

# NEW INFORMATION TECHNOLOGIES AND LIBRARIES

Edited by  
H. Liebaers, W. J. Haas, W. E. Biervliet

# NEW INFORMATION TECHNOLOGIES AND LIBRARIES

Proceedings of the Advanced Research Workshop  
organised by  
the European Cultural Foundation in Luxembourg,  
November 1984 to assess  
Technologies on Library  
Cooperation in Eur

edited by:

**H. Liebaers**

Honorary President International Federation of Library  
Associations and Institutions,  
Commissioner General Europaia, Brussels, Belgium.

**W. J. Haas**

President Council on Library Resources,  
Washington DC, U.S.A

and

**W. E. Biervliet**

Senior Research Fellow European Cultural Foundation  
Amsterdam, The Netherlands

**D. REIDEL PUBLISHING COMPANY**

A MEMBER OF THE KLUWER  ACADEMIC PUBLISHERS GROUP

DORDRECHT / BOSTON / LANCASTER / TOKYO

Published in cooperation with  
NATO Scientific Affairs Division and  
the Directorate-General for Information Market and Innovation,  
Commission of the European Communities

**Library of Congress Cataloging in Publication Data**

**CIP**

**Advanced Research Workshop on the Impact of New Information Technologies on Library Management, Resources, and Cooperation in Europe and North America (1984 : Luxembourg, Luxembourg) New information technologies and libraries.**

**Proceedings of the Advanced Research Workshop on the Impact of New Information Technologies on Library Management, Resources, and Cooperation in Europe and North America, November 1984, Luxembourg"—T.p. verso.**

**"Published in cooperation with NATO Scientific Affairs Division."**

**Includes bibliographies and index.**

**I. Library science—Technological innovations—Congresses. 2. Library science—Data processing—Congresses. 3. Libraries—Automation—Congresses. 4. Information storage and retrieval systems—Congresses. I. Liebaers, Herman. II. Haas, W. J., 1924— III. Biervliet, Wim. IV. North Atlantic Treaty Organization, Scientific Affairs Division. V. Title.**

**Z678.9.A1N38 1984 025.3'028'5 85-19566  
ISBN 90-277-2105-X**

---

**Published by D. Reidel Publishing Company,  
P.O. Box 17, 3300 AA Dordrecht, Holland.**

**Sold and distributed in the U.S.A. and Canada  
by Kluwer Academic Publishers,  
190 Old Derby Street, Hingham, MA 02043, U.S.A.**

**In all other countries, sold and distributed  
by Kluwer Academic Publishers Group,  
P.O. Box 322, 3300 AH Dordrecht, Holland.**

**All Rights Reserved**

**© 1985 by D. Reidel Publishing Company, Dordrecht, Holland  
No part of the material protected by this copyright notice may be reproduced or  
utilized in any form or by any means, electronic or mechanical  
including photocopying, recording or by any information storage and  
retrieval system, without written permission from the copyright owner**

**Printed in The Netherlands**

## FOREWORD

The nucleus of this volume consists of a number of papers presented at the Advanced Research Workshop on "The Impact of New Information Technologies on Library Management, Resources and Cooperation", held in Luxembourg from 19-23 November 1984.

The Workshop was a joint effort of four international organisations. The Scientific Affairs Division of the North Atlantic Treaty Organization, through a personal commitment and interest expressed by Dr. H. Durand, Assistant Secretary General for Scientific Affairs, was the first and major sponsor acting as a catalyst in enabling the Workshop to take place. Through its support for travel and subsistence costs of some of the North American participants, the Workshop could become a platform for the exchange of ideas between parties concerned with information handling and transmission and information policy in Western Europe and North America.

The Directorate General for Information Market and Innovation of the Commission of the European Communities hosted the Workshop in its facilities - the Jean Monnet Building in Luxembourg - also providing for simultaneous translation in the main languages of the European Community. Moreover, the Commission generously funded the participation of key participants from Community countries and provided participants with ample information on existing Community programmes related to electronic publications, electronic transmission of documents, copyright problems, problems of standards, telecommunication, and so on.

The Council of Europe supported attendance from Sweden, Austria and Spain. And lastly, the European Cultural Foundation organised the event on behalf of all these organisations.

Co-chairing and organisation were the responsibility of the undersigned. It attracted more than 100 European and North American participants from national and research libraries, policy-making circles, library and information management associations, and intergovernmental and non-governmental organisations. Participants came from sixteen European countries, the United States of America, and Canada; there were also representatives from professional associations such as IFLA, FID, LIBER and ASLIB; the Research Libraries Group

in North America; and the Commission of the European Communities and its advisory committee of national representatives for scientific information and documentation.

The Workshop sought and succeeded in paving the way for a European Council of Research Libraries. Working groups elaborated upon the policy and programme of the Council and made recommendations for European and Intercontinental Library Cooperation, European New Technology initiatives of relevance to libraries and Education and Training.

Apart from papers presented at the Workshop, this volume incorporates two excellent papers by Henriette D. Avram on "The Linked Systems Project" and by Patricia Battin on "The Electronic Library" which were presented at an Intercontinental Conference sponsored by the Research Libraries Group during the first week of October 1984, at Stanford, California.

The proceedings provide solid overviews of trends and developments in Europe and North America in fields such as online information systems, library networking, application of new technologies, and education and training. Infrastructures for library cooperation in North America such as the Council on Library Resources and the Research Libraries Group in the United States of America and the Nordic Council for Scientific Information and Research Libraries and LIBER in Europe are being described in detail.

Case-studies are being provided on innovative new technology projects such as the Optical Disk Programme of the Library of Congress and the Linked Systems Project involving the Washington Library Network, the Library of Congress and the Council on Library Resources.

Readers will be both impressed by the potential of the Information Market of the European Community with its 320 million people after the formal accession of Spain and Portugal in January 1986 and its initiatives such as the APOLLO project (Article Procurement with Online Local Ordering) and programmes in the field of electronic document delivery and be faced with the gap between North America and Europe as far as new technologies and libraries are concerned.

The degree to which European libraries should make a concerted effort to join the Western Information Society may be assessed based on the ten propositions described by Rutherford D. Rogers in "The Western Information Society", while any blueprint for the future will certainly consider the phase-wise imaginative approach by Patricia Battin in

"The Electronic Library".

Cooperation being the reason for and the object of the Workshop, and functional standardisation enhancing and facilitating cooperation, the editors do however appreciate and hence did not intervene in such aspects of linguistic diversity as expressed by 'catalogues' and 'catalogs'.

We wish to thank the authors for permission to incorporate their papers and Wim Koops for his valuable suggestions.

July 1985

Herman Liebaers  
Warren J. Haas  
Wim E. Biervliet

## AFFILIATION OF AUTHORS

### **EDITORS**

H. Liebaers, Honorary President International Federation of Library Associations and Institutions, Commissioner-General Europalia, Brussels, Belgium.

W.J. Haas, President Council on Library Resources, Washington D.C., USA.

W.E. Biervliet, Senior Research Fellow, European Cultural Foundation, Amsterdam, The Netherlands.

### **AUTHORS**

R.K. Appleyard, Director General for Information Market and Innovation, DG XIII, Commission of the European Communities, Brussels, Belgium.

H.D. Avram, Assistant Librarian for Processing Services. Library of Congress, Washington D.C. USA.

P. Battin, University Librarian, Columbia University, New York, USA.

K.T. Bivins-Noerr, Managing Director, Information Management & Engineering Ltd. Kingston upon Thames, United Kingdom.

A. Bossers, Deputy Director PICA, Royal Library, the Hague, the Netherlands.

D. Buckle, Director OCLC Online Computer Library Center, Inc., Birmingham, United Kingdom.

L. Costers, Director PICA, Royal Library, the Hague, the Netherlands.

- H. Durand, Assistant Secretary General responsible for Scientific and Environmental Affairs, North Atlantic Treaty Organization, Brussels, Belgium.
- G.W.P. Davies, Head of European Networks Services, Commission of the European Communities, Luxembourg.
- E. Gaskell, Head of Library, Commission of the European Communities, Brussels, Belgium.
- P. Gavin, Bibliotheque Cantonale et Regionale de Lausanne, Switzerland.
- R. Georis, Secretary-General, European Cultural Foundation, Amsterdam, the Netherlands.
- P. Goossens, Royal Library, Brussels, Belgium. President European Library Automation Group, ELAG.
- R.M. Hayes, Dean, Graduate School of Library and Information Science, University of California, Los Angeles, USA.
- L.A. Holm, Group manager, Norwegian school of Library and Information Science, BRODD, OSLO, NORWAY.
- C. Lee Jones, Program Consultant, Council on Library Resources, Texas, USA.
- W.R.H. Koops, Bibliotecaris, Universiteitsbibliotheek Groningen, the Netherlands. Chairman IFLA Advisory Committee for UAP.
- F. Kroller, President LIBER, Universitätsbibliothek, Graz, Austria.
- J.E.S. Larive-Groenendaal, Member of European Parliament, Strasbourg, France.
- D. Lewis, Director, ASLIB, The Association for Information Management, London, United Kingdom.
- D.A. Marcum, Program Consultant, Council of Library Resources, Washington D.C., USA.



- M. Marschall von Bieberstein, Director for Education, Culture and Sport, Council of Europe, Strasbourg, France.
- R. McCoy, President, Research Libraries Group, Stanford, California, USA.
- P. Nauta, Director, School of Library/Info. Science, Bookselling & Publishing, Amsterdam, the Netherlands.
- T. Oker-Blom, Secretary General, NORDINFO, the Nordic Council for Scientific Information and Research Libraries, Esbo, Finland.
- O. Porotnikoff, Head, Department of Acquisitions, the Royal Library Copenhagen, Denmark.
- J. Price, Director, Optical Disk Pilot Program, The Library of Congress, Washington, USA.
- D. Russon, Head of Forward Planning, The British Library Lending Division, West Yorkshire, United Kingdom.
- R.D. Rogers, Librarian, Yale University, Connecticut, USA.
- M.J. Sharrow, Chief Librarian, University of Toronto, Ontario, Canada.
- I. Solvberg, RUNIT/BIBSYS, University of Trondheim, Norway.
- B. Stuart-Stubbs, Director, School of Library, Archival and Information Studies, University of British Columbia.
- C. Vernimb, Coordinator for Application of New Information Technologies DG XIII of the Commission of the European Communities.
- T.D. Wilson, Head, Department of Information Studies, University of Sheffield, Sheffield, United Kingdom.
- D.A. Marrow, Program Consultant, Council of Library Resources, Washington D.C., USA.

## CONTENTS

<b>FOREWORD</b>	ix
<b>AFFILIATION OF AUTHORS</b>	xiii
<b>CHAPTER I. INTRODUCTION</b>	
Editorial	
Herman Liebaers, Warren J. Haas and Wim E. Biervliet	3
The Western Information Theory	
Rutherford D. Rogers	11
Commission of the European Communities - Information Market and Innovation	
Raymond K. Appleyard	19
NATO: Civil Science and Environmental Programmes	
Henry Durand	23
European Parliament - Committee on Youth, Culture, Education, Information and Sport	
Jessica Larive-Groenendaal	26
Council of Europe - Directorate for Education, Culture, and Sport	
Michael Marschall von Bieberstein	28
European Cultural Foundation	
Raymond Georis	29
IFLA (International Federation of Library Associations and Institutions)	
Wim R.H. Koops	32
<b>CHAPTER II. INFRASTRUCTURES FOR LIBRARY COOPERATION</b>	
Towards a European Council of Research Libraries	
Herman Liebaers	37
The Development and Present Program of the Council on Library Resources	
Warren J. Haas	43
Explanatory Paper on the European Parliament's Resolution regarding the Creation of a European Library	
Eric Gaskell	50
LIBER and Research Library Cooperation in Europe	
Franz Kroller	70

The Nordic Council for Scientific Information and Research Libraries Teodora Oker-Blom	79
---	----

### CHAPTER III. ONLINE INFORMATION SYSTEMS

The Need for a Policy Framework for the Development of the Information Market Garth W.P. Davies	93
Information Retrieval Networks compared to Library Networks in Europe Kathleen T. Bivins Noerr	97
Online Developments and their Impact on Libraries Dennis A. Lewis	101
North American Developments in Online Information Systems Marilyn J. Sharrow	110
OPAC: Online Public Access Catalogue Pierre Gavin	121

### CHAPTER IV. LIBRARY COOPERATION

Research Library Cooperation Richard W. McCoy	129
Project Proposals for Library Cooperation in Europe Paula Goossens	137
Overview of Trends and Developments of Library Networking in Europe Look Costers and Anton Bossers	149
Trends and Developments in North American Library Networks C. Lee Jones	158
Development and Implementation of an Intelligent Gateway to Library Systems Ingeborg Sølvsberg	170
CLR's Network and online Catalog Projects: The BSDP C. Lee Jones	177
The Creation of a Multi-Lingual Subject Heading Scheme based on the LCSH Paula Goossens	185
OCLC in Europe David Buckle	192

**CHAPTER V. NEW TECHNOLOGIES**

The Electronic Library - A Vision for the Future	
Patricia Battin	201
Libraries and Electronic Document Delivery	
David Russon	219
The Role of the Commission of the European Communities in the Promotion of Electronic Document Delivery in Europe	
Carlo Vernimb	227
A series of Surveys on the Application of New Technologies in European Libraries	
Olga Porotnikoff	236
The Linked Systems Project: It's Implication for Resource Sharing	
Henriette D. Avram	244
Application of the Optical Disk by the Library of Congress	
Joseph W. Price	261

**CHAPTER VI. EDUCATION AND TRAINING**

Trends in Library Information Science Education and Training in Europe	
Paul Nauta	269
Trends in Library Education and Training in the USA	
Robert M. Hayes	280
Professional Education and Training for Research Librarianship: A Program of the Council on Library Resources	
Deanna B. Marcum	290
Trends in Library Education and Training in Canada	
Basil Stuart-Stubbs	295
From Librarianship to Information Management; The Development of a Postgraduate Department of Information Studies	
Tom D. Wilson	306
Summer Schools in Library Automation for Library Scholars and Professionals from all types of Libraries	
Liv Aasa Holm	311

**CHAPTER VII. CONCLUSIONS AND RECOMMENDATIONS**

Management and Policy Aspects of the European Council for Research Libraries (ECRL)	321
Programme Recommendations for ECRL	324
European Library Cooperation.	327
Intercontinental Cooperation	330
European New Technology Initiatives	334
Education and Training	336
Achievements so far - Perspectives for future developments Herman Liebaers, Warren J. Haas and Wim E. Biervliet	338
<b>LIST OF WORKSHOP PARTICIPANTS</b>	343
<b>WORKSHOP PROGRAMME</b>	351

## CHAPTER I. INTRODUCTION



## EDITORIAL

Rutherford D. Rogers, Yale University Librarian, in his opening address asked the meeting to consider ten propositions, which constituted 'megatrends' serving as a structuring device and catalyst related to the subject of the Workshop, "The Impact of New Information Technologies on Library Management, Resources and Cooperation". He stressed that the remarkable volume of information and the presently sophisticated means of handling it did not occur overnight but are a reflection of a discernible evolutionary process, which is far from over, involving technical developments and societal need. Online computer data in commercial and specialized databases will soon be greatly expanded and will be facilitated by Linked-Systems Project technology and telefacsimile. However conventional library collections are far from being supplanted by the limited amount of online data. Information packaged in new formats tends to be incremental to conventional formats rather than displacing the latter.

Raymond Appleyard, Director General for Information Market and Innovation, Commission of the European Communities, noted the pre-eminent role of libraries in the access to knowledge and culture, the importance of which is likely to increase with the shift to a society already consciously more and more centered upon information and its utilisation. Reference was made to the five-year programme in the specialised information field that gives the Commission a mandate to help libraries to make full use of the new technological developments, not only in their own operations but more especially in their services to users and their full integration into the information distribution process.

Henry Durand, Assistant Secretary General for Scientific and Environmental Affairs, NATO, indicated that the Workshop is a typical example of one of several activities undertaken under the auspices of the NATO Science Programme, which sees a need to bring together experts working in fields undergoing very rapid technological change.

In the other courtesy speeches, the European Parliament indicated the need for a European policy for libraries and that such a policy would fit within the framework of the Treaty of Rome; the Council of Europe emphasised its



particular concern to make sure that attempts at improving cooperation among libraries and a European Council on Library Resources will bring together libraries in all twenty-three countries of the Council for Cultural Cooperation; the International Federation of Library Associations and Institutions (IFLA) referred to the joint statement of a group of European librarians (members of GELC) and a group of European librarians (members of IFLA), dealing with the impact of electronic technology and, in particular, its effect on scientific scholarly, and professional information and the role publishers and libraries should play in this area. It has become accepted that libraries and library networks not only can and should play a vital role in the provision of information in its traditional forms but also that they provide an obvious and suitable infrastructure for access to information and the supply of documents in electronic form.

Chapter II 'Infrastructures for Library Cooperation' provides the reader with evidence as to the need for establishing a European equivalent to the Council on Library Resources based on Liebaers' 'Towards a European Council on Research Libraries' and Haas' 'The Development and Present Program of the Council on Library Resources'.

Liebaers pleads for priority assignment from a European angle for other patterns of collection building, bibliographic access, availability of publications, and transborder data flow. Similar to Rogers indicating that no single institution can be totally self-sufficient in information, Liebaers states that eminence can no longer be achieved within national boundaries. Consortia in the field of research libraries and information services are, however, much less developed in Europe than in the United States.

Haas describes the Council on Library Resources, chartered in 1956, as an operating foundation to help libraries take advantage of emerging technologies in order to improve operating performance and expand services for an increasing number of users. However, the setting in which these libraries function is much changed. The Council's programme, reflecting the complexity of that setting, concentrates more than before on understanding the implications for universities, libraries and individuals of present technological capabilities and the accompanying influence of technology on economics and organisations. The present programme of CLR has five principal components: