**vascoda.de and the system of the
German virtual subject libraries**

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Meeting:	**148. Social Science Libraries** with **Division II** & **Special Libraries** and **Geography and Map Libraries**
Simultaneous Interpretation:	English, Arabic, Chinese, French, German, Russian and Spanish

vascoda.de is a German internet portal for everyone looking for scientific and scholarly information. It offers user-friendly access to reliable information and full texts from an extremely wide range of different subject areas. vascoda.de is based on a system of virtual subject libraries like, for example, econbiz.de, the virtual library for economics and business studies. These virtual libraries deliver the content being presented in vascoda.de and they also offer additional services and content not being part of vascoda.de.

1.   The national distributed library plan in Germany

Germany is a country with federal structure. Most academic and scholarly institutions like universities and academic libraries are in the responsibility of the German states. Of course Germany also has a national library. But the main collection of this German National Library consists of deposit copies from all publications published in Germany, which are supplied free of charge by commercial and non-commercial publishers. The German National Library collects the foreign literature only to a certain extent (German-language publications, translations into other languages of German-language works and foreign-language publications about Germany).

For this reason, the German Research Foundation (DFG Deutsche Forschungsgemeinschaft) (http://www.dfg.de) has developed a national distributed library plan: there are 23 scientific libraries (university libraries and state libraries) and some special libraries who have the task to collect the highly specialized research literature in foreign languages and to deliver this literature via inter-library-loan and document-delivery-systems like SUBITO (http://www.subito-doc.de) to the reader. The aim is to collect all relevant research literature worldwide so that every researcher in Germany has access to all the literature he needs for his research. The University- and City-Library of Cologne for example has special collections in sociology and

business administration and management which are funded by the German Research Foundation. The national distributed library plan was developed after World War II. Of course the scope of this system has been the printed material. Additional information about the German national distributed library plan can be found at WEBIS (http://webis.sub.uni-hamburg.de).

2.   The system of the German Virtual Subject Libraries

Since 1999 the German Research Foundation has begun to expand the system of the national distributed library plan to electronic information resources. 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 on the internet. There is a need for orientation, harmonization, and the possibility of simultaneous searches to enable researchers to find important quality-controlled information quickly.

 The libraries with special collections have the task to develop virtual subject libraries. Actually there are more than 30 virtual libraries in different disciplines like business and economics, social sciences, physics, history, law and so on. All virtual subject libraries have some elements in common:

- A subject guide of internet resources is a clearly organised, up-to-date compilation of selected and quality-controlled information sources. Short descriptions characterise contents and services of each resource.

- A meta-search-engine or search-engine technology offers a simultaneous search in different databases, library catalogues and other information resources.

- The search for information should lead directly to the desired document to speed up the process of information retrieval. So the third element which every virtual subject library should include is an availability check offering the user different options like e.g. "view directly", document delivery, interlibrary loan and pay-per-view options, depending on the licence situation and the kind of material that is being ordered (e.g. electronic full-text or printed book etc.).

There are different virtual subject libraries in the broad field of social sciences:

- EconBiz, the Virtual Library of Economics and Business Sciences (http://www.econbiz.de)
- EVIFA, the Virtual Library of Social Anthropology (http://www.evifa.de)
- German Education Portal (http://www.fachportal-paedagogik.de)
- IBLK, Gateway International Relations and Area Studies (http://www.fachportal-iblk.de/)
- Infoconnex, the German Information Network for Education, Social Sciences, and Psychology (http://www.infoconnex.de)
- Savifa, Virtual Library South Asia (http://www.savifa.uni-hd.de)
- SOWIPORT, Virtual Library of Sociology and Social Sciences (http://www.sowiport.de)
- VIFANord Virtual Library of Northern European and Baltic Regional Studies (http://www.vifanord.de)

- VIFAOst, Virtual Library Eastern Europe (http://www.vifaost.de)
- VIFAPOL, Virtual Library of Politics and Peace Studies (http://www.vifapol.de)
- VIFA Psy, Virtual Library Psychology (http://fips.sulb.uni-saarland.de/port.htm)
- VIFA Recht, Virtual Law Library (http://www.vifa-recht.de/)
- VIFA Rom, Virtual Library of Romance Languages and Literature (http://www.guiderom.de)
- VIFA Sport, Virtual Sports Library (http://www.vifasport.de/)

3.   EconBiz, the Virtual Library of Economics and Business sciences

EconBiz (http://www.econbiz.de) was developed by the German National Library of Economics in Kiel (http://www.zbw.eu) (responsible for economics) and the University and City Library of Cologne   (http://www.ub.uni-koeln.de)   (responsible   for   management   and   business administration).   Through the website the user finds high-quality internet-resources, library catalogues, full-text-databases and a number of services like a calendar of events, a helpdesk and also an online reference option.
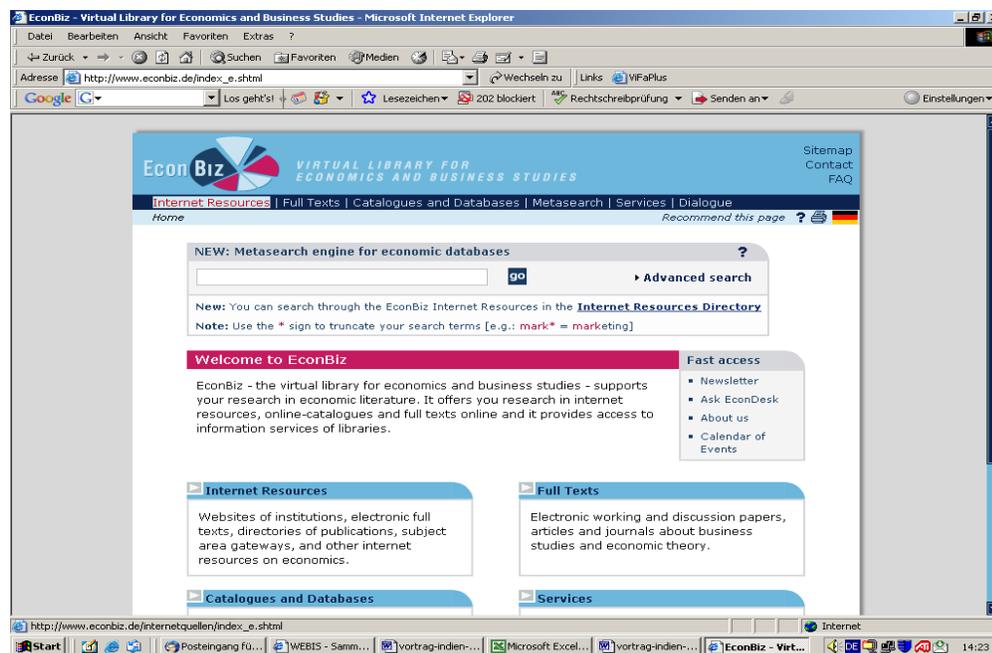
The subject guide with nearly 20.000 internet resources contains e.g. the description of about 5.000 web-pages of institutions, 5.900 homepages of researchers and 6.000 full-texts.
The high quality subject portal contains a lot of internet resources from the deep web. All of these internet resources were quality-checked and intellectually described. EconBiz has a link-checker to make sure that there are no inactive links. In addition to that, the content of every link is controlled every few months. It is possible to search and to browse in this database.

EconBiz also provides a meta-search engine which enables users to search more than six million title records form databases, library catalogues, the EconBiz Internet resources as well as free internet databases such as INTUTE.

Providing quality information and ensuring the long-term accessibility of documents demand a lot of time and money. In order to save resources, the workloads need to be shared. EconBiz is a virtual library which was developed by the two cooperation partners in Kiel and Cologne mentioned before. But EconBiz also has a lot of additional cooperation partners in the field of cataloguing the internet resources. Some of these cooperation partners are the Hamburg Institute for international economics, the Vienna University for Economics and Business Administration and the Thomas J. Long Business and Economics Library at the University of California, Berkeley.

EconBiz also uses a cooperative technical infrastructure to administrate the data. There are two systems in which EconBiz is involved: Academic Linkshare, a system of metadata-sharing in the field of internet resources, and Lotse, a cooperative online tutorial.

4.   Metadata sharing of internet resources by Academic Linkshare

The cataloguing of internet resources needs a special technical infrastructure. And like the cataloguing of printed material it is important not to do the work twice. For example a link to a ministry of economics could be of interest for the virtual library of economics and business, for the virtual library of politics or for the virtual library of law. With Academic Linkshare (http://www.academic-linkshare.de) a technical solution was built which makes it possible to use the same data in different virtual libraries.

In Academic Linkshare there are a lot of partners: Virtual libraries in the field of humanities and social sciences as well as other internet portals like the European Documentation Centres use this technical infrastructure.

There are metadata like institutions, url, title and so on used by every partner. And there are additional metadata, for example the classification in the browsing structure or the subject headings of a special thesaurus, which are specific for every virtual library. Academic Linkshare uses an own rights management system which makes it possible that a lot of participants use the system. Not only librarians and information specialists are able to put data into the system but also the researchers themselves. Academic Linkshare uses a technical tool called VIFA Plus. This tool can be installed for example by a researcher. With this tool he can add an internet link to the database with only two clicks. VIFA Plus has an automatic duplication-check and produces some metadata about the web site automatically by using the meta-tags. The researcher has the possibility to provide additional information. Later the data will be completed by the librarians.

Academic Linkshare is hosted by the State and University Library of Hamburg. They do not only offer the technical infrastructure for cataloguing the internet resources but have an additional service called "ViFa Hosting". So other Virtual libraries have the possibility to get a complete web-page with all functionalities they need including the hosting . The web-page of Academic Linkshare itself has not the task to offer the end-user a direct interdisciplinary access to the internet resources being catalogued in the system. Academic Linkshare gives only a background-infrastructure – the presentation of the internet resources can be found in the participating Virtual Libraries.

5. vascoda.de the interdisciplinary internet portal for scientific and scholarly information

The system of the German virtual subject libraries delivers a great range of high quality internet portals for the different disciplines. And of course in Germany there are also union catalogues and a central journal database with a huge amount of bibliographic data. All these portals and institutions are involved in vascoda.de (http://www.vascoda.de) to offer a central access point for interdisciplinary and subject specific searches.


vascoda.de is a German internet portal for everyone looking for scientific and scholarly information. It offers user-friendly access to reliable information and full texts from an extremely wide range of different subject areas. Starting with one standard user interface, you can choose either a subject-specific or an interdisciplinary search. Easy to use navigation leads to high quality, specialized subject-specific portals. vascoda.de includes all types of documents, born-digital as well as digitised and print materials can be obtained either free of charge or through pay-per-view options. vascoda.de gives access to resources from the deep web which are not visible to internet search engines. vascoda.de is made possible thanks to joint funding from the Federal Ministry of Education and Research and the German Research Foundation. Vascoda.de is hosted by the HBZ (North Rhine-Westphalian Online Utility and Library Service Center in Cologne) (**http://www.hbz-nrw.de**).

vascoda.de uses search-engine technology. The implementation of intelligent search-engine-technology has improved the vascoda.de service in many ways. It makes the service faster and gives more search and service options to the user. The search-engine can provide different ranking and sorting options instantly. With dynamic drill downs it is possible to reduce the result-set of a search by a great range of different categories like subject headings, year, author and so on. Linguistic features assist users in their search.

In many cases, direct access to electronic journal articles is possible. For articles from electronic journals, the Electronic Journals Library (EZB) (http://rzblx1.uni-regensburg.de/ezeit/) holds the licence information. It offers a comprehensive service for checking local licence situations. 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 indicating the accessibility of the text. Green lights mean that the article is from a open-access web-journal; 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.
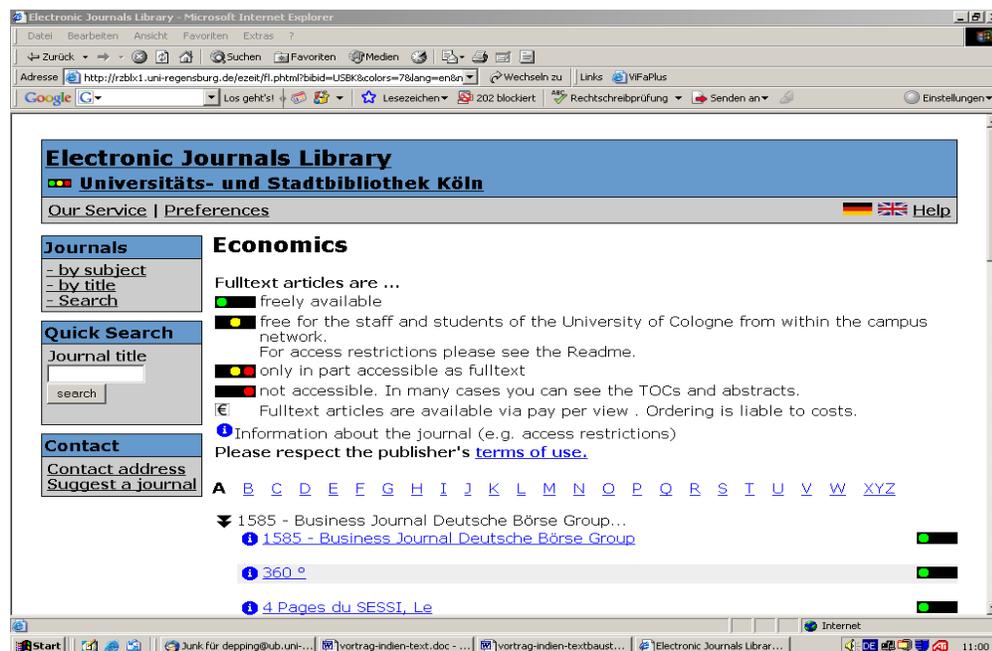
vascoda is connected to the EZB via Open URL-technology, so that a user of vascoda can get the information on licences and availability through the EZB. The EZB leads the user to the full-text, via two or three clicks, or in many cases already directly. vascoda.de is also linked with local detection systems and document delivery services so that searching for and getting literature is easy and fast.
Besides, a nationwide system of authentication, authorization and digital rights management will be developed. (http://aar.vascoda.de) Based on the Shibboleth technology (http://shibboleth.internet2.edu/) a single-sign-on-solution will make it possible that every user gets easy access to every electronic resource which is licensed by his own institution.

Most of the virtual subject libraries and information alliances which are integrated in vascoda.de have additional services and content not being part of vascoda.de. And, of course, they offer searching and browsing strategies and thesauri which are specific for the disciplines. The interdisciplinary search of vascoda.de does not make the virtual subject libraries useless but offers an interdisciplinary search and leads the user with very specific interests to the relevant subject portal. By selecting one of the four subject gateways (Humanities and Area Studies, Economics and Social Sciences, Life Sciences, Engineering

and Physical Sciences) the user will receive an overview of all information resources offered within this subject area and which are covered by vascoda partners at present.

Detailed collection level descriptions give a good impression about every portal and every database which is searchable by vascoda.de. With these descriptions the content, size and subject scope of every single integrated information resource is transparent for the user. So the user can decide himself which information resource is relevant for him.

vascoda.de went online in 2003 but is still "work in progress". Actually the functionalities of vascoda.de are not perfect. And there is a lot of content that still has to be integrated in vascoda.de. But putting such a huge amount of heterogeneous German institutions and information resources together and, last but not least, to harmonize and standardize services in one portal is a really good step to a German Digital Library for one-stop-shop-access to academic and scholarly information.