

The UK Electronic Libraries Programme

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The Electronic Libraries Programme (eLib) and the Edinburgh Engineering Virtual Library (EEVL)

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Introduction

Following the publication of the Follett Report (1) in 1993, which investigated how to deal with pressures on UK university library resources due to increasing student numbers and the world-wide explosion in academic information, both printed and electronic, the Electronic Libraries Programme (eLib) (2) was established. One of the key conclusions of the report was ‘the exploitation of IT is essential to create the effective library service of the future’, and as a consequence the Higher Education Funding Bodies in the UK invited proposals for projects which would ‘transform the use and storage of knowledge in higher education institutions’. This £15m. three-year eLib Programme aims to facilitate fundamental change in access to and delivery of information in support of teaching and research within UK higher education. To achieve this end, over sixty projects have currently been funded, covering number of areas including electronic document and article delivery, electronic journals, digitisation, on-demand publishing, training and awareness, and access to network resources (ANR).

The Edinburgh Engineering Virtual Library (EEVL) (3) project, which is based at Heriot-Watt University Library in Edinburgh, is being undertaken with the collaboration of five other UK universities. It is one of seven projects funded by eLib to improve access to quality networked resources for the UK higher academic community. Although each of the ANR projects aims to provide a gateway to Internet information resources within a specified subject area, the overall vision is to permit seamless access to resources in all subject areas by allowing end users to search across all the ANR services simultaneously. This facility will be made possible by agreement on standard templates for inputting the data, and agreement on the underlying technological infrastructure.

The Need for EEVL

Why is there a need for such subject-based services, when tools like Lykos and Altavista allow quick and easy searching across all WWW resources? On a trivial level, try searching using the word ‘construction’ if you are looking for civil engineering sites, and you will be presented with thousands of hits when all the pages which are ‘under construction’ are picked up. However, the problem is more fundamental - “web-based information, tracked by dozens of web-crawlers and harvesters, continues to grow exponentially without much thought to guidelines, safeguards, and standards concerning the quality, precision, trustworthiness, durability, currency, and authorship of this information.” (4). There is therefore a need

for value-added gateways to Internet resources and many consider that this can be best achieved by building subject gateways

Project Timescale

The EEVL project began in August 1995 and is funded initially for two years. The project was initially seen in four stages with the intention of going live in Spring 1997, but progress has been faster than anticipated and the full EEVL service went live in September 1996, four months ahead of schedule. EEVL has two and a half staff - a Project Officer, an Assistant Project Officer (half-time) and a Technical Officer. Each participating university has agreed to provide the time of one of their engineering information specialists for half a day a week and they make up the EEVL Team, together with the EEVL staff and the two EEVL managers - Information and Technical. Members of the EEVL Team provide input to the database, and contribute to the shaping and development of the project via email and the regular meetings of the Team. The state of the EEVL project as at May 1996 has been described in a paper by Malcolm Moffat, the first EEVL Project Officer, to the Aslib Electronics Group Annual Conference (5).

Additional EEVL services

From the beginning, EEVL wanted to be more than a 'laundry list' of URLs, but also had the aim of hosting a range of existing information resources that would be of use to academic engineers. Where these resources did not exist, then EEVL would stimulate their production. In May, EEVL mounted and launched *The Offshore Engineering Information Service* (6). This service provides information on forthcoming meetings and conferences, recent publications and a cumulative bibliography of publications in petroleum and marine technology. The service is available to members of the UK higher education community who access it from the 'ac.uk' domain and on a subscription basis to all other users. In July EEVL provided a filter and archive service for relevant Newsnet Newsgroups (7). EEVL now provides a Harvest index of all its UK resources (8).

Scope of EEVL

EEVL has established a server, defined a template structure and by the beginning of 1996 had established a database of over 800 URLs in engineering. The 'information' side of its task has been approached by developing a Collections Development Policy, which defines the range of resource types which will be covered by the service. Of course, this policy will be dependent on the supply of Internet sites, but includes the following resource types:

- Information server- Higher Education
- Information server- Society/Institution
- Information server- Commercial
- Information server- Governmental
- Library Catalogues
- E-journals/Newsletters
- Database/Databanks
- Resource Guide/Directories

- Training Materials
- Reference Materials
- Conference/Meeting Announcements
- Recruitment/Employment
- Patents/Standards
- Mailing/Discussion Lists
- USENET/Newsgroups
- Research Project/Centres
- Software (where freely available)
- FAQ (on engineering subjects)

Resource Selection

The basis for selection of sites is decided on a number of criteria which reflect the needs of EEVL's target group - engineering academics, researchers and students in UK higher education institutions. When resources are investigated for inclusion in the database a number of criteria are considered by the EEVL Team including information content, reliability/authority, usability, site design, user support and access considerations. Each selected site is given some added keywords, using the Ei Thesaurus developed by Engineering Information Inc.; it is given a place in the visual subject tree and briefly described in a short paragraph, so that a user can assess whether it is worth connecting to (especially important given the overloaded transatlantic 'fat-pipe'). The resources are being selected by subject librarians in each of the participating universities with experience of supporting academic engineers, and some basic scoring on the quality and relevance of the site is being added to each record, so that this can be used in the output if it is found to be helpful. The resources are organised in broad subject groupings to allow browsing, but it will also be possible to provide search facilities based on keyword and on resource type. Mechanisms will be put in place to frequently revisit each site and to test that the links are still active, so as to maintain the usefulness of the service. The stress of EEVL is on useful, quality information. Once this side of the project is in place, EEVL will provide other value-added network services to engineers, such as indexes to relevant USENET Newsgroups and indexes to Table of Contents services for engineering journals. EEVL also intends to provide a service to academic engineers by mounting relevant datasets and making them more widely available within the community.

There are, of course, a large number of disciplines which are relevant to engineering, and initially EEVL will concentrate on certain core areas, including Chemical, Civil, Electrical, Environmental, Mechanical and Offshore/Petroleum Engineering. EEVL will also concentrate on UK resources and will hope to be comprehensive in this area, but will include major non-UK resources, such as the home-pages of relevant international companies and organisations. EEVL will point to other engineering digital libraries, such as Cornell University's Internet Connections for Engineering (ICE) ([9](#)), Engineering Electronic Library, Sweden (EELS) ([10](#)) at the University of Lund, Sweden; Ei's Engineering Village ([11](#)) and the WWW Virtual Library ([12](#)), and provide links to them if a search has 'failed' on EEVL. It will be very important to convey to users, especially naive Internet users, the appropriate purposes that EEVL can be put to, and the questions that it can answer. Therefore, substantial effort will be devoted to promoting and explaining EEVL to potential users.

Technical Overview

The main EEVL hardware is a Sun SparcStation 20 Model 71 with 128Mb of memory and 8.2 Gb of hard disk. This specification was designed to ensure that very rapid access can be made to the template information about resources and to allow automatic indexes to be housed on the hard disk in addition to the primary template database. With the arrival of the Heriot-Watt's connection to the Edinburgh and Stirling Metropolitan Area Network (EaStMAN), the server is connected directly to the MAN at 100Mbps. A very important development in the EEVL service is the change from general purpose World-Wide Web server software to a custom server optimised for delivery of the template database and matched to the hardware specification of the EEVL server.

Evaluation

The eLib Programme has placed considerable emphasis on evaluation of both the individual projects and the programme as a whole. EEVL developed a Pilot Database which was tested in May 1996 on a number of Focus Groups in six universities, through their participation in workshops. The format for these workshops, which were attended by approximately 100 participants, was to ask them to fill in an initial impressions questionnaire, after which a short presentation was given on the background to the project, followed by a demonstration of the system. The participants were then given an opportunity to use EEVL and a discussion finished the session. The evaluation was focused on collecting background information from the workshop participants and their initial impression of the pilot service. These initial impressions were then used as themes for discussion with participants at follow-up meetings, which took place 5/6 weeks after the initial visits. This gap enabled the participants to use the system during the intervening period and to have formed opinions on EEVL.

The broad aim of the pilot evaluation was to gather feedback from real users on their usage and expectations of EEVL and to form user/focus groups for the future development of the EEVL service. The evaluation found that there is a growing interest in using the Internet as a tool in teaching and research. Although participants recognised that large search engines (e.g. Altavista) were useful tools for discovering resources, there was a widely expressed dissatisfaction with these service and the concept of the subject-based gateway was welcomed, as it was perceived to overcome some of the problems associated with the large search engines. The overall impression from the workshops was overwhelming positive. Participants found the searching and browsing facilities easy to use and commented that they liked EEVL's inherent simplicity and speed. The majority of participants had used an Internet search engine of some sort before and indicated that they found using these services difficult due to their unfocused nature and queries resulted in thousands of hits, most of which are irrelevant. Therefore a service which focused on quality resources in engineering was welcomed. A record of the use of EEVL by the participants at the workshop was maintained, and an analysis of the server statistics indicated that this sub-set of user were relatively unsophisticated in their searching techniques. They tended to use single keywords and rarely used Boolean operators. Searching was used far more than browsing (63% versus 37%). The logging software also kept a record of the numbers of different browser clients that were accessing the EEVL pilot service. By far the

most popular browser was Netscape with 5776 accesses by the different versions of the Netscape Browser available. Of these 847 came from Netscape 1.2 or lower and only 6 came from graphical browsers unable to render tables. There were, however, 597 accesses from the Lynx text-only browser, indicating that while the majority of accesses are from browsers which are able to benefit from more advanced HTML features, EEVL should take care to ensure that text browsers can still access the service effectively. The use that the participants in the workshops (and other invited users) have been making of the EEVL pilot service has been fully reported (13).

New Services

EEVL intends to add a variety of new information services over the coming months, including a Harvest Index of UK Engineering Sites and other datasets of interest to engineers and together with the other projects in the eLib Programme it hopes to contribute to the overall aim of changing the culture of information access and delivery in UK higher education.

Footnotes and references

1. http://ukoln.bath.ac.uk/follett/follet_report.html
2. <http://www.ukoln.ac.uk/elib.html>
3. <http://www.eevl.ac.uk/>
4. Ciolek, T. Matthew. Today's WWW - tomorrow's MMM?: the spectre of multi-media mediocrity. *Computer*, Vol. 29, No. 1, January 1996.
5. <http://www.eevl.ac.uk/paper1.html>
6. <http://www.eevl.ac.uk/offshore/>
7. <http://www.eevl.ac.uk/cgi-bin/nwi/>
8. <http://www.eevl.ac.uk/uksearch.html>
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12. <http://arioch.gsfc.nasa.gov/wwwvl/engineering.html>
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