Handbook of Legal Information Retrieval

edited by J. Bing

HANDBOOK OF LEGAL INFORMATION RETRIEVAL

edited by Jon BING

Norwegian Research Center for Computers and Law, Oslo, Norway

in cooperation with
Tove FJELDVIG
Trygve HARVOLD
and
Robert SVOBODA



NORTH-HOLLAND AMSTERDAM · NEW YORK · OXFORD

© ELSEVIER SCIENCE PUBLISHERS B.V., 1984

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any from or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright owner.

ISBN: 0444 87576 x

Published by:
Elsevier Science Publishers B.V.
P.O. Box 1991
1000 BZ. Amsterdam
The Netherlands

Sole distributors for the U.S.A. and Canada: Elsevier Science Publishing Company, Inc. 52 Vanderbilt Avenue New York, N.Y. 10017 U.S.A.

Library of Congress Cataloging in Publication Data Main entry under title:

Handbook of legal information retrieval.

Includes index.

1. Information storage and retrieval systems— Law. 2. Legal research—Data processing. I. Bing, Jon, 1944— . K87.H36 1984 025'.0634 84-1177 ISBN 0-444-87576-X (U.S.)

Printed in The Netherlands

FOREWORD

In 1977, "Legal Decisions and Information Systems", written by Jon Bing and Trygve Harvold, was published by Norwegian University Press.

During subsequent discussions with North-Holland Publishing Company, there emerged an interest in a larger-sized, comprehensive and detailed Handbook, in which on the one hand the theoretical base would be broadened and updated, and on the other hand the descriptive coverage of retrieval systems around the world would be enlarged and brought up to date as well.

The result of these endeavours, for which Norwegian University Press kindly granted permission, now lies before you.

As testified to under "Acknowledgements", the generous help from a sizeable group of persons from many countries has been indispensable to us.

Further, recent work of the Norwegian Research Center for Computers and Law has been incorporated into the general parts (I and II), derived for instance from Jon Bing's thesis on legal communication processes, and Tove Fjeldvig and Trygve Harvold's work on the principles of text retrieval. Robert Svoboda has contributed with his practical experience from a large number of European operational systems in various countries.

The international survey has been greatly expanded and covers currently 25 countries. A historical introduction and a section on international organisations have been added. Also the survey of research in text retrieval has been enlarged.

It must be appreciated, however, that the book does not claim to be complete or correct in all details.

vi Foreword

We hope that readers finding omissions, errors and misunderstandings will not hesitate to communicate these to the authors at the address of NRCCL (given at the end of the Foreword). We would also appreciate to be made aware of relevant literature, including newsletters published by legal information services for the benefit of their users. North-Holland has indicated that there may be a possibility for later editions of this Handbook, and we certainly will appreciate the possibility not only to report on further developments, but also to amend and further update the descriptions of the different systems.

This book is the result of team-work. For practical reasons, Jon Bing has written the text giving it a uniform style, while using contributions from the other authors - especially in Part II.

This implies that the book is written by someone not having English as his mother-tongue. This will be obvious from the idiosyncracies of the text. We hope the users will excuse the lack of elegance and the "nordicisms" of grammar, choice of words, etc.

The whole production up to a camera-ready copy has been made in Oslo. This implies also that the manuscript has been proof-read in Oslo - under the same limitations. We are painfully aware of the fact that there still are too many errors in the text, reflecting that the proof-reading proved to be a process we had grossly underestimated in terms of time and resources. However, without the expert help of Gunnar Bach, we would have been completely lost.

The production of this book has been organised as a project within the NRCCL research programme NORIS. The project has been partially funded by outside sources. We would like to thank the Royal Norwegian Council for Scientific and Industrial Research (NTNF), which has funded the NRCCL studies of text retrieval over the past years, the Bergen Bank Foundation which has made a study trip possible in 1983, and Emil Mostue who has made it possible for NRCCL to subscribe to several foreign legal information retrieval services. We also would like to thank our friends and colleagues for support and encouragement, which one more has proved the value of working within the framework of collective enthusiasm at the NRCCL.

Foreword vii

Lastly, we would like to thank Dr. K. Michielsen of North-Holland for his support and patience through the several years that this book has been in the making.

Skillebekk, March 1984.

Address: Norwegian Research Center for Computers

and Law,

University of Oslo, Niels Juels Gt. 16, N-0272 Oslo 2,

Norway.

ACKNOWLEDGEMENTS

In writing this book, we have had the benefit of advice, comments and information from many sources and in many forms. We would like in general to thank all our friends around the world and in Norway who have helped us to collect information. They are not the ones who should be blamed for eventual misrepresentations or omissions in the text, rather they have been instrumental in preventing these faults from being even graver.

Though we cannot mention individually all those who have contributed in some way or the other, we would like to thank the following persons for commenting directly on draft versions of text sections:

Directeur Louis Barbet, Centre de documentation et d'informatique, Paris; Professor Roger Brown, Faculty of Law, University of Tasmania; York Brusse, Bundesministerium der Justiz, Bonn; Professor Yaacov Choueka, Bar-Ilan University, Israel; Director Costantino Ciampi, Istituto per la documentazione giuridica, Lecturer Marc Fallon, Université de Louvain; Florence; Margaret Anne Foster, Canadian Law Books Ltd.; Sven Yves Poullet, Centre de Recherches "Informatique et Droit", Facultés universitaires Notre Dame de la Paix, Namur; Professor Bryan Niblett, Department of Computer Science, University College of Swansea; Anja Oskamp, Computer/Law Institute, Free University of Amsterdam; Professor Gerald Salton, Department of Computer Science, Cornell University; Stephen Saxby, Faculty of Law, University of Southampton; Professor Peter Seipel, Swedish Law and Informatics Research Institute, University of Stockholm; Professor Guy Vandenberghe, Interfacultair Centrum voor Management, Rijksuniversiteit Gent.

TABLE OF CONTENTS

PART	c I:	Legal decision and communication processes	1
1	Cont	cext of retrieval systems	3
2	Deci	sion processes	6
	2.2	Introduction Initiation The facts of the case	10
		2.3.1 The probable facts of the case 2.3.2 The proven facts of the case	10 11
	2.4 2.5 2.6	The retrieval process	13 18 26
		2.6.1 Relevancy of sources - weight of arguments2.6.2 Words and uncertainty2.6.3 Harmonization	26 30 34
	2.7		37
	2,9	and feedback from the result Standards for legal information retrieval	40 44
3	Comm	nunication processes	50
	3.1 3.2		50
		Data base selection	52
		3.2.1 Introduction 3.2.2 Selection 3.2.3 The data base	52 54

		(1) Representativity(2) Objectivity(3) Updating	59 63 66
3.3		ditorial process: ent design	69
		Documents Three typical forms of	69
		documents	74
		(1) Indexes	74
		(2) Abstracts(3) Authentic text	79 83
	3.3.3	Functional performance	84
		(1) Introduction	84
		(2) The retrieval function(3) The relevance function	86 93
		(4) The source function	97 97
		(5) The current awarness function	100
	3.3.4	Conclusions	102
3.4	The in	nformation system	105
	3.4.1	Elements of the	
		information system	105
	3.4.2	Information - and on what	106
		(1) The concept of infor- mation	106
		(2) The subject of infor-	
		mation	109
3.5	Using t	the information system	113
	3.5.1	User-constructed	445
	3.5.2	information systems Availability factors	113 115
		(1) Introduction	115
		(2) Pragmatic and formal availablity factors	117
		(3) User research on	117
		availability factos: An example	118

	3.5.	2 The	cost curve	120
		(1)	Area of interest - area of documentation	120
		(2)	The local data base: The concept of coverage	122
		(3)	Factors determinig the cost curve	125
		(4)	Availability discri- mination	129
	3.5.	4 Acti	ive and passive use of ormation systems	131
		(2)	Introduction Functional performance Delegation	131 133 135
	3.5.	5 Tech cost	nnological change and cs	137
PA	RT II: Text	retri	leval	141
4	Anatomy of	text	retrieval	143
	4.1 Introdu	uction	n .	143
]	cetrie	ng an information eval system of an information	143
	4.1.3	etrie Differ	eval system Tent user situations	145 148
	4.2 Charact	erist	ics of text retrieval	151
	4.2.2 H	ull t	ent retrieval ext retrieval est retrieval	151 151 152
	4.3 The ret	rieva	1 process	154
	4.4 Choosin	g the	data base	157

4.5 Retrieval strategies

Table of contents

хi

160

4.5.1 Introduction 4.5.2 The retrieval function	160 160
 (1) Simulating relevance assessment (2) Identity functions (3) Nearness functions (4) Combinations of identity and nearness functions 	160 161 164 173
4.5.3 Iterative techniques	175
 (1) Introduction (2) Relevance feedback (3) Local metrical feedback (4) Computerized processing of search requests - snowball functions (5) A preprocessor to text 	175 176 177 178
retrieval systems	178
4.6 Aids in formulating search requests	180
<pre>4.6.1 Formulating the request 4.6.2 Examples of different aids</pre>	180 181
(1) Truncation(2) Mask functions(3) Automatic stemming(4) Thesaurus	181 182 182 182
4.6.3 Choosing the level of performance	183
1.7 Examples of file structures	185
4.7.1 Inverted file structure 4.7.2 Vector based systems	185 189
4.8 Appendix I: Some important text retrieval systems	190
1.9 Appendix II: The concept of relevance	197
4.9.1 Types of relevance: Formal, content, and subjective relevance	197
- OTCARIOC	19/

	Table of contents	xiii
	4.9.2 The nature of relevance: Absolute and relative relevance 4.9.3 The grading of relevance:	199
	Grading by degrees or binary grading? 4.9.4 The relevance concept as used in this book	199 202
5	Research regarding the performance and design of text retrieval systems	204
	5.1 Introduction 5.2 General research	204 207
	5.2.1 The Aslib-Cranfield projects: 1960-1966 5.2.2 The SMART project: 1964-1983 5.2.3 The MEDLARS evaluation: 1966-1967 5.2.4 The "Comparative Systems	207 209 214
	Laboratory Experiments" Projects: 1963-1968	217
	5.3 Development and design of text retrieval systems	218
	5.3.1 The CONDOR project: 1973-1981 5.3.2 The SPIRIT system	220 222
	5.4 Research regarding legal systems	226
	5.4.1 The joint ABF/IBM project: 1966-1967 5.4.2 The Oxford experiments:	226
	1963-1965, 1976-1982 5.4.3 The Responsa project:	227
	1967-1983 5.4.4 The WIENER SYSTEM 5.4.5 The MAJUS program: 1974-1977 5.4.5 The NORIS research program:	230 233 235
	1972-1983	236

			ternational survey of legal retrieval	247
			istory of computerized legal on retrieval	249
		Introd Backg	duction round	249 251
			Libraries and indexes Jurimetrics	251 253
6	5.3	The in	nitiative	
		6.3.2	The Pittsburgh project The Aspen Systems Corporation The Oxford experiments	257 260
€	5.4	A proi	fusion of projects	264
		6.4.2	Introduction Law Research Services, Inc RIRA: Reports and Information Retrieval Activity	264 265 268
7 C	lurr	ent in	nformation systems	272
			national organizations	272
-		7.1.1	Introduction	272
		7.1.3 7.1.4 7.1.5 7.1.6	Intergovernmental Bureau of Informatics The Council of Europe The European Communities EURONET DIANE World Health Organization INTERDOC	273 274 278 285 286 286
7 7	.2 .3	Argent Austra	tina alia	288 289
		7.3.2	Introduction The SCALE project Future developments in Australia	289 290 292
		Austri Belgiu		294 298

	7.5.1 Introduction 7.5.2 CREDOC 7.5.3 JUSTEL 7.5.4 Samsom	298 299 305 307
	Brazil Canada	309 311
	7.7.1 Introduction 7.7.2 Quebec: From DATUM to SOQUIJ 7.7.3 From QUIC/LAW to QL Systems 7.7.4 Carswell Legal Publications	311 314 322 330
7.8	Denmark	
	7.8.1 Introduction 7.8.2 DC-jura 7.8.3 DATA LEX	331 333 335
	Finland France	337 341
	7.10.1 Introduction 7.10.2 IRETIJ 7.10.3 CEDIJ 7.10.4 SYDONI 7.10.5 JURIS-DATA 7.10.6 LEXIS 7.10.7 Specialized or regional information systems	341 345 350 356 359 360
7.11	Germany	367
	7.11.1 Introduction 7.11.2 JURIS	367 373
	(1) Introduction(2) JURIS pilot system(3) Extended JURIS system	373 376 382
	7.11.3 DATEV	384
7.12 7.13	Greece Holland	388 390
	7.13.1 Introduction 7.13.2 Kluwer JURID 7.13.3 The PARAC - Vermande project	390 391 393

Table of contents

 $\mathbf{x}\mathbf{v}$

7.15	Irelan Israel Italy		395 396 397
	7.16.2	Introduction ITALGIURE Istituto per la	397 399
	7.16.4	documentazione giurdica Camera dei deputati	408 409
7.18	Japan Luxemb Mexico	purg	412 413 414
		Introduction UNAM-JURE	414 414
	New Ze Norway		416 418
		Introduction Lawdata	418 422
	Spain Sweden		427 429
	7.23.1 7.23.2	Introduction From RI to Raettsdata	429 431
7.24 7.25	Switze: United	rland Kingdom	440 441
	7.25.1	Introduction	441
		(1) The STATUS project(2) The Society for	441
		Computers and Law (3) Universities and	443
		research institutions (4) A note on unreported	445
		cases	449
		LEXIS EUROLEX Prestel services	452 456 461
		(1) Infolex (2) Lawtel	461 462

Table of contents	xvii
7.25.5 Northern Ireland - and the BIRD systems	464
7.26 United States of America	467
7.26.1 Introduction 7.26.2 From LITE to FLITE 7.26.3 JURIS: Justice Retrieval	467 473
and Inquiery System 7.26.4 LEXIS 7.26.5 WESTLAW	476 484 497
Literature Alphabetical index	505 533
Index to figures and tables	
Fig 3/1 - Relations between the data bases of three different information systems with identical documentation areas	57
Fig 3/2 - Relations beween publication ratio and representativity	62
Fig 3/3 - Average recall-precision curves for three different types of documents	92
Fig 3/4 - Relevance assessment based on abstracts	96
Fig 3/5 - Document types and system functions	102
Fig 3/6 - Document design and system functions	103
Fig 3/7 - Causes for missing information	119
Fig 3/8 - Typical cost curve for use of information services in an average case - elbow indicating "local data	
base"	123

Fig 3/9 - Typical cost curve of small and large organizations	128
Fig 3/10 - Cost curves with and without	120
enhancement of the function performance	
of the user-constructed information system	129
Fig 4/1 - Sketch of an information	
retrieval system	146
Fig 4/2 - The retrieval process	155
Fig 4/3 - Definition of recall and precision	156
Fig 4/4 - Illustration of Boolean	,50
retrieval	162
Fig 4/5 - Example of vector retrieval	166
Fig 4/6/1 - Average rp-curves based	
on different ranking algorithms, project, NORIS (8) I	172
Fig 4/6/2 - Average rp-curves based	
on different ranking algorithms, project, NORIS (8) I	172
Fig 4/7 - B-trees	187
Fig 4/8 - Example of the file system	
in NOVA*STATUS	188
Fig 5/1 - Reasons for recall failures in the MEDLARS evaluation	24.5
	216
Fig 5/2 - Reasons for precision failures in the MEDLARS evaluation	216
Fig 5/3 - Relevance judgements based	
on different formats	218
Fig 5/4 - Performance of retrieval compared to relevance judgment	219
Fig 5/5 - Performance of conventional	,
and computerized retrieval	229