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INDEST-AICTE Consortium: Present Services and Future Endeavours

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ABSTRACT

The INDEST-AICTE Consortium, launched in 2003, provides differential access to 12,000 electronic journals and six bibliographic databases from a number of publishers and aggregators to 48 centrally-funded technical institutions, 60 government and government-aided engineering colleges and 820 private engineering colleges, and other organisations. The article describes major functions, activities and services of the INDEST-AICTE Consortium. It briefly touches upon resources subscribed, terms of licenses, policies and practices for archival back-ups, membership programmes including core members, AICTE-supported institutions, and self-supported category of membership. The article outlines governing structures of the Consortium and their roles. It elaborates on strategies used for effective implementation of Consortia amongst member institutions. It briefly touches upon the economics of the Consortium and spells out it future endeavours.

Keywords: INDEST-AICTE consortium, usage statistics, library consortium, cost avoidence, e-resources

1. INTRODUCTION

The scholarly journals have suffered very high inflation in cost for the past several decades. The situation in India is compounded with continuous decline in the value of Rupee against major foreign currencies that resulted in steep decline in procurement of scientific journals by Indian libraries causing a very wide gap in journals that are required and those that are actually available in the libraries. All educational institutions in India, especially the universities, face acute shortage of funds to subscribe to international scholarly journals.

It is estimated that a typical university in India subscribes to less than two hundred international journals. Moreover, some of the Indian universities do not subscribe to any international journals at all. While there are around 50,000 scholarly journals, all research institutions and universities in India put together had combined subscriptions to only around 1,500 journals in print till recently. Many smaller colleges and institutions subscribe to fewer than hundred journals. Most colleges, including those imparting postgraduate and doctoral programmes, do not have financial resources to subscribe to any international journals; their subscription list includes few Indian journals and a few popular magazines.

However, the accessibility to international journals in Indian universities and technical institutions has improved many-fold with setting up of a few government-funded library consortia. Prior to setting up of these consortia, the access to e-journals was restricted to premier institutions like IISc, IITs, IIMs and a few central universities who were subscribing to a few e-resources including bibliographic databases on CD-ROM, a few e-journals accessible free with subscription to their print versions, and a negligible fraction of e-journals on subscription.

After launch of the Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium in 2003 and UGC-INFONET Digital Library Consortium in 2004, availability and accessibility of e-resources increased phenomenally in centrally-funded technical institutions (IITs, IISc, IIMs, IIITs, etc.) and universities, setting in a new culture of electronic access and browsing in academic institutions. Besides, INDEST-AICTE Consortium and UGC-INFONET Digital Library Consortium, a number of other library consortia have emerged in India in the past five to six years. These include Council of Scientific and Industrial Research (CSIR) E-journals Consortium, Department of Atomic Energy (DAE) Consortium, FORSA Consortium, Indian

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Institute of Management (IIM) Consortium, CeRA (Consortium of e-Resources in Agriculture), Health Science Library and Information Network (HELINET) Consortium, Defence Research and Development (DRDO) e-Consortia, Department of Biotechnology's DeLCON, and Electronic Resources in Medicine (ERMED) Consortium.

This article describes major functions, activities and services of the INDEST-AICTE Consortium. It briefly touches upon resources subscribed, terms of licenses, policies and practices for archival backups, membership programmes including core members, AICTE-supported institutions and self-supported category of membership, etc. The article outlines governing structure of consortium and their roles. It elaborates on strategies used for effective implementation of consortia amongst member institutions. The article briefly touches upon the economics of the INDEST-AICTE Consortium. Lastly, article elaborates on future endeavours of the INDEST-AICTE Consortium.

2. INDEST-AICTE CONSORTIUM: GENESIS AND PRESENT STATUS

2.1 The Genesis

The proposal for consortia-based subscription to electronic resources was first discussed at length at the National Seminar on Knowledge Networking in Engineering and Technology Education and Research held at IIT Delhi during 1-2 December 2000. On the recommendations of one of the work groups of this Seminar, a preliminary proposal on consortia-based subscription to electronic resources was prepared and circulated to all IITs, IISc, and RECs (now NITs). On the basis of feedback obtained from these institutions, a revised draft proposal was prepared which encompassed other engineering colleges and institutions also as beneficiary of this initiative. The Ministry of Human Resource Development (MHRD), based on the last draft proposal, appointed an expert group in April 2002 for Consortia-based Subscription to Electronic Resources for Technical Education System in India under the chairmanship of Prof. N. Balakrishnan from IISc, to discuss elaborately on the e-resources with the publishers and aggregators and evolve a working model for execution of the Consortium.

The expert group submitted its report in September 2002[1], and consequently INDEST Consortium was set-up in 2003 by the MHRD. Thirty-eight centrally-funded government institutions including IITs, IISc, NITs, IIMs, IIITs, and few other institutions are core members of the Consortium. The Ministry provides funds required for accessing e-resources to the core members through the Consortium Headquarters (HQ) situated at IIT Delhi. All new IITs, IISERs, IIMs, and IIITs (centrally-funded) qualify for inclusion as core members of the Consortium.

The INDEST Consortium was re-named as INDEST-AICTE Consortium in December 2005 as AICTE took the lead to spread the access to e-resources to all its affiliated institutions.

2.2 Present Status

The INDEST-AICTE Consortium is the most ambitious initiative taken so far in the country. The benefits of consortia-based subscription to electronic resources are not confined to centrally-funded technological institutions in the country only but are also extended to all educational institutions under its open-ended proposition. Sixty government/government-aided engineering colleges are being provided access to selected electronic resources with financial support from the AICTE. More than 820 engineering colleges and institutions have already joined the Consortium under its Self-Supported category. The Consortium is also a member of International Coalition of Library Consortia (ICOLC).

The total number of members in the Consortium has grown to 928. The Consortium, on the basis of sheer strength of number of institutions, has attracted the best possible prices and terms of agreement from the publishers, and currently facilitates access to e-resources to more than a million students. It subscribes to over 12,000 e-journals and six bibliographic databases from a number of publishers and aggregators. The INDEST website hosts a search and browse interface to locate these journals and their URLs.

3. GOVERNANCE

The Consortium operates through its HQ under the National Steering Committee consisting of Director, IIT Delhi as its ex-officio Chairman and Chairman, AICTE as its Co-chairman. Members from amongst the beneficiary institutions include two representatives each from IITs and NITs; one representative each from IISc, IIITs and IIM; representatives from self-supported institutions; Director (Technical Education), MHRD; and Adviser (PC), AICTE. The Committee is responsible for taking major policy decisions as well as their execution. In addition, a National Review Committee, under the Chairmanship of Joint/Additional Secretary (Technical Education), meets annually with an overall responsibility for making policies, monitoring the progress, and coordinating with UGC and AICTE for promoting the activities of the Consortium. Further, a National Advisory Committee, constituted by the Joint Secretary (Technical Education), comprises representatives from amongst member institutions; Financial Adviser, MHRD; National Coordinator, INDEST-AICTE Consortium; and representatives from the AICTE and UGC. The National Coordinator for the Consortium is

appointed by the Technical Bureau of MHRD and is responsible for all the operations of the Consortium. The National Coordinator is also the Member Secretary of the National Steering Committee.

4. MEMBERSHIP

The INDEST-AICTE Consortium has three categories of members, namely, core members, AICTE-supported institutions, and self-supported institutions. Number of members in the Consortium has increased from 115 in 2003 to 928 in 2009.

4.1 Core Members

All centrally-funded government technical institutions including IITs, IISc, NITs, IIITs, IIMs and few other institutions are core members of the Consortium since its inception. The MHRD provides funds required for differential access to electronic resources for its core members through the Consortium HQ. Seven new/ additional centrally-funded technical institutions, namely, NIFFT Ranchi; NIT Patna; IIIT Jabalpur; and three National Institutes of Technical Teachers' Training and Research (NITTTR) in Chandigarh, Bhopal, and Kolkata were also included as core members in 2008. The Consortium is in the process of inducting additional centrally-funded technical institutions including five Indian Institutes of Science Education and Research (IISER) and six new IITs as its core members. Core members of the Consortium have grown from 37 in 2003 to 48 in 2009.

Core members are grouped in four groups to extend differential access to e-resources to them, based on their resource requirements and specialisations. Group I comprises eight institutions including IITs and IISc; Group II comprises 21 institutions including NITs, Indian School of Mines (ISM), Sant Longowal Institute of Engineering and Technology (SLIET), and North East Regional Institute of Science and Technology (NERIST); Group III comprises 14 institutions including IIMs, IIITs, NITTTRs, National Institute of Industrial Engineering (NITIE); and Group IV comprises five Indian Institutes of Science Education and Research (IISER).

4.2 AICTE-Supported Government/ Government-aided Colleges

All India Council for Technical Education provides financial assistance to the INDEST-AICT Consortium for subscription to e-resources to 60 government/ government-aided engineering colleges. These include 37 engineering and technology colleges and 23 universities having engineering departments/faculty. All 60 institutions offer postgraduate courses in engineering and technology, etc. Institutions supported by the AICTE are given differential access to only one to four e-resources, i.e., IEL Online, ASME Online Journals, ASCE Online Journals, and ProQuest Science depending on courses offered by these at postgraduate level.

4.3 Self-supported Engineering Colleges and Institutions

The Consortium, being an open-ended proposition, also invited UGC-affiliated institutions to join hands and share the benefits it offers in terms of lower subscription rates and better terms of agreement with the publishers. Eight hundred and twenty institutions including engineering and technological colleges, management colleges, pharmacy colleges, and government autonomous institutions have joined the Consortium under its self-supported category. The number of institutions under self-supported category has increased from 17 in 2003 to 820 in 2009. Growth in number of members in different categories of Consortium from 2003 to 2009 is given in Table 1. The INDEST website maintains a searchable database of its members and resources accessible to them with a browse interface to facilitate browsing of institutions by categories of members and state-wise list of institutions.

5. RESOURCE SHARING

The Consortium subscribes to 14 full-text e-resources, five factual/statistical databases, and 6 bibliographic databases from 24 publishers including scholarly societies, commercial publishers, and aggregators. While full-text resources subscribed by the Consortium contain full-text of electronic journals, conference proceedings, standards and protocols, chapters of books, etc., the bibliographic databases contain abstract of articles published in journals, conference proceedings or chapters in books along with links to the full-text e-resources. The few factual/ statistical databases, subscribed for business and management schools, contain factual/statistical data including analytical and financial reports on industries and companies. Details of resources subscribed and

Table 1. Growth in number of membership in different categories

Category of Members	2003	2004	2005	2006	2007	2008	2009
Core members	38	38	38	38	38	42	48
AICTE-supported members	60	64	63	60	60	60	60
Self-supported members	17	50	75	492	530	690	820
Total	115	152	176	590	628	792	928

Table 2. Electronic resources subscribed and accessible to the core members

S. No	Electronic resources	URL	No. of Jls.	Core members	
				Categories	No.
		Full-text Resources			
1.	ABI /INFORM Complete	http://www.il.ProQuest.com	4,374	I & IVA	15
2.	ACM Digital Library	http://portal.acm.org/portal.cfm	44	I-IV	38
3.	ASCE Journals	http:// www.scitation.org/	30	I & III	28
4.	ASME Journals	http:// www.scitation.org/	22	I, II & V	28
5.	ASTM Digital Library	http://enterprise.astm.org	5	I, II & V	28
6.	EBSCO's Business Source Premier	http://search.epnet.com/	10,532	I & IVA	13
7.	Emerald Management Extra	http://iris.emeraldinsight.com/	125	I & IVA	13
8.	IEL Online	http://ieeexplore.ieee.org/	241	All*	38
9.	Indian Standards		217	I & II	28
10.	Nature	http://www.nature.com/	1	I, II & III	28
11.	ProQuest Science	http://www.il.ProQuest.com/	622	II & IVB	22
12.	ScienceDirect	http://www.sciencedirect.com/	2,149	I, II & IVA	34
13.	Springer	http://www.springerlink.com/	1,059	I, II, IVB & V	30
		Factual/Statistical Databases			
14.	Capitaline	http://www.capitaline.com/		I & IVA	13
15.	CRIS INFAC Ind. Info.	http://www.crisil.com/		IVA	6
16.	Euromonitor (GMID)	http://www.portal.euromonitor.com	29	I & IVA	13
17.	INSIGHT	http://www.insight.asiancerc.com/		IVA	6
		Bibliographic Databases			
18.	Compendex Plus	http://www.engineeringvillage2.org		I	8
19.	INSPEC	http://www.engineeringvillage2.org		I	8
20.	JCCC	http://jccc-indest.informindia.co.in/		All	38
21.	MathSciNet	http://www.ams.org/mathscinet		I & III	8
22.	SciFinder Scholar	http://www.cas.org/SCIFINDER/SCHOLAR		I	8
23.	Web of Science	http://isiknowledge.com		I	8

**Except G-III; Categories: I: IITs and IISc; II: NITs, SLIET, ISM and NERIST; III: IISER; IV: IIMs, IIITMs & NITIE; IVA: IIMs; IVB: IIITMs & NITIE and V: NIFFT and NITTTRs*

accessible to the core members of the Consortium are given in Table 2.

Access to electronic resources is IP-enabled for all the members except for institutions that do not have static IP addresses.

6. LICENSE AGREEMENT AND FAIR USE

Copyright is manifested in terms of licenses in digital environment. The Consortium is required to sign license agreement with the publisher on behalf of its member institutions. The terms of licenses for digital collection vary in terms of conditions, variety of pricing models and access limitations. While the Consortium signs the license agreement prepared by the publisher, care is taken to incorporate terms and conditions mentioned below for as many publishers as possible[2].

- **Simultaneous Users**: There is no limit on number of simultaneous users for most of the resources subscribed by the Consortium, except for IEL Online, Web of Science, and SciFinder Scholar. Any number of users can access e-resources including e-journals and bibliographic databases at any given time except for the three resources mentioned above.
- **Walk-in Users**: Walk-in users who are physically present at the subscribing institutions are allowed to use the resources.
- **Print-independent Subscription**: Subscription to e-resources is print-independent in most of the cases except Elsevier's ScienceDirect, Springer and Emerald Xtra. As such, beneficiary universities are free to drop subscription to print copy of journals accessible to them through the Consortium.
- **Inter-library Loan (ILL)**: Licensee is allowed to fulfill ILL requests from non-authorised users using printed copy of article downloaded from the licensor's website.
- **Usage Statistics**: Publisher is required to submit COUNTER compliant usage/statistics on number of downloads (both full text and abstracts) in a given month, previous month, and cumulative for one year.
- **Inclusion of additional Titles**: The publisher is required to provide access to new journal titles that are added during the contract period at no additional cost.
- **Electronic Link**: The licensee may provide electronic links to the licensed materials from licensee's web page, either at journal-level or at article-level and publisher would provide help in doing so.
- **Protection on Increase of Price**: Publisher would provide protection on increase in price of subscribed resources. The increase should not be more than 5 per cent.

- **Perpetual Access and Archival Rights**: In case of termination of the agreement or on the expiry of the agreement, publisher would extend perpetual access to e-resources for the paid period of subscription along with their back files offered during the subscription period. Alternatively, the publisher would provide full text of e-resources with back volumes (e-journals/e-databases) for each year on prevalent formats, i.e. CD-ROM/DVD-ROM with the retrieval software for access on the network. In case of change in archival technology, the state-of-art archival technology shall be made available by the licensor to subscribers at no extra cost for archival of full-text data of e-journals to higher version of technology.
- **Awareness and Training**: The publisher or its representative would conduct Users Awareness Programme on campuses of member universities at no charge to the universities. The publisher would provide publicity material, brochures, posters and user-support material in both prints as well as on CD form.
- **E-print Archive**: Member universities would be allowed to download bibliographic records, abstracts and full-text articles published by their faculty, researchers, students, and staff from publisher's site and import them in their local database and Institution Repositories.
- **Arbitration**: All disputes arising under the agreement shall be settled under the rules of the international arbitration court by one or more arbitrators in accordance with the said rules. The place of the arbitration shall be in India and carried out in the English language.

7. USAGE ANALYSIS

Most publishers maintain detailed usage statistics compliant to an international standard called COUNTER for resources offered by them to the Consortium. Comparative usage statistics for member institutions is obtained from the publishers and is made accessible to the member institutions through the INDEST website. Institutions with low usage are requested to optimise their usage. A custom-made web interface called e-RAMS (Electronic Resource Access Management System) has especially been designed to provide and deliver statistics of usage to member institutions. Besides, publishers also provide User ID and Password to the member institutions for accessing usage statistics of their resources directly from publisher's website[3]. The analysis of usage statistics of e-resources by member institutions reveals consistent increase in usage for all e-resources from 2003 to 2008 as elaborated below.

7.1 Increase in Usage of e-Resources by different Categories of Core Members

Table 3 depicts increase in usage of various resources by different categories of core institutions from 2003 to 2008. The data reflects consistent increase in usage from 2003 to 2008 for all resources by all categories of institutions amongst the core members. The increase in usage for IIMs was calculated from 2004 to 2008 since most of the management resources were added in 2004.

Tables 4-7 depict that while there is an appreciable increase in usage of all full-text e-resources, the usage of bibliographic databases have decreased substantially

Table 3. Increase in number of downloads from 2003 to 2008 (for all core members and all e-resources)

	2003	2004	2005	2006	2007	2008
Group I (IITs/IISc)	43,55,795	89,68,111	1,90,51,318	2,61,44,693	2,42,76,721	2,57,20,819
Group II (NITs)	3,74,288	7,39,157	9,18,399	10,19,887	15,72,582	17,82,431
Group III (IIITs)	12,965	12,765	24,669	29,109	89,405	59,355
Group IV (IIMs)	36,453	49,16,087	2,00,91,489	3,19,25,216	28,57,78,500	2,95,69,533
JCCC	37,930	40,637	55,020	68,928	83,694	60,759
Grand Total	48,17,431	1,46,76,757	4,01,40,895	5,91,87,833	31,18,00,902	5,71,92,897

Table 4. Increase in usage of ASCE, ASME and IEL Online from 2003 to 2008 by core members

E-resources	2003	2004	2005	2006	2007	2008
ASCE	25,860	1,90,912	2,19,988	83,707	92,057	2,64,581
ASME*	0	69,236	86,826	1,57,483	2,08,231	1,18,567
IEL Online	11,92,963	11,90,227	14,06,471	15,81,797	17,31,474	18,35,970

** Usage statistics for ASME for the year 2003 is not available.*

Table 5. Increase in usage of ScienceDirect, ProQuest and Springer from 2003 to 2008 by core members

e-resources	2003	2004	2005	2006	2007	2008
ScienceDirect	13,51,471	24,19,210	28,30,345	38,37,519	41,61,187	51,12,723
ProQuest	13,349	21,208	17,627	16,402	18,343	16,486
Springer	38,363	45,411	42,151	86,763	4,09,920	5,17,648

Table 6. Increase in usage of ABI Inform Complete, Capitaline, EBSCO's BSP and Emerald from 2004 to 2008 by core members

e-Resources	2004	2005	2006	2007	2008
ABI Inform Complete	1,07,655	1,35,229	1,23,883	1,27,644	1,09,838
Capitaline	65,50,307	2,89,76,243	4,96,68,725	4,45,29,394	4,57,91,169
EBSCO's BSP	2,15,979	2,08,160	2,14,191	2,36,177	2,36,413
Emerald Insight	33,997	53,566	1,06,409	1,33,723	1,42,018

Table 7. Increase in usage of bibliographic databases by core members from 2003 to 2008

e-Resources	2003	2004	2005	2006	2007	2008
Compendex and INSPEC	17,42,141	27,59,606	38,09,090	10,70,697	4,67,324	2,31,158
MathSciNet	1,09,296	1,65,922	1,88,342	2,34,189	4,69,268	2,37,412
SciFinder Scholar	2,36,338	3,74,049	4,82,398	5,23,550	5,54,231	10,38,488
Web of Science	24,314	40,187	5,52,347	6,42,985	4,07,325	11,97,282

with exception to SciFinder Scholar. The decrease in usage of bibliographic databases is global phenomenon. Most of the management resources have registered appreciable increase in usage except in case of ABI Inform where there is a slight decrease in usage for 2008.

As mentioned before, most bibliographic databases have registered appreciable increase in usage from 2003 to 2005. After 2006, the usage of bibliographic databases has come down significantly except in case of SciFinder Scholar that has registered significant increase in all the years.

7.2. Increase in Usage of e-Resources by AICTE-supported Institutions

The AICTE institutions have also registered a significant increase in usage of e-resources subscribed for them in terms of number of research articles downloaded from 2003 to 2008. The comparative decrease in usage of ASCE and ASME is attributed to the failure of scitation platform, which resulted in missing usage statistics for a number of institutions for certain duration. Table 8 depicts increase in usage of e-resources by AICTE-supported institutions.

7.3. Increase in Usage of e-Resources Subscribed by the Self-supported Institutions

Increase in number of downloads in case of self-supported institutions has not been analysed because self-supported members had joined the Consortium over the years. However, Table 9 provides number of subscribers for each e-resource. It may be noted that IEL Online is the most favourite resource amongst self-supported category of institutions with 428 subscribers followed by ASME Journals with 174, ScienceDirect with 136, and Springer with 97 subscribers in 2009.

8. ECONOMICS OF INDEST-AICTE CONSORTIUM

The factors that determine economic viability and cost-effectiveness of consortia-based subscription are: its membership, intensity of usage, successful migration from print to electronic version (with discontinuation of print) and cost avoidance. These factors are discussed below in detail[4].

8.1 Number of Members

A consortium is more meaningful and effective if it has larger number of members. The collective strength of members of the consortium provides it the power to bargain with the publishers for better rates of subscription and terms of licenses. The cost of subscription to e-resources comes down as more and more institutions join the consortium. The INDEST-AICTE Consortium took the benefit of large number of subscribers for IEL Online, ASCE and ACM Digital Library as mentioned below:

- **IEL Online (Single User)**: The cost of subscription decreased by 12.50 per cent in the year 2003, i.e. from US $ 8100 to US $ 7350 when the subscribers to

Table 8. Increase in usage of e-resources for AICTE-supported institutions

e-Resources	2003	2004	2005	2006	2007	2008
ASCE	4,031	23,924	38,946	22,188	74,140	20,816
ASME	2,225	16,230	27,212	22,053	72,154	32,432
IEL Online	1,69,722	3,52,861	5,49,306	8,84,993	8,89,646	7,89,757
ProQuest*	415	915	1,568	1,371	1,652	1,679

Table 9. Number of subscribing self-supported institutions for each e-resource

e-Resources	2006	2007	2008	2009
ABI Inform Complete	4	9	9	5
ACM Digital Library	23	33	40	50
ASCE Journals	21	89	87	83
ASME Journals	30	196	195	174
ASTM Digital Library	-	11	3	4
Compendex Plus	3	3	1	2
DEL	-	121	78	53
Emerald Xtra	-	1	15	15
IEL Online (1 User)	86	405	424	428
IEL Online (15 User)	-	-	1	1
IEL Online (5 User)	-	28	23	21
IET Digital Library	-	-	-	6
Indian Standards	3	7	7	9
MathSciNet	6	5	11	13
ProQuest Science	7	9	5	5
ScienceDirect	6	12	99	136
Springer Link	6	105	86	97
	195	**1034**	**1084**	**1061**

IEL Online (single user) increased from 10 to more than 75.

- **ASCE Online**: The cost of subscription decreased by 8.33 per cent in the year 2003, i.e. from US $ 3600 to US $ 3300 when its subscriber base increased from 28 to more than 36.

Subscription cost for both the above mentioned resources came down drastically in the same year as more number of members joined the Consortium.

- **ACM Digital Library**: The cost of subscription decreased by 3.51 per cent in 2003-2004, i.e. from US $ 4560.25 in 2003 to US $ 4400 in 2004 when its subscriber base increased from 28 to more than 40.
- Considering the increase in number of subscribers, several publishers agreed to peg their 2004 subscription rates at 2003 level without annual increase in rates.

8.2 Cost Avoidance

The Consortium, with its collective strength of participating institutions, has attracted highly discounted rates of subscription coupled with most favourable terms of agreement. In effect, the members of the Consortium avoid the cost commitments on the following:

8.2.1 Lower Rates of Subscription

The rates offered to the Consortium are lower by 50 per cent to 98 per cent depending upon the category of institution. The Consortium was offered lower rates of subscription from the vendors not only because of combined strength of its members but also due to the eagerness of publishers to enter the Indian market. Cost avoidance on account of lower rates of subscription for the members of the Consortium is calculated in terms of difference between cost paid by the Consortium for member institutions for e-resources and cost payable by individual institutions in case the resources were subscribed by them on their own.

Figure 1 depicts that there is a notional saving of Rs 643 crore considering the fact that the same resources on list price would have cost Rs 692 crore as against Rs 24.42 crore paid by the INDEST-AICTE Consortium for 2009 for its core members.

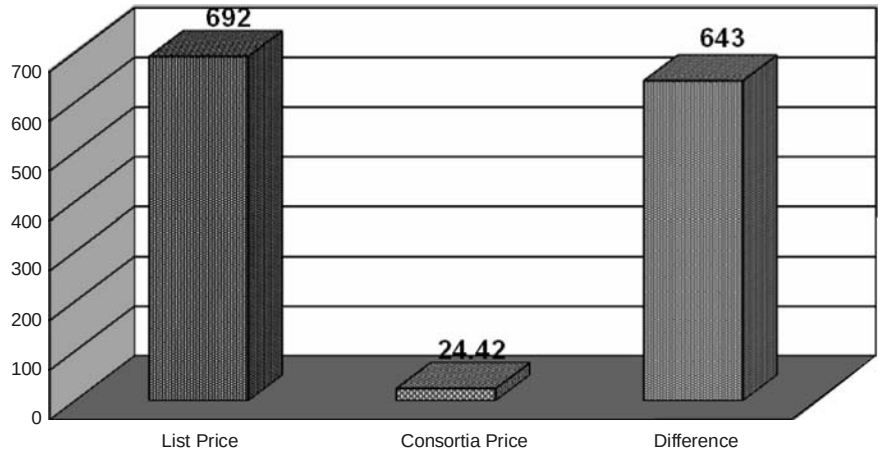

Figure 1. Cost avoidance—List price vs consortium price.

8.2.2 Annual Increase in Rates of Subscription

Members of the Consortium have the benefit of cap on the annual increase in the rates of subscription. While the usual increase in price of e-resources vary from 10 per cent to 15 per cent, members of the Consortium enjoy the cap on increase in price ranging from 4.5 per cent to 8 per cent.

8.2.3 Cap on Annual Increase on Print Subscription

Several publishers also extend the benefit of cap on the annual increase in the rates of subscription of e-resources on print resources. While the usual increase in price of e-resources vary from 10 per cent to 15 per cent, members of the Consortium enjoy the cap on increase in price ranging from 5 per cent to 6 per cent.

8.2.4 Lower Rates for Print Subscription

The publishers of e-resources offer lower rates of subscription for print publications to the member of the Consortium in lieu of their subscription to the electronic version. For example, subscriber to IEL Online (5 and 15 simultaneous users), ASCE, and ASME Journals Online, can avail subscription rates for the print version of these resources. The discounted print subscription rates for these resources are given in Table 10.

8.3 Intensity of Usage: Cost Recovery

The recovery of cost incurred on e-resources subscribed through the Consortium can be judged in terms of intensity of usage of resources. Most publishers maintain detailed usage statistics for resources offered by them to the consortium. The INDEST-AICTE Consortium obtains comparative usage statistics for member institutions from the publishers and sent to the member institutions regularly with a request to optimise the usage and check misuse, if any.

The cost recovery is calculated on the presumption that if the e-resources were not available through the Consortium, articles downloaded from these resources by the member institutions would have been sourced on ILL/ document delivery at a cost of US $ 15 per article (average cost of article taken from a study conducted by the American Research Libraries. The cost recovery table is led by Group I institutions (IITs and IISc) with Rs 1697.57 crores as cost of articles downloaded by them as against Rs 27.87 crores spent on subscription to e-resources recording a gain of Rs 1685.85 crores in terms of cost of research articles downloaded in excess. Group II institutions (NITs, SLIET, ISM and NERIST) were second on the cost recovery table with Rs 117.64 crores and Rs 7.83 crores as the cost of articles downloaded and cost of subscription to e-resources, respectively with Rs 109.80

Table 10. Discounted print subscription rates for resources subscribed by the consortium

Item	No. of Jls	Regular subscription rate	Consortium subscription rate	Discount %
		In Rupees		
IEL-ASPP Package	140	2431880	1185280	51.26
ASCE Journals	31	594790	172800	70.94
ASME Journals	24	435200	174080	60.00

crores for cost of articles downloaded in excess. All categories of institutions recovered the cost incurred for e-resources subscribed for them although the extent of usage varies from one category to another. The cost recovered in case of AICTE supported institutions is Rs 55.74 crore comparing to Rs 2.67 crore spent by the Consortium, i.e. articles worth Rs 53.06 crore were downloaded in excess.

Figure 2 depicts the graphical representation of the cost incurred vs cost recovered.

8.3.1 Average Cost of an Article/Record

The average cost of a full-text article or a bibliographic record varies from Rs 0.46 in case of IIMs to Rs 43.94 in case of NITs as depicted in Table 11. In case of IITs/IISc, average cost of article is as low as Rs 10.84. The trend clearly shows that bibliographic databases are less cost-effective since full-text databases are preferred over bibliographic databases and are used more extensively in comparison to bibliographic databases.

8.4 Migration from Print to Electronics: Cost Savings on Account of Drop in Print Subscriptions

The INDEST-AICTE Consortium, as a policy, has asked their core member institutions to decrease their print resources gradually. It was, however, observed that several e-resources are linked to their print subscriptions and the core member institutions are not at a liberty to delete their print subscriptions that are linked to electronic access. The member institutions were, however, suggested to cancel their print subscription in preference to electronic accesses, wherever possible. The member institutions of the Consortium have recorded a saving of Rs 16.39 crores on account of deletion of print subscription to resources being subscribed by the Consortium. This savings assume special significance considering the following facts:

Table 11. Average cost of articles for different categories of core members

Average cost of articles	
Category of institutions	**Cost (Rs)**
IITs/IISc	10.84
NITs	43.94
IIITs	36.71
IIMs	0.46
AICTE-supported members	31.75
Consortium average	24.74

(i) Total amount spent on subscription to e-resources for these 48 institutions was Rs 31.39 crores during 2008–2009;

(ii) The Consortium subscribes to more than 12,000 e-journals and six bibliographic databases. As such the access to e-resources to all 48 institutions has increased significantly from almost negligible; and

(iii) All the institutions do not get access to all the resources subscribed by the Consortium, however,

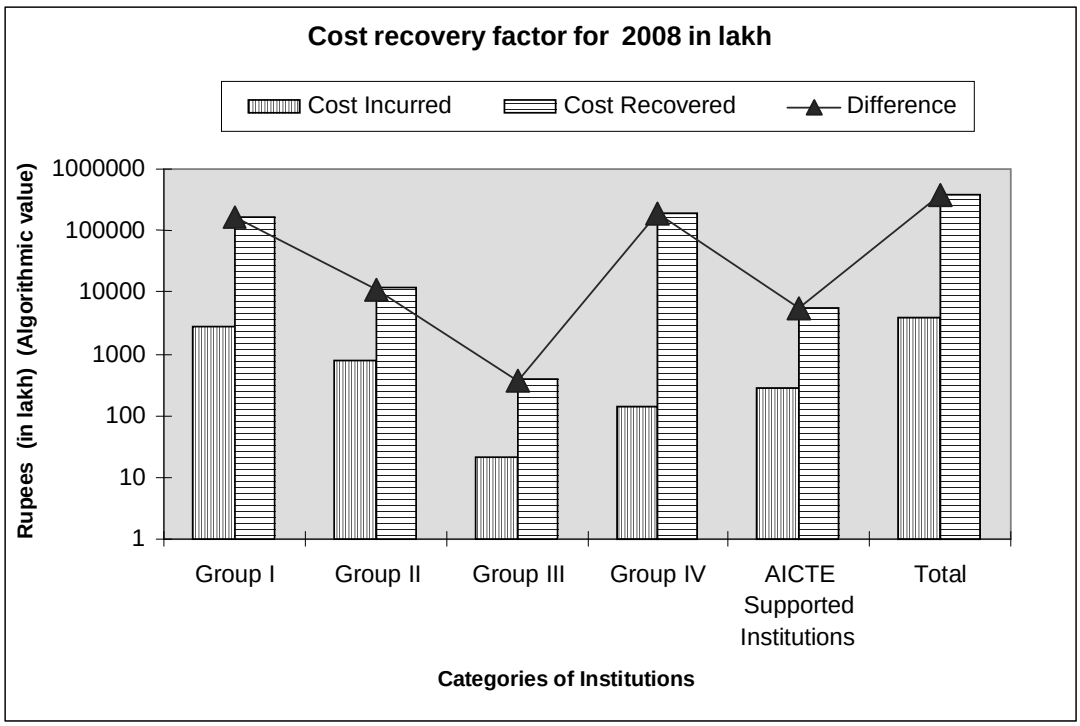

Figure 2. Cost incurred vs cost recovered for 2008.

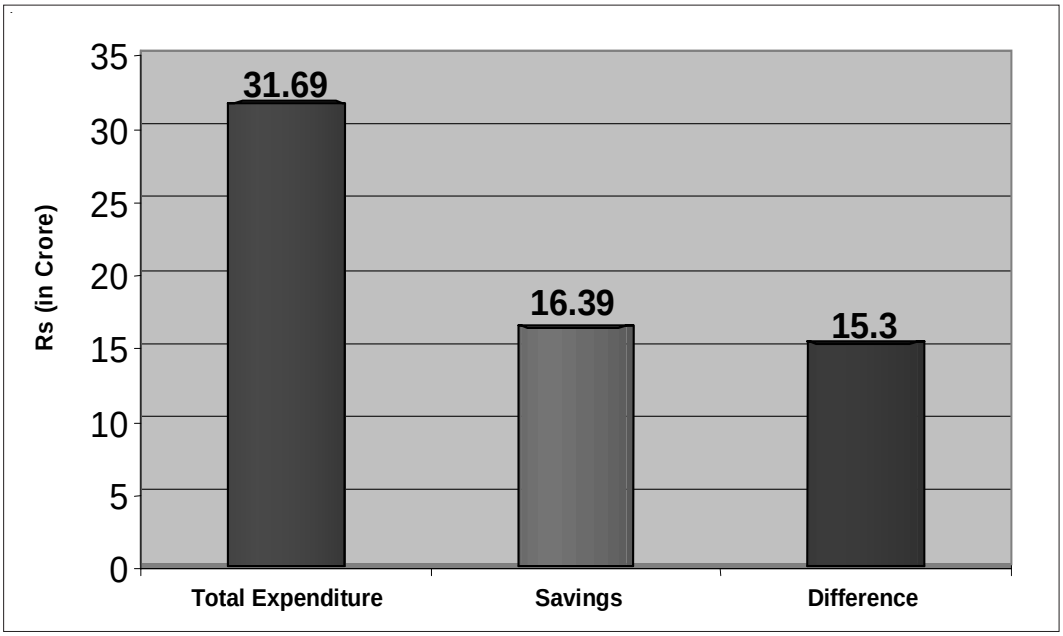

Figure 3. Cost savings vs expenditure on e-resources.

an interface called JCCC facilitates access to all journals at the content level to all core members of the Consortium. The JCCC offers an environment to a user wherein he/she may request one of the libraries in Consortium for a full-text article which is not accessible at his/her institution.

Figure 3 depicts comparison between cost savings vs total expenditure on e-resources. It may be noted that access to full-text resources in most of the institutions has been raised from negligible to more than 12,000 journals and six bibliographic databases.

9. IMPLEMENTATION STRATEGIES ADOPTED BY THE INDEST-AICTE CONSORTIUM

Considering the fact that funds required for subscription to e-resources for most of the institution are met by the Government, it is inevitable to take steps to ensure utilization of resources in all member institutions. Some of the important steps taken in this direction are as follows:

9.1 Promoting Use of Resources

The Consortium needs to take steps to promote usage of subscribed resources amongst the member institutions. It maintains a comprehensive website and a template web page for all member institutions. Besides, training programmes and annual meets, both at institute level and consortium level, posters, brochures and user manuals were prepared and distributed amongst member institutions. Soft copies of these tutorials have also been made available through the INDEST website. The website also provides links to web-based tutorials available for these resources[5].

9.2 Usage Monitoring

Most publishers maintain detailed usage statistics for resources offered by them to the Consortium. Comparative usage statistics for member institutions is obtained from the publishers and sent to the member institutions regularly with a request to optimise the usage and check misuse, if any. A custom-made web interface called e-RAMS (Electronic Resource Access Management System) was especially designed to provide and deliver statistics of usage to member institutions. The usage statistics for several resources are accessible to the institutions through web-based interfaces from the publisher's site.

9.3 INDEST-AICTE Consortium Users' Group at each Institution

With an aim to optimise usage of e-resources made available through the Consortium, each member institution is required to constitute an INDEST Consortium Users Group Committee, which may be a Sub-committee of the existing Library Committee. The INDEST Consortium Users Groups are required to meet once in a month to review the usage and other problems.

9.4 INDEST Consortium Users' Convention at each Institution

It is obligatory for each institution to organise a Users' Convention in their respective institutions for e-resources accessible to them through the INDEST Consortium for the benefit of their user community.

9.5 Regional Coordinators

The Consortium has provision to appoint regional committees and regional coordinators to promote subscription to e-resources through the INDEST Consortium amongst educational institutions.

9.6 Copyright and IPRs Issue

Users as well as librarians are sensitised on issues of licenses and agreements that consortium signs with the publishers. Users are informed about "does" and "don'ts" in electronic environment. While most of the publishers allow ILL, electronic delivery of articles are not allowed. The Consortium website provides detailed information about license agreements signed with the publishers on behalf of member institutions.

9.7 Reliability of Connectivity

Availability of adequate Internet connectivity and bandwidth are crucial for optimal use of e-resources. Steps are being taken at the institutional level as well as at the level of Ministry to increase bandwidth and connectivity available to each centrally-funded technical institution.

9.8 Benchmarking Outcomes

Providing access to e-resources to the faculty and researchers is not a purpose in itself. It is only a means to trigger a stronger research and academic culture in the institutions recipient of this benefit. *Science Citation Index* (*SCI*) is considered to be a filtering mechanism that indexes qualitative research output based on citations received by it. The *SCI* can also be searched to find out qualitative productivity on institutions. The source articles appeared in *SCI* for all INDEST members in 2003 can serve as a yardstick to measure current research output of these institutions. The research output in 2003 can then be compared with their research output in 2009 to measure the impact of e-resources provided through the INDEST-AICTE Consortium on the research productivity of beneficiary institutions over a period of five years.

However, the number of publications in *SCI* cannot be considered as sole criteria for measuring productivity of institutions. Other criteria that may also be considered include: patents, research projects, research reports, honours and awards, etc.

9.9 Categorisation of Institutions based on Usage

Member institutions of the INDEST-AICTE Consortium are categorised based on the recommendation made by the Task Force on Human Resource Development in Information Technology. As such, eight institutions (all IITs and IISc) are considered as Category I institutions, NITs (20); ISM, Dhanbad; SLIET; and NERIST fall under Category II institutions; and IIIT (Allahabad), and IIITM (Gwalior) are considered as Category III institutions. IIMs are considered as a category in themselves, and NITIE and IIITM (Gwalior) are also included with IIMs for purpose of providing e-resources to them. The category of institutions are basically used to denote the level of usage of e-resources, conceived to be highest amongst institutions in Category I, modest in Category II and lowest amongst the Category III. Further, usage of e-resources requires ICT infrastructure. While all Category I institutions have well-developed ICT infrastructure, most Category II and III institutions have at least modest ICT infrastructure. The rates of subscription, number of simultaneous users and number of resources offered to various categories of institutions are worked out based on their usage/suitability to the respective categories of institutions.

The Consortium is considering categorisation of institutions based on intensity of usage of e-resources instead of their status. Based on higher usage of a given resource, the IITs may be considered Category I institutions whereas IIM may be considered Category II institution for the same resource based on its low usage[6].

9.10 Training of Users

The web-based search and browse interfaces allow a user to conduct his/her own search without the help of an intermediator, i.e. a librarian or an information specialist. However, it is important that users are trained in the art of searching so that they can conduct better search that provide better results and save their time. Training programmes are a crucial requirement that a consortium has to fulfil to facilitate optimum use of subscribed e-resources. Training programmes act as a bridge to facilitate better communication amongst members of Consortium and find answers to common problems. Such programmes make users competent to conduct their own searches more effectively. Proper training would make library staff more competent enabling them to provide qualitative services. "On the job" training programmes are preferable not only because they benefit large number of users but also solve localised technological problems that can be solved by the experts available at the time of imparting training.

Imparting training to members of the INDEST-AICTE Consortium is a decentralised activity. All IITs, NITs and IIMs may conduct training programmes in their respective regions with financial support from the Consortium. Moreover, all member institutions of Consortium are also required to conduct training programmes in their respective institutions for the benefit of their users. The Consortium has signed a tripartite agreement with the publishers of e-resources with a local vendor as third party responsible for providing training on resources at

campuses of various member institutions. All institutions have been requested to take benefit of this arrangement and organise training programmes on various resources within their institutions.

9.11 Archival Access/Back-up

Unlike in print media, the electronic access is made available for the period of subscription. The electronic access gets terminated as soon as the subscription period is over even for the period for which subscription was paid. Most publishers have made offers for archival back-up or access to e-resources if Consortium decides to discontinue subscription to their resources. The offers made by the publishers fall under the following categories:

(i) **Perpetual Access to Resources for Subscribed Period**: Publishers like Elsevier Science and Springer have a policy to provide perpetual access to their subscribed resources for the period of subscription.

(ii) **Back-up CD-ROM made available during Subscription Period**: Backup on CD-ROM is being supplied along with its web-based access for resources like ABI/Inform Complete, ProQuest's Science and EBSCO Business Premier.

(iii) **Back-up Data (raw) to be supplied on CD-ROM on Termination on Subscription**: Several publishers, like EI Village and Springer Verlag, have agreed to provide their data on CD-ROM on discontinuation of service.

(iv) **Local Hosting of Electronic Resources**: ACM Digital Library has set up a local server that would host entire contents of ACM Digital Library using search and browse platform used by I Group.

More recently, all publishers have been requested to provide full-text data on CD/DVD in a standardised format on completion of every year with the search and browse capabilities in-built. They are also expected to help us install these CDs/DVDs on our servers so that the data could be used instantaneously as the need arises.

10. FUTURE ENDEAVOURS

The INDEST-AICTE Consortium plans to take up activities that may not be associated either with the purchase of e-resources or their usage but with completely different activities that require collaborative efforts and Consortium with its infrastructure can act as a catalyst. The Consortium would take up additional activities related to content creation[7]. Some of the important activities that Consortium has initiated include:

- Setting-up interoperable electronic submission of theses and dissertations.
- Setting-up of interoperable institutional repositories in member institutions.
- Web-based Union Catalogue of Journals and other serial publications.
- Web-based Union Catalogue of Books.
- Cooperative Cataloguing of Internet-based e-resources.

Besides, cross-subscription to e-resources with UGC-INFONET Digital Library Consortium is proposed with financial support from the MHRD, i.e. subscription to INDEST-AICTE resources for universities and UGC-INFONET resources for technical institutions as well as for subscription to UGC-INFONET e-resources for colleges. The project proposal, jointly submitted by the two Consortia to the Ministry has been sanctioned.

11. CONCLUSION

The INDEST-AICTE Consortium, with its collective strength of participating member institutions, has attracted highly discounted rates of subscription coupled with most favourable terms of agreement. Consortium was offered very attractive prices from the vendors not only because of combined strength of its members, but also due to the eagerness of publishers to enter the Indian market. The rates offered to the Consortium are lower by 50 per cent to 90 per cent depending upon the category of institution. Moreover, the rates have come down further with initiatives taken by the AICTE.

Consortium has triggered remarkable increase in sharing of both print and electronic resources amongst participating library through its website and through J-GATE Custom Contents for Consortia (JCCC) being subscribed for all core members of the Consortium. The INDEST-AICTE Consortium, being an open-ended initiative invites other institutions to join it for the benefits it offers. The consortium thrives on the strength of members it has. With increase in number of participating members the consortium would be able to get higher rates of discount for various resources and better terms of licenses. Future plans of INDEST-AICTE Consortium include setting-up mirror servers, local hosting and to obtain national licenses for important e-resources with access spread out to as many educational institutions as required.

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