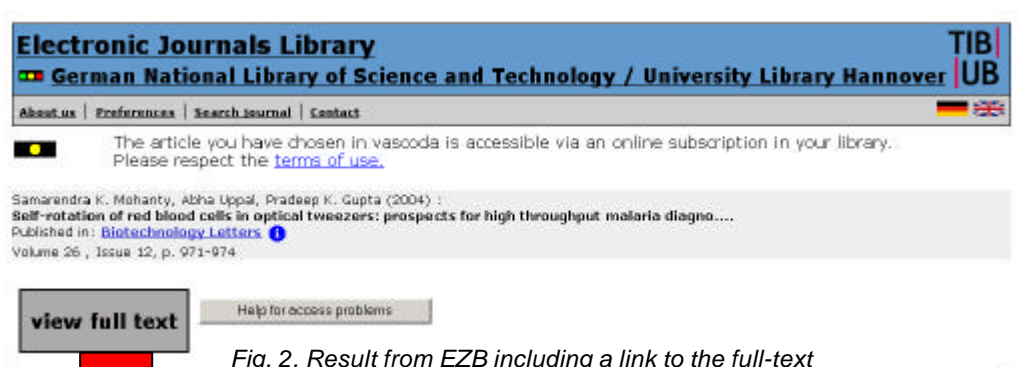
Fig. 1. Search Results for “malaria”

A search for “malaria” generates 37,430 hits from 10 different subject portals. One would expect results from the subject portal for Medicine but there are also useful hits from Psychology, Education and Economics etc. The small traffic lights indicate articles from electronic journals.

A click on the traffic lights-symbol reveals the licence situation at the users institution. Yellow traffic lights can only be presented at institutions which participate in the Electronic Journals Library, since the system needs to know the specific conditions, whereas green lights will be presented for the respective journals everywhere in the world.

If you click on the traffic lights symbol in the list of results, this will lead you directly to the Electronic Journals Library.

For the following search result, the traffic light is yellow, indicating that the user's institution – in this case the German National Library of Science and Technology – holds a licence for this electronic journal. This is why a "view full text"-button can be inserted. A click on the "view full text" button gives the user direct access to the desired full-text. If the full set of metadata is not made available to the EZB or if the publisher of the journal does not support an open linking structure, the user will have to take a few more steps to get the desired text. In this case, the caption on the link will read e.g. "view journal homepage". The user then has to follow the structure on the journal homepage to get to the full-text. This option is not as comfortable as the first one but it is still useful. Meanwhile a number of institutions try to increase the number of full-texts that can be directly linked to. In any case, the idea is to provide users with easy access to relevant full-texts, directly on the user's screen and free of charge wherever possible or through different versions of document delivery and pay-per-view-options wherever necessary.



Electronic Journals Library
 German National Library of Science and Technology / University Library Hannover

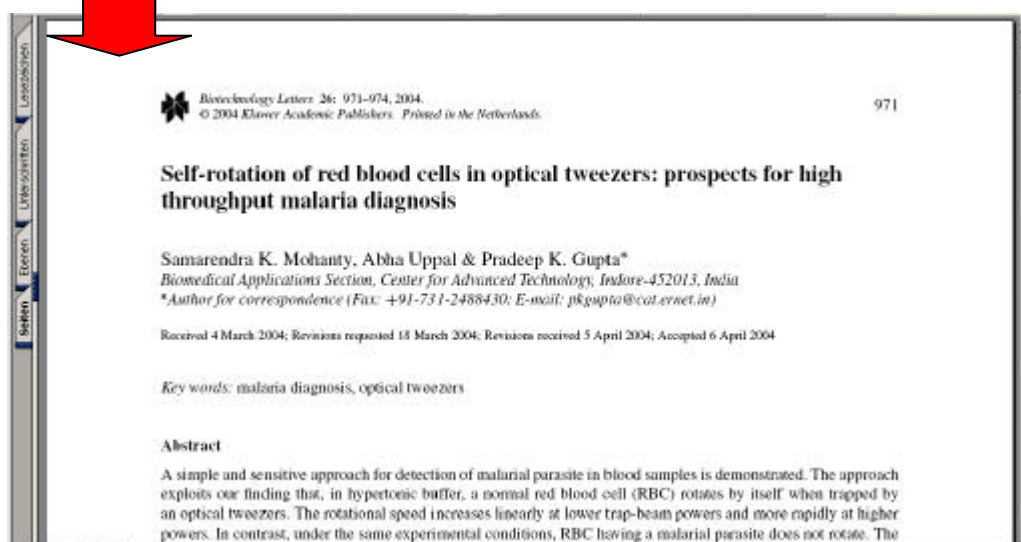
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view full text Help for access problems

Fig. 2. Result from EZB including a link to the full-text



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Self-rotation of red blood cells in optical tweezers: prospects for high throughput malaria diagnosis

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Abstract
 A simple and sensitive approach for detection of malarial parasite in blood samples is demonstrated. The approach exploits our finding that, in hypotonic buffer, a normal red blood cell (RBC) rotates by itself when trapped by an optical tweezers. The rotational speed increases linearly at lower trap-beam powers and more rapidly at higher powers. In contrast, under the same experimental conditions, RBC having a malarial parasite does not rotate. The

Fig. 3. Full-text from Kluwer Journal Biotechnology Letters delivered directly to screen

5. The Subject Portals

The individual subject portals offer a wealth of information in their respective subject areas. Not all of the databases that can be found in the individual portals are included in the vascoda meta-search yet, but they can be accessed through the subject portals already.

One example for a subject portal is MedPilot (www.medpilot.de), the portal for medicine and related sciences. It allows for a simultaneous search in 35 different databases. More than half of these databases can be used free of charge. The databases that can be searched range from Medline and Cochrane reviews to a number of library catalogues and publisher's journal databases to EMBASE and BIOSIS. There is a pre-selection of 15 freely available databases but the user can choose from the whole range of databases under the expert-search option.



Fig. 4 The expert search of MedPilot (www.medpilot.de) with pre-selected databases

A search for Malaria generates 33,410 hits in total. Many of the results have the EZB-traffic-light-symbol to show the licence situation of the journal.



Fig. 5 Search results in MedPilot with EZB traffic lights for licence situation

After clicking on the green traffic light, the user is directed to the journal's homepage, in some cases even to the full-text and can access the desired full-text without charge from anywhere in the world.

Other subject-based Virtual Libraries offer access to a wealth of subject specific databases and services as well, most of them not yet bundled under a meta-search. Up to now the following 21 subjects are covered: Cultural Anthropology, Earth Sciences, Economic Sciences, Education Science, English Studies, Engineering Sciences, Forestry, History, Mathematics, Medicine, Middle East including North Africa, Modern Art, Natural Sciences and Technology, Pharmacy, Physics, Political Science and Peace Research, Psychology, Social Science, Sports Science, Veterinary Science, Wood-Technology.

One example for a subject portal is the Virtual Library for Political Science ViFaPol.

Through this website the user finds high-quality internet-resources, library catalogues, databases and a number of services like an online-tutorial for Political Science.

ViFaPol
Virtuelle Fachbibliothek
Politikwissenschaft

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politics and peace guide

- Political Science Subject Classification
- Peace Research Classification
- Countries Classification
- Resource Type Classification
- Advanced Search

Articles

- Journal Article Database
- Electronic Journals Library

Books

- Union Catalogue (GVK)
- Political Science Subject Classification
- Lists of New Acquisitions
- Acquisition Suggestions

Databases

- Searchable overview of more than 80 subject-specific databases

Tutorial

- Frequently Asked Questions - FAQ [only available in German]
- Tutorial [only available in German]

About us

- Hamburg State and University Library
- Special Subject Collection

Fig. 6. The ViFaPol and its services (www.vifapol.de)

The individual subject portals give users the opportunity to search for subject specific information – no matter what physical form the information has. It could be genuinely in electronic format, or it could be printed materials that can be found via online-catalogues or databases or even microforms or videos. (Video material is quite an important resource for veterinary sciences for example.)

One of the many useful services that the ViFaPol provides is an overview over databases which are relevant to Political Science. The databases are marked as either available freely on the internet or licensed. If they are licensed the user has to find an institution that has access to the database but if they are freely available, the search can be started directly. For the presentation of the license situation the ViFaPol uses DBIS, a system that works quite similar to the EZB, only that it is used for databases instead of electronic journals. (<http://www.bibliothek.uni-regensburg.de/dbinfo/>)

6. Future Prospects

The software structure of *vascoda* will be changed in spring 2005. The search will be based on an architecture provided by the Information Portal Suite (IPS) from April 2005. (http://www.i-portalsuite.de/index_eng.html) The HBZ in Cologne will then be responsible for the operation of *vascoda*. The HBZ (Hochschulbibliothekszentrum des Landes Nordrhein-Westfalen <http://www.hbz-nrw.de/>) is the centre of a the regional library network of North Rhine-Westfalia. The IPS-software combined with the know-how and tools that the HBZ has implemented in its own digital library can be used to improve the *vascoda* services immensely in 2005. At the moment, there are still a number of problems in the *vascoda* services which need to be dealt with in the next few months. Once the HBZ operates the *vascoda* service, a number of different services will quickly be implemented, like e.g. an availability check and the inclusion of document delivery through subito and interlibrary loan. In the near future, the user should be able to choose an “appropriate copy” from a range of different options. The German Union Catalogue of Serials (ZDB) – containing more than one million serial titles, including over 400,000 current periodicals and 5.7 million holding records of about 4,300 German and a number of non-German European libraries – is also a part of *vascoda*. In a joint venture, the EZB, ZDB, and other partners will make it possible to have an availability check and find out in which ways the desired text could be obtained. This could be through direct access, through information on where to find a print-version of the journal, interlibrary loan, document delivery, or pay-per-view.

The holdings of monographs can be found in the local and regional library catalogues. The information that is held by the regional Library Networks will soon be included in the presentation of the *vascoda* results. This means that interlibrary loans etc. can be initiated after the successful search in *vascoda*.

Search-engine-technology might also be used to improve the service, e.g. to make the service faster and give more search and service options to the user, to include more content, to implement proper ranking options to sort the results and to implement a search tool that can deal with different spellings of words or typing mistakes.

It will also be important to offer *vascoda* as a background service that will allow a seamless navigation in the content that is available locally, regionally and nationally, so that users can start their search in the local library portal and that *vascoda* can offer specific information wherever the local content does not provide this information.

There are a number of libraries in Germany that hold special collections for special subject fields. *Webis* (http://webis.sub.uni-hamburg.de/ssg/text/was_ist_webis.html#english) offers a good overview over the special collections system in Germany. The content of *Webis* is supposed to be integrated into *vascoda* in the near future.

If many of the important goals can be achieved in the next months, many of the obvious bugs that make vascoda sometimes difficult to use can be eliminated by the end of the year 2005. A number of additional services can then be implemented and the already existing ones will be improved steadily, so that by 2007 vascoda will hopefully be a really comprehensive service that provides users with orientation in the face of extremely heterogeneous information providers. By then, vascoda will be a means to get a comprehensive collection of high-quality information from every subject quickly and wherever possible directly to the desktop (or alternatively to the doorstep).

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About Author



Tamara Pianos studied English Philology and Geography at the University of Kiel. After finishing her dissertation in Canadian Studies, she started her traineeship in Osnabrueck and Cologne to become an academic librarian. In April 2002 she started working as the co-ordinator of the German Subject-Based Virtual Library which by now has become a part of the portal vascoda.