Study of Demand-Pull Factors Leading to Changing Trend of Select Social Science Online Information Service Providers (OISPS) during 2005

Supratim Chatterjee

PhD Scholar in IGNOU

Maidan Garhi, New Delhi-110068

supratim.chatterjee@gmail.com

Sanghamitra Jana Chatterjee

Asst. Librarian, and Library In-Charge,

VMML,Centre for Women's Development Studies,

25, Bhai Vir Singh Marg, New Delhi-110001

jsanghamitra@gmail.com; sanghamitra@cwds.ac.in

Uma Kanjilal

Professor of Library and Information Science and
Director, IUC; IGNOU

Maidan Garhi, New Delhi-110068

ukanjilal@ignou.ac.in

Abstract

The use of online information services has increased dramatically over the last decade, as consumers seek easier and more convenient access to information on the Internet. Historically, these Online Information Service Providers (OISPs) also known as access providers sold their services to individual users, and it was to their competitive advantage to get as many users as possible. The present paper is based on the objective to find out the change in the pattern of the products and services of the OISPs over a specific period of time and to trace statistically about the existing trend pointing towards future direction. Here in this present research paper the objective of study has been limited to five major OISPS namely Ebsco (Ebscohost & Ebsco Information Services), LexisNexis, ProQuest, Gale and JSTOR. The research is based on analytical study of primary level data collected in the form of stratified sample survey. Strata included different categories of clientele based on their usage of the online databases. Primarily various libraries in the Delhi region using the products and services of the OISPs have been chosen. The analysis here concluded that other than market price and procurement capability, "the subject coverage and number of journals covered" are two major factors that led to the choice of these OISPs.

Thus the product bundle offered by these OISPs have been evolving around these facts and the trend shows that they incorporated the user demands and there by customize their product bundle as per the end user need.

Keywords: Online Database, Ebsco, ProQuest, Gale, LexisNexis, JSTOR, Trend Analysis, Libraries

1. Introduction

There is a paradigm shift in the format of the libraries; from standalone libraries to library and information networks; from printed publications to digital documents; from ownership to access; from just-in case to just-in-time; from 9x5 to 24x7; from intermediation to disintermediation; and from library as a place to library as a concept. The prevailing of electronic resources makes the library collection possess more electronic materials than physical items.

Online databases and services from the OISPs, thus have become an integral part of the modern library resources. OISPs provide the services from remotely located databases through interactive communication with the help of Internet connectivity and compatible devices. These databases can be accessed directly or via a vendor (supplier of online services). Searching online databases has been available ever since the early 1970's. Early database providers such as BRS and DIALOG had rudimentary form of gateway in the mode of menus in which databases could be grouped and from which one or more could be selected for searching.The early 1980's Compuserve started utilizing a text-based interface. Other text based online services followed such as Delphi online service, and GEnie.

The use of online information services has increased dramatically over the last decade, as consumers seek easier and more convenient access to information on the Internet. According to an IntelliQuest survey, the online subscriber base worldwide in July 1997 was 51 million, as compared to 35 million reported in July 1996 (Picarelle 1997), and grew annually at the rate of 55 percent (Deck 1997). However, there has been little evidence of brand loyalty in this industry, with many subscribers switching to competitors' services or discontinuing their subscription altogether. An Inteco survey found that in August 1995, the total number of service cancellations among five leading online service firms was 9.4 million, compared to 8.1 million active users at that time (Carl 1995). These numbers have grown in all possible means and are many fold as of today showing a steady and stiff growth path.

Historically, access providers sold their services to individual users, and it was to their competitive advantage to get as many users as possible. This was particularly useful in selling companies on the notion of universal access, as it would expand their user base. But today providers find greater profit in selling to large organizations, such as corporations or universities. When these are the providers' clients, the needs of individual users become negligible. For example, some noteworthy small operators have circumvented big media to report on stories that

were otherwise going uncovered. But as the Internet becomes a more lucrative market, these small players are being swallowed up or drowned out by the large commercial interests. While some use technology to circumvent controls on information, the gatekeepers reinforce their ownership and control through the use of more manipulative technologies. Thus at the one hand market forces and consumer needs pushed these vendors to bring in various changes in their product and services; on the other hand the innovations and generation of economies of scale through radical changes in ICT tools and techniques pulled a lot of new category products and services. The present study aims to capture both the sides to obtain a complete trend pattern of the changes

2. Objective

The objective is to find out the change in the pattern of the products and services of the Online Information Service Providers (OISPs) over a specific period of time and to trace statistically about the existing trend pointing towards future direction. The bigger study would try to cover the factors and aspects of changes from suppliers side as well as from the need base, generated through the demands of the patrons. Here in this present research paper the objective of study has been limited to five major OISPS namely Ebsco (Ebscohost & Ebsco Information Services), LexisNexis, ProQuest, Gale and JSTOR. This study has tried to compare, analyse and rank the consumers' demand pull factors responsible for the changing trend reflected in the landing pages of their websites in that period of time. Here consumers are the respective subscribing libraries who have been using online databases since 2005. The study thus focuses the demand that were there in the period around 2005 to trace its impact over the period of time.

3. Methodology

The research is based on analytical study of primary level of data collected in the form of stratified sample survey method. Strata included different categories of clientele based on their usage of the online databases. Primarily various libraries in the Delhi region using the products and services of the OISPs have been chosen. The libraries have been considered in consultation with the OISPs expert team, whom they referred to as their bona fide clients for several years.   Since the OISPs decided are predominantly having databases on social science so institutions working on those areas are only selected. Special emphasis has been given to choose all major social science institutes under the special libraries category.

In the main research another set of primary data have been collected in the form of website logs capturing product evolution of the present set of select OISPs. Data collection has been done through historical analysis of their portals.

4. Literature Review

Online information services (OIS) involve the services from remotely located databases through interactive communication with the help of computers and communication channels. The users can access the databases directly or via a vendor (Supplier of online services). Generally, OISPs are available through networks. Searching online databases has been available ever since the early 1970's. As mentioned in Das and Jana (2006) about the genre of online services, they started becoming popular the early 1980's.It enabled libraries to start listing the electronic resources to which they subscribed or web pages, thus providing users with ready information. "As the web's popularity increased throughout the nineties, most of the vendors converted their user interfaces into web-based format and made online databases web accessible" (Das,2006). How deep the information is under the menu options has impact on information searching as well. Menu content organized in two levels of depths resulted in fewer searching problems than three levels regardless of breadth, and the layout as well as the labeling of the web content played a role (Larson & Czerwinski, 1998).

5. Research Analysis

Out of total respondent libraries 71% are under the category of special libraries. This is followed by 23% of Academic Libraries and 6% of Public Libraries. Out of these libraries 19 of the responded libraries have started using all or some of these OISPs' services in 2004. This is followed by 12 responded libraries who have started in 2002. Hence a significant number of respondent users had been using these OISPs well before the starting year of the context of present study.

5.1 What Factors Guided Subscribed Libraries during the Initial Time Around 2005–

Specific questions were asked to all the libraries to find out their ranked response on various factors which might have worked as guiding force for them to choose or change the services of any of these OISPs. To determine their psychological attribute or simply attitude, scales are being used. Likert type of scale is usually called Summated Rating Scale simply because the attitude score of an individual is obtained by adding the response scores on all the component items.

A summated scale, like a differential scale, consists of a series of items to which the subject is asked to react. The type of summated scale most frequently used in the study of social attitudes follows the pattern devised by Likert (1932) and is referred to as a Likert-type scale. In such a scale, the responded libraries have been asked to respond to each item in terms of several degrees of importance or unimportance; for example,

- Very Important (5);
- Important (4);

- Neutral (3);

- Not so Important (2);

- Unimportant (1)

The data derived using the Likert scale is given below

Options								
Table-1 Data on the selection factors primarily behind the choice of online database(s) during the initial time around 2005								
	Cost/ Price	Institutional budget	Content coverage in terms of subjects	Proportion of full text articles	Recency of the content	Geographical area covered	Number of journals covered	Number of international journals covered
	A	B	C	D	E	F	G	H
Very Important	170	220	175	35	55	45	50	60
Important	88	48	92	192	148	148	148	136
Neutral	12	15	9	18	30	42	36	39
Not so Important	4	2	2	2	2	4	4	4
Unimportant					3		1	1

In the given table the frequency of the scores against each option is given. The numbers given under the scale positions has not been given on the questionnaire given to the respondent libraries. They are shown here to indicate the scoring system.

The data in the table is represented graphically below with the help of area diagram.

Graph on the selection factors of online database in 2005

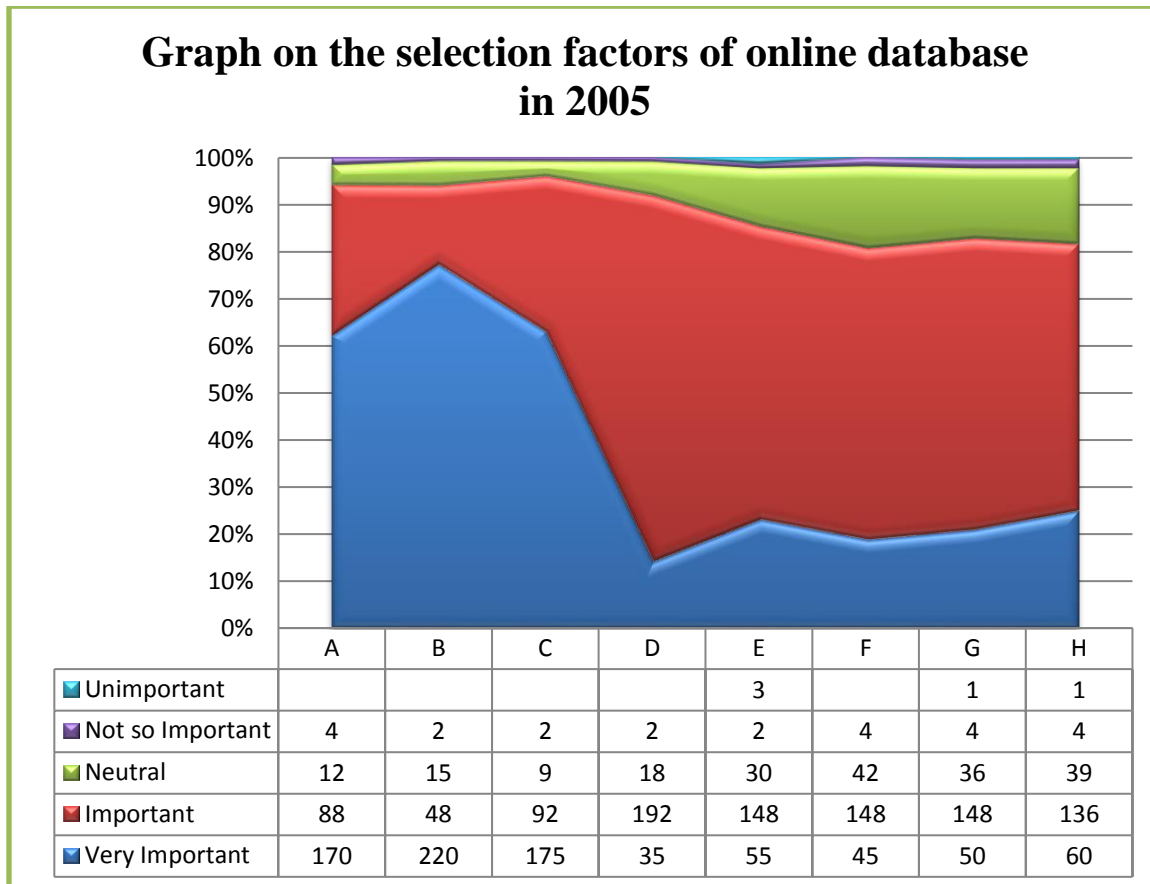|	A	B	C	D	E	F	G	H
Unimportant					3		1	1
Not so Important	4	2	2	2	2	4	4	4
Neutral	12	15	9	18	30	42	36	39
Important	88	48	92	192	148	148	148	136
Very Important	170	220	175	35	55	45	50	60

Figure-1 Selection factors by the libraries in 2005

In the given diagram the alphabets in the x-axis stands for different questions as posed in the questionnaire also given in the Table 1. The diagram denoted the areas covered by different options against respective questions. The majority strongly showed importance in the second question denoted B. Similarly respondent libraries has given importance to the fourth question number denoted by D. Very few respondent have shown strong disagreement in the any of the questions.

The procedure that is followed to construct a Likert-type scale is as follows:

❖ Firstly, assembled a large number of items considered relevant to the attitude being investigated and either clearly favorable or clearly unfavorable.

❖ Secondly these items are administered to a group of subject's representative of those with whom the questionnaire is to be used. The subjects indicate their response to each item by checking one of the categories of importance-unimportance.

❖ Thirdly the responses to the various items are scored in such a way that a response indicative of the most favorable attitude is given the highest score. It makes no difference whether 5 is high and 1 is low or vice-versa. The important thing is that the responses be scored consistently in terms of the attitudinal direction they indicate. Whether "approve" or "disapprove" is the favorable response to an item depends, of course, upon the content and wording of the item.

❖ Fourthly each individual's total score is computed by adding his item scores. Fifthly the responses are analyzed to determine which of the items discriminate most clearly between the high scorers and the low scorers on the total scale. Items that do not show a substantial correlation with the total score, or that do not elicit different responses from those who score high and those who score low on the total test, are eliminated to ensure that the questionnaire is "internally consistent"-that is, that every item is related to the same general attitude.

A series of Likert-type questions that when combined describe a personality trait or attitude - means and standard deviations are best used to describe the scale.

Table-2 — Data on the selection factors during the initial time around 2005 in Likert Scale for Respondents' Libraries.								
Questions -	A	B	C	D	E	F	G	H
Total Points Received	274	285	278	247	238	239	239	240
Total Points Possible	310	310	310	310	310	310	310	310
Mean	4.42	4.60	4.48	3.98	3.84	3.85	3.85	3.87

Standard Deviation	0.76	0.71	0.67	0.53	0.91	0.70	0.79	0.82
Correlation	0.92	0.92	0.88	0.80	0.52	0.91	0.93	0.93

Respondent Libraries as a whole supported the factors for the choice of the online database. Majority of the respondent libraries agree that institutional budget is important (Mean 4.60, Standard Deviation 0.71). Most respondent libraries also agree that content coverage is important (Mean 4.48, Standard Deviation 0.67) and special cost/ price are important (Mean 4.42, Standard Deviation 0.76).

Correlation Coefficient

The quantity r, called the linear correlation coefficient, measures the strength and the direction of a linear relationship between two variables.

The mathematical formula for computing r is:

$$r = \frac{n\sum xy - \left(\sum x\right)\left(\sum y\right)}{\sqrt{n\left(\sum x^2\right) - \left(\sum x\right)^2}\sqrt{n\left(\sum y^2\right) - \left(\sum y\right)^2}}$$

where n is the number of pairs of data.

Here in the given Table 1, the correlation coefficient for question nos. A, B, G and H are quite high and can be described as strong. That means the awareness of the respondent libraries regarding numbers of journals and international journals covered by the OISPs are very high. Similarly, they are also sensitiveness towards cost/ price of the database and institutional budget for the library are also very strong. Whereas for question number E the correlation is 0.52 that implies their attitude towards recency of the content was quite weak.

The users were enquired about which factors led to their choice of the subscribed OISPs and were given the following options: Cost/ Price, Institutional budget, Content coverage in terms of subjects, Proportion of full text articles, Recency of the content, Geographical area covered, Number of journals covered, Number of international journals covered. Majority of the respondent libraries agree that institutional budget is important (Mean 4.60, Standard Deviation 0.71). Most respondent libraries also agree that content coverage is also important (Mean 4.48, Standard Deviation 0.67) and special cost/ price are important (Mean 4.42, Standard Deviation 0.76). However, after figuring out the correlation coefficient and making the findings statistically significant it has been found that the awareness of the respondent libraries regarding numbers of journals and international journals covered by the OISPs are very high. Similarly, their sensitiveness towards cost/ price of the database and

institutional budget for the library are also very strong. Thus, it can be deduced that other than market price and procurement capability "the subject coverage and number of journals covered" are two major factors that led to the choice of these OISPs. Thus, the product bundle offered by these OISPs have been evolving around these facts and the trend shows that they incorporated the user demands and there by customize their product bundle as per the user demand.

6. Inferences and Conclusion

Just like a store changes its window display every month, these major OISPs frequently offer fresh content through their landing pages. Users don't want to see the same thing over and over. Driving customers to one's homepage are great, but directing them to landing pages that drill down deeper into the site is much more valuable. Thus most OISPs offer a variety of products and services and gradually separate landing pages for each category of products and services.

Finally to conclude we would use quotes of Tim Collins, Founder CEO of EBSCO Information Services from one of his interviews with Barbara Brynko, Editor-in-Chief of Information Today, on March 11, 2011; accessed from Ebsco Archive. He said, "I would say that our mission has broadened in recent years. We still have the mission of being an online research service serving institutions, but we've expanded it to encompass additional types and sources of content." Collins admitted that EBSCO was primarily a research service, but its offerings gradually included different types of content in areas where EBSCO had never searched before. And then, there were e-books. With the acquisition of Net Library in 2010, EBSCOhost added a full range of e-books and audio books to its offerings.

The view coincides conceptually with the present findings. The fact that subject coverage and source coverage are deterministic is actually reflected through their addition of new databases, e-books and audio books. So was the case with other OISPs namely Lexis Nexis, ProQuest, Gale, and JSTOR.Multiple elements shape the trends in OISP industry, including; evolving end-user expectations, vendor business models, "back-end" administrative workflows, and the players who make up the commercial marketplace. Each of these elements impacts different, yet interrelated areas; product development, product pricing, and – importantly – the ability of libraries to optimally serve their users. This paper tried to capture the library and user expectation factor and wanted to show how the users had expected the business to change from a consumer perspective.

References and Bibliography

Bhojaraju, G (2004). Intranets: a new dimension for library services. DESIDOC Bulletin of Information Technology, 24(1), 9-15.

Caswell, Jerry V. (2004). A conceptual framework for gateways. Information Technology and Libraries, 23(2), 73-80.

Chowdhury, G. G. & Chowdhury, Sudatta (2001). Information sources and searching on the World Wide Web. London: Library Association Publishing, 80-105.

Chowdhury, G. G. (2001). Introduction to modern information retrieval. London: Library Association Publishing, 235-249.

Das Subarna & Jana Shibsankar (2006). Changing role of online information services in the digital environment. In, 4th International Convention CALIBER-2006, Gulbarga, 2-4 February, 2006. Ahmadabad: INFLIBNET Centre, 128-141.

Encyclopaedia of library and information science. Ed by Allen Kent. Vol.32. New York: Marcel Dekker, 1981, 264.

Encyclopaedia of library and information science. Ed by Allen Kent. Vol.55. New York: Marcel Dekker, 1981, 255-257.

G. B. Rossman & B. L. Wilson (1994). Numbers and words revisited: Being "shamelessly methodologically eclectic." Quality and Quantity, 28, 315 -327.

J.C. Greene, V.J. Caracelli, & W.F. Graham, (1989). "Prevention effectiveness: A guide to decision designs." Educational evaluation and policy analysis, 11, 255-274

Sanghamitra Jana Chatterjee et.al (2017). "Study of different factors leading to the choice of Developers and Users to participate in major Open Source Library Software (OSLS) with special emphasis on gender differences". International Journal of Research in Library Science, 3(1), 150-161

Sanghamitra Jana Chatterjee et.al (2017). "Analyzing Different Motivational factors for Developers to participate in the Project Development Processes of Open Source Library Software (OSLS) with special emphasis to Gender Differences." IASLIC Bulletin, 62(2), 75-84

Supratim Chatterjee & Sanghamitra Jana Chatterjee (2004). "Quantifying web-site visits using web statistics". Online Information Review, 28(3), 191-199.

Jessica Santos, (2003). "Eservice quality: a model of virtual service quality dimensions", Managing Service Quality: An International Journal, Vol. 13 Issue: 3, pp.233-246

Khode, S. and Kumar, D. (2004). Free Information sources and services on Internet for libraries: a selective compilation. DESIDOC Bulletin of Information Technology, 24(4), 13-18.

Kumar, Vinod, Singh, Amar & Arya, Roop (2000). Online electronic sources of information on nonmetallic materials. In, Annual Seminar on Electronic Sources of Information. 1st-3rd March, 2000. Ed. by I. K. Ravichandra Rao. Bangalore: ISI, DRTC, 392-399.

Madalli, Devika P. (1998). Exploring bibliographic services on Internet. In Practical orientation to Internet, DRTC Workswhop-31, 28-30 Jan 1998. Ed. by D. P. Madalli. Bangalore: ISI, DRTC. Paper CE.

Madalli, Devika P. Internet- A general overview. In, Practical orientation to Internet, DRTC Workswhop-31, 28-30 Jan 1998. Ed. by D. P. Madalli. Bangalore: ISI, DRTC. Paper AA.

Madalli, Devika P. (1998). Internet resources for LIS professionals. In, Practical orientation to Internet, DRTC Workswhop-31, 28-30 Jan 1998. Ed. by D. P. Madalli. Bangalore: ISI, DRTC. Paper CC.

Matthew B. Miles & A. Michael Huberman (1994). Qualitative data analysis: An expanded sourcebook, 2nd Edition (M.B. Miles and A.M. Huberman, editors) Thousand Oaks, CA: Sage Publications, 40-43.

Neelameghan, A. (2004). Access to online databases. In, Information technology application in libraries: a text for beginners Ed. by M. Mahapatra and D. B. Ramesh. 312-319.

Rowley, J. (1998). The electronic library. 4th ed. London: Library Association Publishing, 201-233.

S. D. Sieber (1973). The integration of fieldwork and survey methods. American Journal of Sociology, 78(6), 1335-1359.

Sharma, S; Kumar, A & Singh, M (2004). Digital reference service. DESIDOC Bulletin of Information Technology, 24 (6), 11-18.

Srivastava, R. (2004). Managing IPR in digital environment through Digital Object Identifier (DOI). DESIDOC Bulletin of Information Technology, 24(2), 17-21.

Totterdell, Anne (2001). The library and information work primer. 2nd ed. London: Library Association Publishing, 144-147.

Utpal M. Dholakia & Lopo L. Rego (1998). "What makes commercial Web pages popular?: An empirical investigation of Web page effectiveness", European Journal of Marketing, 32(7/8), 724-736

W. Firestone (1987). Meaning in method. The rhetoric of quantitative and qualitative research. Educational Researcher, 16, 16-21