

“Interlibrary Loan Network in Greece. A model that survives in the digital era”

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Abstract

The structure, operation and development phases of the Hellenic Interlibrary Loan Network (HILL-net) are described and the pros and cons of the model, as well as the conclusions after nine years of operation are reported. The HILL-net has been the first systematic collaborative activity among Hellenic libraries. After the shift of most member libraries to the digital era, the HILL-net is coexisting, in a symbiotic and complementary way, with access to electronic journals. The network started its pilot operation in 1994, initially with six member-libraries. It currently consists of 127 member-libraries, located in Greece (including one in Cyprus). The network is based on a radial model with all peripheral libraries connected through the internet to a central Union Catalogue of Periodicals, installed on the server of the National Documentation Centre (NDC) in Athens. The system provides online search capabilities to the database of the Union Catalogue and offers facilities of online document ordering of articles included in the journal collections of the member libraries. Delivery of documents is carried out by the “supplier” libraries to “customer” libraries via ordinary mail or fax, and occasionally via e-mail. The clearance of transaction costs is carried out centrally by the NDC for all libraries, thus simplifying financial logistics. A migration of the system from a main-frame host computer system to a web based platform on Oracle environment took place in 1999.

Keywords: Libraries networks, models, Interlibrary Loan, Remote Document Supply, Union Catalogue, National Journal collections, Greece.

Background

Interlibrary Loan (ILL) or, more correctly, according to the terminology proposed by Line (Line, 2003), Remote Document Supply (RDS), has been for decades (Wright, 1997) an essential function for libraries in their effort to expand the services offered to resources beyond their limited collections. The ILL and RDS functions are much more crucial for academic and research libraries than other types of libraries. This is recognised even by researchers and professionals that have a rather negative stance to ILL for public libraries and who propose alternative approaches in order to cover relevant needs (Amdursky, 2003).

Despite the essential character of these functions, no ILL or RDS mechanisms, systems or networks, had been developed in Greece until a few years ago. All co-operation between Hellenic libraries was occasional, based on isolated initiatives of personal relations among individual librarians rather than on systematic collaboration. Similar phenomena were also observed in other countries (Vaglio, 2001). The results of such a lack of co-operation between libraries led through the years to:

- Low quality of services offered to library users, which were mainly restricted to the material existing in each library
- Adoption of different standards in cataloguing by separate libraries (e.g. UNIMARC and USMARC, Library of Congress Classification Scheme and Dewey Decimal Classification), which has resulted in heterogeneity and the incompatibility of local systems as well as duplication of efforts
- Lack of a Union Catalogue of Periodicals, which resulted in the uncoordinated development of journal collections and multiple subscriptions paid by different libraries for the same journal titles, raising the overlapping coefficient of the national journal collection to an average of 2.56 subscriptions per title (Tsimpoglou, 2000)
- Weakness and inability of Hellenic libraries and, consequently, the academic and research community to exploit the material already paid and acquired, but spread in numerous locations throughout Greece.

Some of these gaps were filled by the establishment of the Hellenic Interlibrary Loan Network (HILL-net). The objectives of the Network were:

- the optimisation of the use of the continuously declining budgets of libraries
- the upgrading of services offered to the users by each library, and
- the establishment of a cooperative mentality between librarians and the acquiring of the know-how in library cooperation.

The means used for the achievement of these objectives were:

- the exploitation of the pre-existing Union Catalogue of Periodicals
- the establishment of a Remote Document Supply system
- the installation of the necessary central infrastructure in computers, software and personnel
- the creation of an appropriate mechanism and the organising of procedures accompanying these services, namely libraries' staff training, agreements concerning pricing policy, cost and financial clearance of transactions, and regular update of the Union Catalogue database.

The creation of the Hellenic ILL Network was first announced in February 1994 during the second Pan-Hellenic Symposium of Academic Libraries. The initiative was undertaken by the author, acting as the coordinator of the National Documentation Centre (NDC) <http://www.ndc.gr>, in the frame of project 13/EKT of the First Operational Programme for Research and Technology (EPET I). The project was co-financed by the General Secretariat for Research and Technology (GSRT) and the European Commission. The project aimed, inter alia, at creating the primary core of Scientific and Technological libraries, which would have the capability to offer RDS services as a response to online document orders for journal articles included in their collections. The basic terms of the network operation were described in a letter

of agreement, initially signed by a small number of 20 libraries. Six libraries were selected to run the pilot operation of the ILL Network. The criteria of selection were:

- their collection of periodicals to be included in the database of the Union Catalogue of Periodicals (SERI),
- the availability of basic equipment needed, in terms of photocopiers, personal computer and modem or LAN, as well as access to one of the available data networks in Greece i.e. HELLASPAC (the Hellenic PSDN) and ARIADNE-T or FORTHNET (the first Greek Internet Services providers), and
- the acceptance and signing of the "Contract and Terms of the ILL Network operation" by the Director of each participating organisation.

Infrastructure

The technological infrastructure that was used included the host computer "HERMES" of the NDC, which was installed in 1993 in the frame of the same project. The system was equivalent to the host computers used by the ECHO (European Commission Host Organisation, in Luxembourg) and the DIMDI (Deutsches Institut fuer Medizinische Dokumentation und Informazion) in Germany <<http://www.dimdi.de>>. The system consisted of a mainframe Siemens/Nixdorff (SNI) model H20, an operational system BS2000 and the Database Management System (DBMS) GRIPS. The query language was CCL (Common Command Language).

Since 1999 this system has been migrated to a SUN Solaris server and an ordering system has been totally developed in house by NDC staff in an ORACLE environment http://iris.ekt.gr:1111/skp/skp_search.login_1, providing access to the Union Catalogue of Periodicals and the online ordering systems via the web.

The Union Catalogue of Periodicals

The HILL-Net was built based on the existence of SERI, the online database of the "Union Catalogue of Periodicals in the Hellenic Scientific Libraries". This catalogue has existed since 1985 as an online database, although it was mostly known by the Hellenic Libraries from its printed versions. More than 2,000 volumes of the five printed editions were disseminated to Greek libraries.

The development of the Union Catalogue of Periodicals started in 1983 and was the first NDC online database. The NDC already had an online connection to more than 800 international databases via commercial host computers such as DIMDI, ESA/IRS, DATASTAR, DIALOG, TELESYSTEMES QUESTEL, ECHO, STN, etc. A very well trained and experienced group of 6 scientific experts acted as information intermediaries for bibliographic requests on demand. The requests originated from various types of institutions such as universities, hospitals, research centres and other organisations. Both crucial factors i.e. connection to major commercial hosts and the formation of a team of information intermediaries ensured, to an adequate degree, the first link of the information chain: the search and retrieval of bibliographic references. The Union Catalogue of Periodicals was created to cover the second information link that is a tool for the identification and provision of original documents in Hellenic libraries.

The first edition of the printed catalogue was published in 1985. It included 5,000 scientific journal titles in the collection of 5 libraries, belonging to institutions supervised and financed by the Ministry of Research and Technology. Today the union catalogue of periodicals includes 249 Hellenic libraries (three of them located in Cyprus).

Table I. Evolution of the Union Catalogue of Periodicals and the HILL-net.

Dates	UNION CATALOGUE OF PERIODICALS				HILL-net	
	Members	Journal Titles	Journal Subscriptions	Overlapping coefficient	Members	Orders executed
1 st edition 1985	5	5.000	11.779	2,36		
2 nd edition 1987	15	10.000	23.558	2,36		
3 rd edition 1989	45	15.000	35.336	2,36		
4 th edition 1992	104	19.000	44.759	2,36		
1994	133	20.400	48.057	2,36	6	905
1995	167	20.614	49.800	2,42	45	5.434
1996	190	21.100	53.224	2,52	57	10.680
1997	206	22.790	57.790	2,54	73	15.045
1998 (5 th edition)	210	23.677 ⁽¹⁾	58.500	2,47	87	16.113
1999	215	24.765 ⁽¹⁾	N/A	N/A	89	14.990
2000	220	25.853 ⁽¹⁾	N/A	N/A	108	24.314
2001	225	26.941 ⁽¹⁾	N/A	N/A	109	18.795
2002	230	27.521 ⁽¹⁾	N/A	N/A	127	20.582
2003	249	28.100	71.540	2,55	127	20.820

⁽¹⁾ Estimation.

Chart 1. Evolution of the Union Catalogue of Periodicals and the HILL-net.

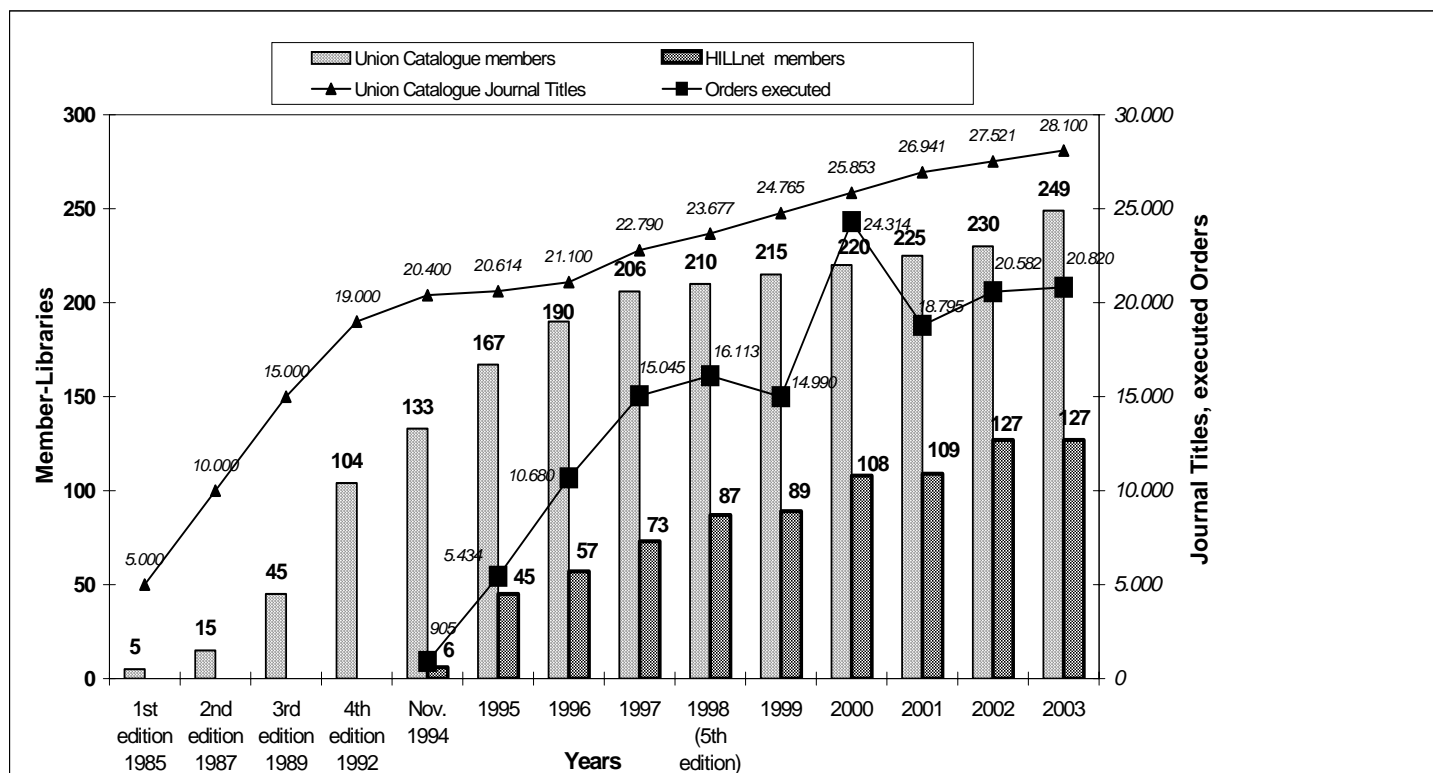


Chart 1 depicts the evolution of both the Union Catalogue of Periodicals and the HILL-net. The left y axis charts the number of libraries included in the Catalogue as well as those participating in the HILL-net. The right y axis charts the number of unique titles included in the catalogue, as well as the number of orders executed by the network members during the year of operation shown on the x axis. Five of the dates on the x axis correspond to the printed editions of the “Union Catalogue of Periodicals in the Scientific Libraries” (1985, 1987, 1989, 1992 and 1998). In addition, the numbers of journal subscriptions paid by the libraries and the overlapping coefficient of the corresponding years are included in Table I. The Union Catalogue of Periodicals currently consists of 249 libraries, which sum 28,100 unique journal titles corresponding to 71,540 subscriptions. This currently raises the overlapping coefficient to 2.55 subscriptions per journal title, which means that for each title in the country libraries pay more than twice the price in duplicate subscriptions. These figures also reflect the size of the total national collection of periodicals, as almost all major libraries are included in the Union Catalogue. After nine years of operation, the HILL-net currently includes 127 active member libraries, which have cumulatively sent 147,678 online orders.

The structure of the Network

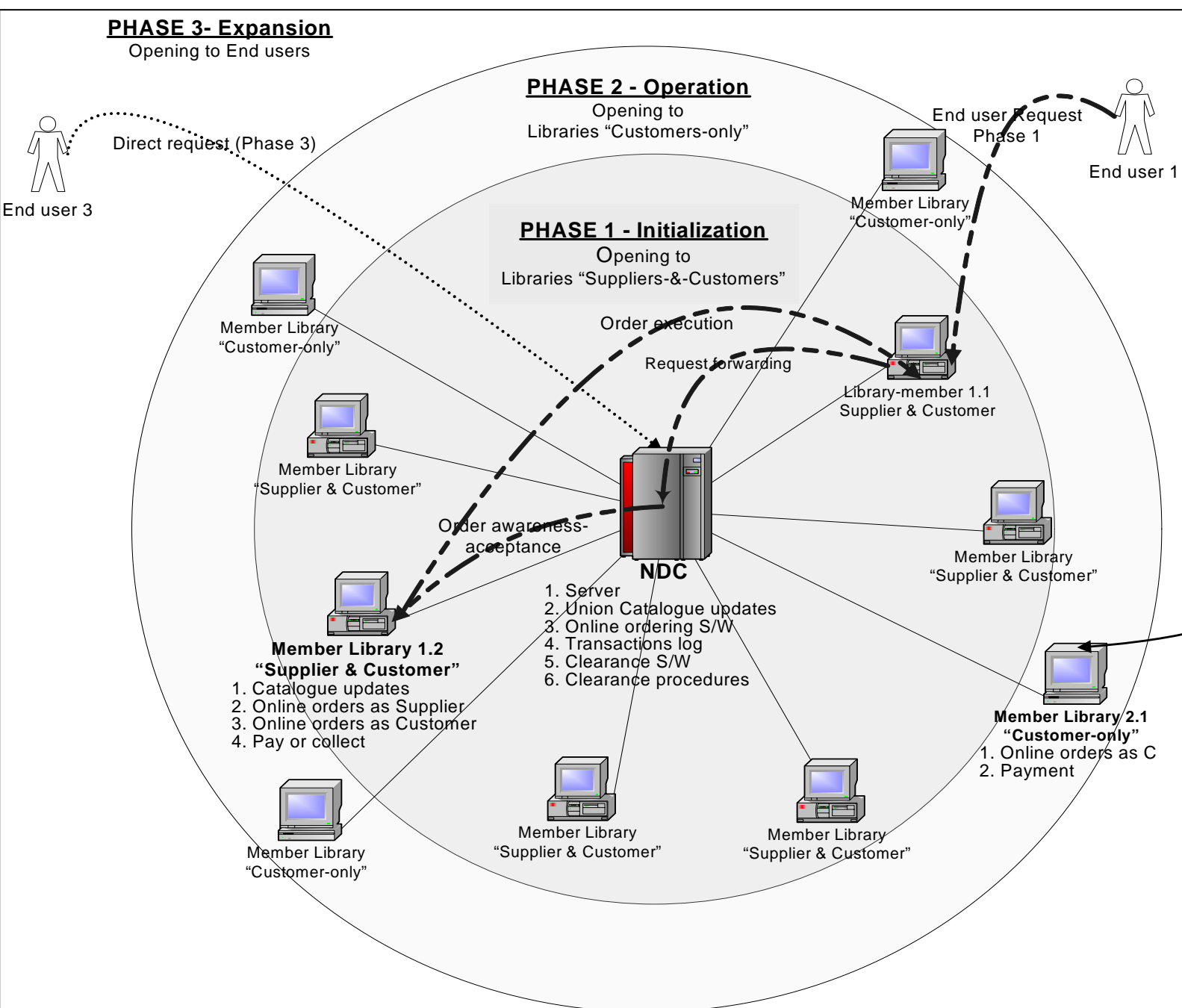
The development of the network is based on a radial model (figure 1). This model requires a central host (or server) equipped with:

- A Union Catalogue of Periodicals including the mechanism and procedures of regular updating

- An online ordering system
- A system of keeping details of transactions (e.g. supplier's code, customer's code, order date, order code, order information, order status, status date, etc.)
- A clearance system and a money collecting and return procedure for the executed orders, agreed by the library members.

The Union Catalogue is a “slave type” one, as it is updated by the staff of NDC with data sent regularly by the member libraries, concerning changes of their local catalogues. Updates and data entry are still carried out off-line and manually! All member libraries are located on the periphery of the circle, while the centre of the cycle shows the NDC, its host computer and the Union Catalogue installed, maintained and updated locally. All administrative and managerial procedures of the system, such as password assignment, statistics, clearance mailings and reconciliation are also carried out centrally by the NDC staff.

Figure 1. The radial type model of the Hellenic Interlibrary Loan Network. Structure and operation



Central support is provided by the NDC, which is the founder of the HILL-net. The NDC plays a dominant role in the network by offering the entire infrastructure required in the central level, which includes:

- running of the host computer or the server
- set-up of the Data Base Management Systems for the Union Catalogue of Periodicals
- a system for the management of online ordering
- a system of statistics and invoice production
- the money collection and clearance mechanism
- the update procedure for the Union Catalogue of Periodicals, in collaboration with member libraries
- basic user training activities through specialised seminars
- user support activities through visits to users' workplaces
- operation of a help desk for everyday problem solving
- the promotion of the Libraries Network to potential member libraries, end users (Higher Education faculty, researchers, business managers and scientists) and decision making groups
- participation in projects for the financial support of the Network development and expansion
- organisation of annual workshops, seminars and conferences.

The operation of the ILL Network

Three phases were foreseen for the complete development of the Network as illustrated in figure 1. In the first phase of the operation, only libraries which could act both as suppliers and customers was decided to participate. The main reason for this decision was the formation of a critical mass of journal titles offered by the supplier libraries and the elimination of possible system malfunctions (mainly at the beginning of the Network's operation). This means that libraries which could only act as customers were excluded from the first phase. In the second phase, after the procedures and functions were consolidated, the participation of "customers only" libraries, were included. During these two phases the individual end users (end user 1 and end user 2 in figure 1) have to address the libraries of the first or the second circle (see member library 1.1 and 2.1 correspondingly in figure 1) in order to submit their requests for articles included in the collection of "supplier" libraries of the inner circle (member library 1.2 in figure 1). Individual end users are permitted to directly exploit the services of the network (customer-initiated ILL) during the third phase (end user 3 in figure 1) after the clearance and the mechanism of money collection has been well-established.

An end user has first to consult the Union Catalogue of Periodicals in its most recent printed version (Tsimpoglou, 1998), its CD-ROM or web version http://iris.ekt.gr:1111/skp/skp_search.login_1 in order to identify the libraries that have the requested journal titles in their collection. They then contact the closest member library, asking the local librarian to order online the article(s) requested. A prepayment is usually required before sending the order to the host. The system also

permits the user to order articles without the use of the Union Catalogue of Periodicals. However, searching and checking the Union Catalogue of Periodicals in advance is an important factor (Ruthven and Magnay, 2002), resulting in a relatively high response rate, varying from 92% of requests in 2000 to 80% in 2001. This seems to be comparable to the means values of the fill rate for borrowing material, as reported for North American Libraries surveyed in 2001/2002 by ARL (Jackson, 2003). Options are available to the customer library for delivery via normal mail or fax to the address of the end user or the customer library. After an online order has been submitted, it is recorded in a special database on the server, including all details of the order. Supplier libraries can easily be informed about pending orders concerning their own collections immediately. On the supplier side, the system automatically updates the status of the processed order (received, executed or rejected) and the date-time that the status changed. Each customer can be informed about his/her orders forwarded to any one of the suppliers. Furthermore, the customer library has the option of setting priorities to potential suppliers; if an order is rejected or not replied by the potential supplier after a certain number of days (equal to the average response time of the previous semester) then the order is automatically transmitted to the next supplier.

According to this model each customer library needs to have access only to a single point (the Union Catalogue on the server of the NDC) in order to be informed about the existence of a journal title in the national collection and then submit online an order to one or more supplier libraries of the HILL-net. Each customer library considers all others as a unified system from which documents can be supplied. In a similar way each supplier library needs to have access only to one point i.e. the transaction database of the server in order to be informed about the orders submitted for articles in its own collection. This centralised radial model reduces to a minimum the tasks that are undertaken by the individual libraries in the periphery, whether customers or suppliers. It also reduces requirements in hardware, software and networking for the participating libraries, as well as procedures such as clearance, accounting and payments, hardware and software maintenance, human resources for technical support and, of course, the overall cost.

Pricing policy and clearance procedures

All participating libraries either belong to non-profit organisations or have a non-profit orientation. The NDC has an advisory role in pricing policy, as the final decisions are taken by an open committee of the participating libraries. A totally free of charge policy was rejected from the beginning, because such a policy could create funding problems to the main supplier libraries by transferring the whole burden of service to them and thus discouraging their participation after a period of time. Instead, a partial cost covering policy has been adopted, including the cost of reproduction (photocopies) and the mailing charges of orders. A common pricing policy has been introduced by the NDC and adopted by all participating libraries.

A crucial issue of the HILL-net operation is the periodic clearance of transactions. At the end of every semester a clearance is carried out followed by the collection and redistribution of the money due. It was decided the only viable solution was the NDC undertakes the whole clearance procedures. Following the centralised clearance model, the number of invoices or credit notes actually produced and sent every time is

exactly equal to the number of member libraries which are active during the time period under clearance. The maximum number of invoices to be produced and sent is equal to the total number of participating libraries.

Alternative approaches, such as that of allowing the libraries to settle the clearance on their own, were rather unrealistic. The number of invoices to be sent following a decentralised method could almost reach the square of the number of active libraries, as each one of the libraries would have to estimate, produce and send a number of invoices equal to the number of active members minus one and then try to collect the money from all other libraries with which transactions had taken place; at the same time, each library would have to send payments to all the libraries it dues. The centralised method followed means that, in the case of 127 active libraries, a maximum of only 127 invoices or credit notes are calculated, prepared and sent by the NDC, instead of 16,002 [= 127 x (127-1)] invoices that would have to be calculated, prepared and sent by the individual 127 libraries in the case a decentralised clearance method was followed.

Conclusions

Some reliable conclusions can be drawn not only on the basis of the logs kept by the system but also from the experience and the know-how acquired in all these years. These concern the effectiveness, the advantages and disadvantages of the radial model and especially the role of the HILL-net in the Hellenic libraries environment.

A radial type model needs a central union catalogue to operate and an organisation to develop, host and run the central ILL functions. Validation control for the bibliographic data and the holdings of each journal title precedes its inclusion in the union catalogue. As a result, all journal titles and holdings of the union catalogue appear in a uniform way. This permits easy and uniform access of all users to a single point for the identification of the libraries which hold the requested journal articles in their collections.

The main advantage of the radial type network with central administrative functions is the participation of a large number of small libraries. Their access to the central union catalogue and the ordering system is independent of the possibly low quality of the data networks used by small peripheral libraries. This is feasible due to the nature and the limited requirements of the radial type model; even smaller, scattered collections belonging to libraries with no sophisticated equipment can participate in such an ILL network. The participation of small libraries is crucial for national collections that sum up to 60,000 titles, although perhaps less necessary for cases where a single library collection consists of 60,000 titles. It is important to stress that the marginal value of every journal title added in such a union catalogue is proportionally higher for those countries and library networks in which there is a limited number of journal titles in the national collection or where libraries with relatively small collections are in the majority.

Furthermore, according to the radial type ILL network with central administrative functions, data for all the transactions are feasible and relatively easy to be kept on the central server, making the periodic clearance of cost a simple routine procedure and

relieving the participating libraries from the messy logistics of invoicing every library from which they accept and execute orders.

On the other hand, the data appearing in such a union catalogue, which is updated off-line and manually, may not be absolutely reliable as they are not real time data. The regular updates of the catalogue cause some problems, since an automatic procedure has not yet been implemented. The manual updates invoke additional workload for both participating libraries and the centrally supporting organisation. Add-in programmes and automated updating procedures could be implemented later, when more participating libraries have adopted standards crucial for a centralised union catalogue (e.g. uniformity of bibliographic records for the journal titles and the holdings). However, according to the experience gained in the nine years of operation of the HILL-net, indicates that delays in updates contributed little to orders being rejected.

The establishment of the Hellenic Interlibrary Loan Network was attempted in an environment with no tradition in library co-operation. A significant delay was noticed, in comparison with respective procedures in other countries (Line and Urquhart, 2002) (Ruthven and Magnay, 2002). The ILL network development transformed the absolute lack of systematic co-operation among libraries to the computerised and networked procedures of library co-operation.

In the past nine years the operation of the HILL-net has been consolidated. The Network is now regarded as a valuable resource for the participating Libraries, allowing the expansion of locally available journal collections and thus gaining the confidence of librarians and end users. ILL through the Network has been integrated into the everyday functions of member libraries. The main results of the Network's operation can be summarised as follows:

- HILL-net has created the necessary infrastructure for the intensive exploitation of the existing scattered national journal collection.
- It has created a culture of co-operation among libraries of different administrative and institutional categories and types (Academic, Hospital, Research, Special, etc.)
- It has allowed member libraries (current and future ones) to continue with the reconstruction of the national journal collection.
- Furthermore, the successful operation of the HILL-net has provided the psychological foundation needed for projects that followed, such as the creation of the Hellenic Academic Libraries Consortium known as HEAL-Link <http://155.207.114.39/> (Xenidou-Dervou, 2001) and the planned Union Catalogue of the Academic Libraries, which is currently an ongoing project (Tsimpoglou and Vouyouklis 2004). After the fundamental mechanism and infrastructure was established, the general attitude changed to recognise that the systematic co-operation among Hellenic libraries is the only way to overcome the budgetary constraints.

The national network of libraries exploits the wealth of information spread all over the country in numerous organisations by transforming past expenses to present and future investments. The co-operation has proved more effective because it was established among libraries belonging to different administrative or institutional categories.

Hellenic libraries are expected to cover the gap and continue ahead with further collaborative schemes and practices. New information technologies help in this direction. Consortium agreements for sharing resources of electronic journals have already been signed with HEAL-link.

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