

가 : KIST

Effects Analysis of Electronic Journal Subscription on Special Library Operation: A Case Study in KIST

* . ** . *** . ****

Dae Shin Kang · Yong Su Shin · Mal Suk Shin · Hyea Jeong Yoon

- | | |
|---------|----|
| 1. | 4. |
| 2. | • |
| 3. KIST | |

가

*
(Senior Information Professional, Research Information Dept., KIST, dskang@kist.re.kr)

**
(Senior Information Professional, Research Information Dept., KIST, ysshin@kist.re.kr)

(Research Information Dept., KIST, msshin@kist.re.kr)

(Research Information Dept., KIST, hgyoon@kist.re.kr)

· : 2003 9 2

· : 2003 9 9

,
가 , 가
. , 가
가 . ,

ABSTRACT

This case study analyzed how electronic journal subscription had an effect on special library management including budget, information behavior, library operations, facilities, space et al. in KIST. This study suggests the followings; 1) Since electronic journals has an effect on overall operations of special libraries, draw big pictures not by functions. 2) Though the most method for subscription is consortium, it is necessary to build cooperation network for information sharing and vary cost architecture of information use. 3) Through job analysis, redesign jobs. 4) Reconstruct stacks and facilities. 5) It is necessary paradigm shift that it is more important to use than preserve materials in the special libraries.

KEYWORDS

Electronic Journal, Print Journal, Information Use, Special Library, Library Management

1. 가
, North Holland Pergamon
1665 Journal des 가
Scavan가 (Rao 2001) 300 .
2. 가
1990 (White
2001).

가 10 ~ 20 가

가 (Odlyzko 1995),

가 (Stratigos 2003) 51% , 35% , 3%

(Drexel) 가

(Korea Institute of Science and Technology : KIST) 가

1998 (King and Montgomery 2002). Academic 1998 170 2. 가 2003 4 30 7,300 가

가 가 (Ashcroft) (Langdon) (Ashcroft and Langdon 1999).

가

< 1>

(:)

| | | | | |
|---------|----|----|----|----|
| | | | | |
| | 13 | 10 | 17 | 40 |
| | 10 | 12 | 19 | 41 |
| | 7 | 7 | 13 | 27 |
| 가 | 15 | 10 | 21 | 46 |
| | 12 | 9 | 18 | 39 |
| (Space) | 11 | 9 | 14 | 34 |
| | 11 | 10 | 17 | 38 |

< 1>

가 IP ID, Password

가

가

(Rupp-Serrano) (Frazier)

(Rupp-Serrano, Robbins, and Cain 2002). (Big Deal) (Frazier 2001).

가 가 가

, 6 19

(archiving) 가(License) 1980

(Soete 1999).

가 , 가 가

가 , 가

가 가

가 가

가 80 20 (missing issues jobber)

80%가 20% (current journal area)

(< 2>)

(Montgomery) (Sparks) <

1998 가 3> (Montgomery and King

2002).

(Montgomery and Sparks 2000). \$ 245,000

가 25

News- (Square Foot) \$ 20

week , Scientific American

가

< 2>

(:)

| | 1998 | 1999 | 2000 | 2001 | 2002 |
|--|-------|-------|-------|-------|-------|
| | 1,710 | 1,475 | 1,000 | 300 | 370 |
| | 200 | 4,400 | 5,000 | 7,600 | 8,600 |

가

< 3 >

| | | | |
|--|------------|-----------|------------|
| | | | |
| (Space) | \$ 5,000 | \$ 40,000 | \$ 205,000 |
| (Systems) | \$ 10,000 | \$ 2,500 | \$ 2,400 |
| (Supplies & Services) | \$ (2,000) | \$ 600 | \$ 8,000 |
| / (Director/ Administration) | \$ 22,000 | 0 | 0 |
| (Communications among Staff) | \$ 7,000 | \$ 2,500 | \$ 800 |
| (Collection Development) | \$ 18,000 | \$ 6,000 | 0 |
| (Acquisitions) | \$ 8,000 | \$ 4,000 | 0 |
| : , , 가 (Physical Handling : Bindery, Labeling, Reshelving) | 0 | \$ 10,000 | \$ 22,000 |
| (Record Creation and Maintenance) | \$ 16,000 | \$ 10,000 | \$ 6,000 |
| / / (Public Relations/Communications/Publications) | \$ 11,000 | \$ 1,000 | \$ 600 |
| (Reference) | \$ 37,000 | \$ 7,000 | \$ 4,000 |
| (Teaching Users) | \$ 6,000 | \$ 1,000 | \$ 600 |
| (Others) | 0 | \$ 4,000 | \$ 6,000 |
| | \$ 125,000 | \$ 45,500 | \$ 40,000 |
| | \$ 138,000 | \$ 88,600 | \$ 255,400 |

\$ 5,000

가

가

\$ 2,000

가

가

2002

가 8,600 ,

가

가 370

3. KIST

가

가

KIST 1966

가

,

가

,

가

. 2003

300

400

가

가

70

, 170

,

600

1996

KIST

2000 Six Sigma

5

4

KIST가

가

가

24

1,100

200

가

480

100

1,800

3.1

가

KIST

1

가

가

(< 4>).

1999

2002

6.7%

가

< 4> 2002

| | | | WEB DB | | |
|--|-------|-----|--------|-----|--------------|
| | 4,208 | 107 | 7 | 782 | 4,322 (782) |
| | 70% | 5% | 14% | 11% | 100% |

, 2002

2000

가

84%,
11%

5%¹⁾,
2000

가 (KESLI : Korean
Electronic Site License Initiative)

2003

74%

가

2003

91%가

3.2

1998 Academic

170

20

190

1998 844

1999

가 Wiley, Elsevier

1,300 ,

, 1999

100

1,400

2003 5

107

. 2000

가

Drug of the Future

(KESLI)

가

2003 4,200

(< 5 >).

< 5>

| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---------------|------|-------|-------|-------|-------|-------|
| | 189 | 1,428 | 2,707 | 3,097 | 4,208 | 4,237 |
| ²⁾ | 667 | 500 | 347 | 347 | 343 | 280 |

1)

15%

10%

2)

가 , 5 가
, 6
, 가 3 가 62 .
KIST
,
3.3
. 2003
, 17 가 3.3.1
가
4 . 13
183 가
42% 76
50%
가
가 , 가
25%
107 34 가 (Boyce 1996).

가

가 , 10

3 , 30%

가

90% ~ 100%

가

, Elsevier 가

90%, Wiley

Elsevier 2002

69

2002

< 6>

가 Scripta Materialia가 \$ 1.8

Progress in Polymer Science가 \$ 52.4

29

3.32

(fulltext) ³⁾

40 , 58%

가

가

가

Journal of the American Chemical Society

가 \$ 1.15 Journal of Medicinal Chem-

istry가 \$ 3.36

Elsevier

Nature Science

< 6>

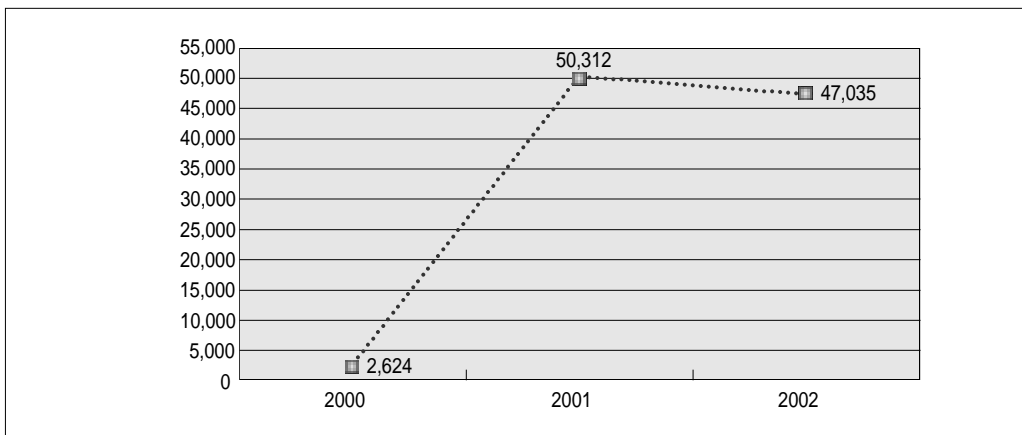
| | (A) | (B) (2002.1 ~ 12) | (C) (B × \$ 15) | (%) (C / A × 100) |
|----------|------------|----------------------|--------------------|----------------------|
| Elsevier | \$ 292,836 | 133,128 | \$ 1,996,920 | 681% |
| Wiley | \$ 58,633 | 62,628 | \$ 939,430 | 1,602% |
| IEL | \$ 38,595 | 19,680 | \$ 295,200 | 765% |
| AIP | \$ 22,106 | 24,876 | \$ 373,140 | 1,687% |
| Kluwer | \$ 21,740 | 12,768 | \$ 191,520 | 880% |
| Nature | \$ 7,707 | 8,664 | \$ 129,960 | 1,686% |
| | \$ 441,617 | 261,744 | \$ 3,926,170 | 889% |

3) × 가

가 15 238 1
 30 가 , 125,760 , 1,003
 가 18,831 13%
 . Wiley
 318 1
 47,035 (< 7>,
 < 1>), 63
 41,871 90%
 가
 Elsevier 2002 3 (Frazier)가
 2003 2 가
 80%
 1,241 238 , 20%
 가 (< 7>).

< 7> (fulltext) (2002.3 ~ 2003.2)

| | 0-99 | 100-199 | 200-599 | 600-999 | 1,000 | |
|--------------|-------------|---------|---------|---------|---------|--------------|
| Elsevier (%) | 1,003 (82%) | 90 (7%) | 87 (7%) | 31 (2%) | 30 (2%) | 1,241 (100%) |
| Wiley (%) | 252 (78%) | 25 (8%) | 24 (8%) | 9 (3%) | 8 (3%) | 318 (100%) |



< 1> Wiley (fulltext) (2000 ~ 2002)

가 82

? 가

“ . 2003 1

가 가 ” 2 4 30 4

“ , “ ” , “ 3 ,

가 ” 가

Elsevier

1

(fulltext) (< 8>, < 9>

< 8> (fulltext) - Elsevier

(:)

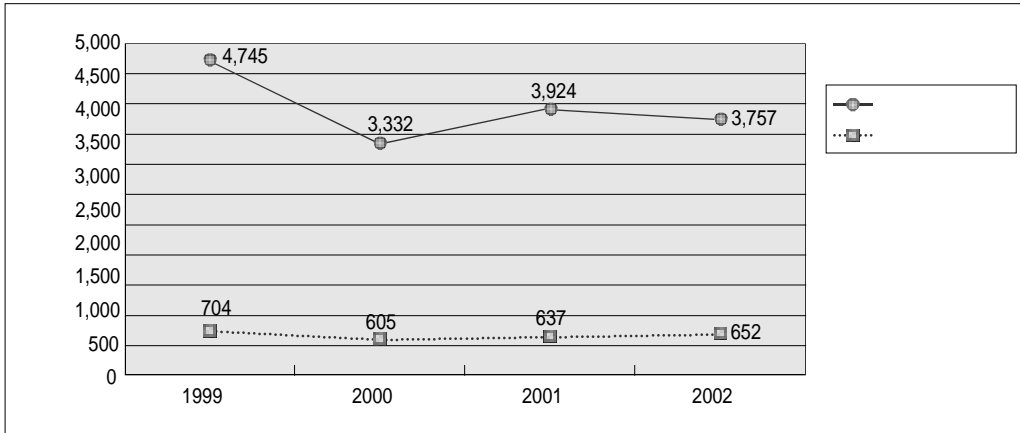
| | 02-3 | 02-4 | 02-5 | 02-6 | 02-7 | 02-8 | 02-9 | 02-10 | 02-11 | 02-12 | 03-1 | 03-2 | | (00-01) |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| Acta Materialia | 90 | 55 | 69 | 94 | 91 | 72 | 80 | 58 | 80 | 93 | 85 | 37 | 904 | 1,378 |
| Applied Catalysis A: General | 92 | 72 | 102 | 40 | 114 | 62 | 82 | 98 | 84 | 70 | 166 | 128 | 1,110 | 1,031 |
| Carbon | 200 | 128 | 231 | 188 | 203 | 113 | 83 | 135 | 117 | 126 | 140 | 101 | 1,765 | 1,173 |
| Catalysis Today | 56 | 63 | 58 | 49 | 100 | 45 | 36 | 36 | 79 | 47 | 113 | 120 | 802 | 894 |
| Electrochimica Acta | 106 | 95 | 62 | 61 | 107 | 163 | 104 | 116 | 107 | 157 | 174 | 151 | 1,403 | 1,495 |
| Journal of Alloys and Compounds | 70 | 54 | 60 | 55 | 67 | 53 | 42 | 35 | 68 | 82 | 84 | 37 | 707 | 650 |
| Journal of Crystal Growth | 49 | 121 | 59 | 86 | 92 | 76 | 69 | 92 | 125 | 98 | 203 | 98 | 1,168 | 1,631 |
| Journal of Magnetism and Magnetic Materials | 105 | 147 | 81 | 126 | 94 | 84 | 68 | 41 | 90 | 106 | 157 | 87 | 1,186 | 1,099 |
| Journal of Organometallic Chemistry | 145 | 54 | 88 | 76 | 127 | 62 | 83 | 42 | 111 | 115 | 157 | 77 | 1,137 | 456 |
| Journal of Power Sources | 212 | 267 | 221 | 247 | 338 | 468 | 224 | 232 | 266 | 347 | 386 | 362 | 3,570 | 3,375 |
| Journal of the European Ceramic Society | 118 | 116 | 146 | 126 | 172 | 114 | 124 | 59 | 160 | 90 | 160 | 104 | 1,489 | 998 |
| Polymer | 218 | 144 | 216 | 157 | 167 | 168 | 168 | 227 | 227 | 237 | 257 | 274 | 2,460 | 2,232 |
| Sensors and Actuators B: Chemical | 56 | 39 | 31 | 23 | 57 | 47 | 51 | 22 | 78 | 70 | 122 | 160 | 756 | 776 |
| Surface and Coatings Technology | 226 | 239 | 192 | 90 | 136 | 179 | 281 | 147 | 104 | 152 | 278 | 227 | 2,251 | 1,777 |
| Synthetic Metals | 149 | 78 | 46 | 82 | 75 | 41 | 45 | 65 | 127 | 103 | 131 | 159 | 1,101 | 1,797 |
| Tetrahedron | 279 | 177 | 140 | 185 | 193 | 201 | 222 | 175 | 210 | 177 | 311 | 205 | 2,475 | 10,336 |
| Thin Solid Films | 215 | 187 | 154 | 97 | 258 | 145 | 159 | 145 | 218 | 211 | 400 | 464 | 2,653 | 2,990 |
| Water Research | 262 | 125 | 103 | 88 | 115 | 133 | 115 | 151 | 179 | 176 | 114 | 129 | 1,690 | 1,916 |
| | 2,648 | 2,161 | 2,059 | 1,870 | 2,506 | 2,226 | 2,036 | 1,876 | 2,430 | 2,457 | 3,438 | 2,920 | 28,627 | 36,004 |

< 9> (fulltext) - (ACS) (:)

| | 02-7 | 02-8 | 02-9 | 02-10 | 02-11 | 02-12 | 03-1 | 03-2 | 03-3 | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Analytical Chemistry | 95 | 227 | 148 | 245 | 145 | 162 | 151 | 234 | 308 | 1,715 |
| Biochemistry | 141 | 177 | 91 | 167 | 135 | 138 | 162 | 135 | 209 | 1,355 |
| Environmental Science & Technology | 127 | 93 | 72 | 155 | 65 | 73 | 73 | 151 | 177 | 986 |
| Industrial & Engineering Chemistry Research | 185 | 286 | 175 | 196 | 188 | 127 | 149 | 146 | 178 | 1,630 |
| Inorganic Chemistry | 93 | 170 | 65 | 83 | 161 | 118 | 330 | 203 | 215 | 1,438 |
| Journal of Medicinal Chemistry | 283 | 461 | 383 | 270 | 214 | 191 | 247 | 260 | 178 | 2,487 |
| Journal of Organic Chemistry | 739 | 595 | 866 | 664 | 782 | 705 | 983 | 746 | 727 | 6,807 |
| Journal of Physical Chemistry A & B | 273 | 365 | 258 | 279 | 384 | 220 | 391 | 485 | 459 | 3,114 |
| Journal of the American Chemical Society | 941 | 1344 | 1500 | 1217 | 1372 | 1037 | 1478 | 1351 | 1533 | 11,773 |
| Langmuir | 318 | 284 | 635 | 465 | 403 | 427 | 427 | 520 | 553 | 4,032 |
| Macromolecules | 778 | 1050 | 1015 | 971 | 1002 | 867 | 973 | 652 | 1001 | 8,309 |
| Organometallic | 181 | 275 | 253 | 180 | 133 | 184 | 347 | 204 | 230 | 1,987 |
| | 4,154 | 5,327 | 5,461 | 4,892 | 4,984 | 4,249 | 5,711 | 5,087 | 5,768 | 45,638 |

),
 가 2002
 가 2003 가 . 1999
 가 , 3,200 2000
 가 1,600 , 2001 1,200 ,
 2002 1,100
 . 2000
 50%
 2003 1 4 가
 3 가 가
 2 . 가 , 1 가
 2 가
 . 4 (1999 ~

가



< 2> (1999 ~ 2002)

2002)

가 2000

가
(< 2>).

Elsevier

2003

70

3.3.3

1)

5,019 1,375 27%,
1,076 221 21%

가

2002

(Check-in),

3

1

2)

, URL

가

가

가

가

가

. KIST

100
가 85 2,030 , 2002 6
54 , 가 2.3 가 , ,
, 70 , 가 2.9
가 . .
, 가 .
(Backfiles)
가 463 , 19 , 가
가 22% . 가 “
가 가
(All or Nothing) ”
가 가
4 6 , 가
, 가
가 가
가 가
2000 100 가 (Pay per view)
2003 30 ~ 40 60% ,
25% 가
, , ,
, 가
4. (Technical Service)
가 .
가 .
가 가
, 가

- 24
- 가
- KIST
- Ashcroft, Linda and Colin Langdon. 1999. "Electronic Journals and University Library Collections". *Collection Building* 18(3) : 105-113.
- Boyce, Peter B. 1996. "Electronic Publishing of Scientific Journals". *Physics Today* 49(1) : 42-47.
- Frazier, Kenneth. 2001. "The Librarians' Dilemma". *D-Lib Magazine* [online], 7(3). [cited 2002. 12. 16] <<http://www.dlib.org/dlib/march01/frazier/03frazier.html>>.
- King, Donald W. and Carol Hansen Montgomery. 2002. "After Migration to an Electronic Journal Collection". *D-Lib Magazine* [online], 8(12) [cited 2003. 2. 19] <<http://www.dlib.org/dlib/december02/king/12king.html>>.
- Montgomery, Carol Hansen and Joanne L. Sparks. 2000. "The Transition to an Electronic Journal Collection : Managing the Organizational Changes". *Serials Review*, 26(3) : 4-18.
- Montgomery, Carol Hansen and King, Donald W. 2002. "Comparing Library and User Related Costs of Print and Electronic Journal Collection -A First Step Towards a Comprehensive Analysis". [cited 2003. 9. 15]. <<http://www.dlib.org/dlib/october02/montgomery/10montgomery.html>>.
- Odlyzko, Andrew M. 1995. "Tragic Loss or Good Riddance? The Impeding Demise of Traditional Scholarly Journals". *International Journal of Human Computer Studies*, 42(1) : 71-122.
- Rao, Mamidi Koteswara. 2001. "Scholarly Communication and Electronic Journals: Issues and Prospects for Academic and Research Libraries". *Library Review*, 50(4) : 169-175.
- Rupp-Serrano, Karen, Sarah Robbins and Danielle Cain. 2002. "Canceling Print Serials in Favor of Electronic : Criteria for Decision Making". *Library Collections, Acquisitions & Technical Services*, 26 : 369-378.
- Soete, Geoge. 1999. "Measuring Journal Cost-effectiveness Ten Years After barschall" [online]. [cited 2003. 5.

- 12]. <<http://www.library.wisc.edu/projects/glsdo/cost.html>>.
- Stratigos, Anthea. 2003. "Library of the Future" *Online* 27(1) : 74.
- White, Martin. 2001. "Electronic Access to Scientific Journals : Problems, Problems" *EContent* 24(10) : 66-67.