



# **EDEL**

## **a European Digital Library for Economics**

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### **Preface**

With mounting pressures on libraries caused by the ever-expanding range and number of information sources in print and electronic format, the attractions of library co-operation are clear. Areas for co-operation may be in sharing resources or technical expertise or in working together to obtain favourable licensing or purchasing conditions. Many library consortia are based at national or regional level. The Decomate II consortium is unusual in being subject-based across national borders, involving university libraries in six European countries.

### **1 Background: the Decomate and Decomate II projects**

The Decomate II project, which ran from February 1998 to July 2000, was partially funded under the European Union's Telematics for Libraries programme. It sought to develop a working model of a Digital library for Economics. Tilburg University (TU) in partnership with Universita Autonoma de Barcelona (UAB) the London School of Economics and Political Science (LSE) and the European University Institute (EUI) have developed a prototype digital library providing end-user access via a uniform interface to a range of information resources in the field of Economics. The project aimed to create a European Digital Library for Economics, providing users of partner libraries with mutual access to heterogeneous distributed resources of the consortium members, wherever possible giving direct access to full-text copyright and non-copyright material. It has provided a visible example of interconnected library services, integrating various functions to provide a full-scale virtual library service to end-users. Although the project focuses on the subject field of Economics, the architecture and the resource-discovery tools being developed should be entirely portable to many other disciplines and institutions.

The Decomate II project is based on the results of the successful Decomate I project. Decomate I developed an end-user system (implemented as a live service in the three participating universities) that provided secure access to copyright materials using a single bibliographic database and online storage of full-text journal articles. The Decomate II project builds on this by providing end-users access to heterogeneous copyright and non-copyright materials in a distributed network across the participating libraries, supporting access to multiple bibliographic databases and full-text resources through a single, uniform user interface. All four main partners have strong Economics departments with an international reputation. Silver Platter, as an associated partner, has provided technical support and played an intermediary role in obtaining license agreements. The Erasmus University of Rotterdam, Maastricht University and the University Libre de Bruxelles were test



sites for the Decomate II software from the beginning of the project. During the course of the project the University of Macedonia in Greece and a number of German libraries expressed an interest in becoming test sites. Elsevier Science, Kluwer Academic Publishers and Swets & Zeitlinger were sponsoring partners, with Swets acting as an intermediary with some smaller publishers.

## 2 What end-users want

Several studies have been made of the requirements and preferences of academic library users for access to published material relevant to their areas of study or research. Although these reveal recognisable differences that correlate to broad types of users (undergraduates, researchers, professors), and to subject disciplines, one common demand is for consistency across the range of materials that their library provides. Their primary relationship is with one library or information service, not with many publishers or other original sources of material. They would prefer a single, simple method to find and access all of the information resources relevant to their field - with as few of those they consider irrelevant getting in their way in the process.

Another common desire is for immediate access - users "want it now!", and therefore they are keen to access electronic versions of journal articles and similar digital resources for which the full text can be immediately delivered to their desk. Many publishers, intermediaries and libraries are responding to this demand by producing proprietary gateways and interfaces for their users (or, at least, the users they hope to attract) to search for and retrieve material from their own titles or collections. No doubt the people responsible for each of these services believe that they have achieved the "best" user interface for their purpose, but the problem from the users' point of view is that they are all different interfaces and any one service will only contain a percentage of what the individual user wants. User studies indicate that a substantial quantity of high quality resources is a key factor for users in determining the value of a digital library service. Not only must the key journals in the subject area be included but there must be a sufficient number and quantity of the most frequently-used resources to encourage students and researchers to use the service. They also want these resources to be presented to them via a consistent, uniform interface with which they can become familiar.

## 3 The Decomate II service and content

The Decomate II model is designed to provide a solution to these user requirements. Firstly the partners aimed to include in the Decomate II service a critical mass of the core information resources in economics, whatever their source. An important early task was to investigate across the partner sites the information resources required by users. This revealed much common ground but also unearthed some resources held at only one or two partner sites but of interest to other partners, e.g. JSTOR, IBSS, RePEc. A significant advantage of this subject-based international consortium proved to be the opportunity to tap the subject and bibliographical expertise of library and academic staff across the partner sites. Once the necessary content for Decomate had been identified, the next step was to acquire cross-site access to it for all the partners. Where resources were owned

by partners, this could be organised quite easily in some cases, e.g. incorporating the partner libraries' catalogues in the Decomate interface. User studies showed that research or working papers in economics from the home institution and from other universities came high on the list of valued resources, so wherever possible these were added. It should be noted that it is not always easy for libraries to obtain access to working papers from their own institution when production of these is highly de-centralised. However, sharing working papers between institutions is potentially a major benefit of digital library co-operation.

Much of the content in the Decomate digital library model is commercially-available copyright material. This is where the existence of a consortium of partners working together proved particularly beneficial, as well as the input of our commercial partners. Favourable license agreements were concluded with Elsevier Science, Kluwer Academic, Bell & Howell Information and JSTOR. These involved cross-partner inter-licensing, with, in some cases, the supply of information providers' bibliographic records to the Decomate database, linking to the full text resources. It was unusual for publishers and intermediaries to be approached by a subject-specific consortium wishing to conclude licensing agreements. However, the Decomate experience showed that a discipline-oriented international grouping of libraries can negotiate successfully with suppliers, focussing on a limited range of resources in a specific field - in this case economics. The Decomate model provides for a mix of locally-based and federated/distributed databases and document servers, to provide end-users with streamlined access to a critical mass of subject-specific resources. Running a database at one site and making it available to users at the other partner sites can be an efficient and effective way of sharing resources.

#### 4 Decomate II architecture

This paper does not attempt a detailed exposition of the internal architecture of the software developed by Decomate II. However, it is necessary to understand a minimum of detail about the architecture, to explain why the model chosen is potentially connectable to many independent sources of bibliographic data, and full text documents, and potentially scaleable very far beyond the partner universities and the specific subject area of economics. In the Decomate II model, users access the Decomate server of their home institution and therefore use the single gateway and interface configured by their institution. But this server can direct their searches at many bibliographic databases in parallel, using Z39.50 and other protocols, and can similarly give them access to many document stores, thus improving the chances of locating for the user an electronic copy of the required full text document.

Figure 1 shows a user of one of the Decomate II servers, from which the same query is directed at five bibliographic targets. These may include not only bibliographic databases maintained for use via Decomate, but also 'third party' bibliographic data, such as some CD-ROM-based databases. It is likely that most full text documents will be retrieved from the parallel document server maintained alongside a bibliographic database, but it will also be possible to select a bibliographic record found in one database, and retrieve the correct full text document from a different and independent source. Where a full text source is

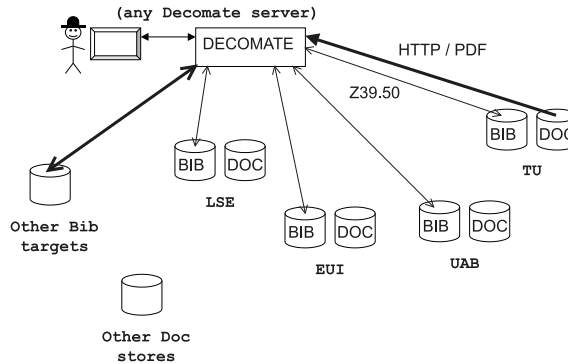


Figure 1

not immediately available online within the service, Decomate II includes a document-requester from which an authorised user can initiate a request via a range of inter-library loan or document supply services for later delivery. (However, full exploitation of this document-supply-request facility has been limited within the Decomate II project, due to the lack of available article-level bibliographic cataloguing for journal titles available only in print form).

As expected, publishers and other rights-holders of full-text resources are concerned that access to them is properly managed, and restricted to licenced users only. Universities already devote enormous resources to the maintenance of management information about their staff and students. Many university libraries are also duplicating this effort to maintain patron records in their library administration systems. Rather than duplicate this data and effort again, the Authentication-Broker component of the Decomate II system is configurable to use a number of standard (and, probably, not-so-standard) existing services for such user authentication and directory information. Users can therefore authenticate their identity to Decomate with a name and password that they already know (for example, their network login), and avoid being asked again for information which they have already supplied to their university or library. Our preferred standard (amongst those covered) is Lightweight Directory Access Protocol (LDAP).

Maintenance and further development of the complex software produced by the Decomate II project is of course a non-trivial task. Recognising this, the three project partners (TU, UAB, LSE) responsible for software development have licenced Pica to exploit the software products commercially, with a commitment to resourcing further development for the benefit of the higher education and research community.

## 5 Economics as an appropriate subject for European co-operation

The technical achievements of the Decomate II project have been considerable, but there have been other important achievements. The Decomate model of library co-operation has a number of benefits. Economics is an international, not a national discipline, so demand for the same common core of essential resources might be expected across national

borders. It proved beneficial to share subject expertise across the partner institutions in different countries, to arrive at an understanding of the information resources to be included in the Decomate prototype of the digital library. The project investigated user behaviour and user needs in different environments with different cultural attitudes and a variety of technical and organisational situations, on a truly European-wide basis. The resulting Digital Library for Economics was designed to cope with a wide range of institutional environments, from the large-scale university at Barcelona, with high student numbers putting pressure on computer facilities to the hi-tech university library at Tilburg; from the research-led teaching environment at the LSE to individual researchers based at the European University Institute.

On the basis of sharing institutional resources and negotiating licensing agreements for copyright materials, the Decomate consortium has acquired the potential core content for what we propose to call the European Digital Economics Library (EDEL). It has also investigated and found solutions to a range of organisational, cultural and technical issues involved in developing a trans-national library consortium. Positive outcomes of the Decomate II project, as well as the development of the software, include the identification of a common core of resources in economics, the pooling and sharing of technical, bibliographic and subject-focussed expertise as well as the experience of co-operation across national boundaries. Partners gained a greater understanding of the common areas involved in providing digital library services to their users as well as the cultural and organisational differences. The consortium also experimented in conducting licensing negotiations within a specific subject field, focussing on a limited range of resources.

## 6 The current context of co-operation

How does a digital library service like the Decomate II consortium fit within the many national and international digital library initiatives currently being developed? In the United States the Digital Libraries Initiative Phase 2, involving the Library of Congress and the National Science Foundation as well as other organizations, has funded a wide range of digital library projects, many of them aimed at increasing the store of digitized scholarly resources. The Canadian Initiative on Digital Libraries aims to improve communication and coordination in the development of Canadian digital library resources. In the United Kingdom, first the Electronic Libraries Programme (e-Lib) and now the Distributed National Electronic Resource (DNER) has developed numerous digital library projects and services, including demonstrators and working models of the hybrid library. The British Library is developing, with IBM, a digital store to form the technical platform to support its acquisition and preservation of collection materials in digital form, together with digitised elements of its own historical collections. It will be designed using the Open Archival Information System (OAIS) reference model and will build on the work of the CEDARS digital preservation project. The Dutch national library, the Koninklijke Bibliotheek, has embarked on a similar project. In Germany the Forschungsgemeinschaft is funding the retrospective digitization of library holdings in a number of subject areas, including law and mathematics.

## 7 The potential for EDEL

All these large-scale national initiatives are going to greatly increase the quantity of scholarly resources available in digital form, accessible over the Web. But spare a thought for the researcher, faced with ever-growing amounts of potentially relevant information resources and in danger of suffering from information overload. We believe there is a place within the international framework for a European-wide digital library focusing on economics. There are clear benefits to the end user of a consortium of European libraries sharing resources, co-operating in negotiating license agreements and pooling technical and subject expertise to present to the user a collection of relevant, high quality resources in economics. For this reason the original partners in Decomate II have agreed, as part of their exploitation strategy, to extend their partnership to a European-wide consortium - the European Digital Economics Library (EDEL). They plan to seek at least one partner in each of the member countries of the European Union.

What would be involved in being a member of EDEL? The Decomate II software is not essential but members would need to provide some sort of software with a uniform user interface and the capacity to link with a range of heterogeneous electronic resources available within the consortium. Members would also be expected to make their own institutional non-copyright resources available to partners and would have access to other partners resources and catalogues on a cross-site basis. It is expected that EDEL would enter into licensing negotiations with copyright holders of relevant information resources, to obtain beneficial agreements for consortium members. Members would be expected to maintain relevant databases of their own resources available within the consortium and to participate in initiatives to develop the EDEL concept further. We anticipate that an important component of EDEL will be mutual access to research and working papers produced by each member institution, thus encouraging communication and contact between researchers in economics. The user at an EDEL member library will be presented with relevant resources in economics, both copyright and non-copyright, across a range of media and geographical locations, via a uniform, seamless interface. To the user this will be their own personal digital library for economics.

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