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## SPECTERS IN THE USE OF ELECTRONIC JOURNALS: THE NORTH EASTERN HILL UNIVERSITY EXPERIENCE

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### Abstract

*A general observation of the northeastern universities and specifics based on NEHU experiences indicates that the universities in the northeastern regions record comparatively lower percentage of usage. The poor statistical show is attributed to the infrastructural dwarf in the universities. The nature of skewed usage pattern is found similar to other empirical studies suggesting that such methods may be espoused to form the parameters for determining the core collection of the electronic journal consortium. The paper briefly examines the existing subscription deals and suggested that resorting to alternative deals may strengthen collection and ultimately the usage pattern. The paper also maintains that higher per capita expenditure per students should be encouraged in the region to buildup infrastructure and come at par with the mainstream.*

**Keywords:** Electronic Journals; Bandwidth; Infrastructure; Citation Analysis; Core Collection; Skewed Use; Subscription.

### 1. Introduction

Journals still remains the most useful medium of scholarly communication in academic and research institutions. The momentum of its usage for reporting research results, obtaining up-to-date information and as reference sources is rather increasing. As a result, the amount of journals and the information that it contained are also increasing. The changes seen here are the medium of dissemination or the form of journal publication that has shifted from print to electronics. Whether this change from print to electronics has any effects on the quality of content is an intriguing query needed to be seen from a scientific perspective. The marketing strategy of electronic journals limited the scope of selection to a certain degree and junk journals finding its way into institutions of repute is common place. The advent of electronic journals have also ushered in certain issues like trustworthiness of the source, archival facilities for future references, plagiarism, copyright violation and intellectual dishonesty. These characteristics of electronic journals are universal in nature. On the contrary, the problems faced in the northeast Indian universities are still primitive in nature.

### 2. Infrastructure

Leaving aside few institutions, the paradigm shift in accessing journals from printed to electronic form was ushered in with the creation of consortium like UGC-Infonet and Indest. The infrastructural readiness of the participating institution was never a question for many institutions. The excitement

generated by the new technology was more a key reason than the realities stalking the institutions on innovation of this stature. In spite of all these, most universities are fast to technically synchronize with these innovations though certain universal issues like quality, relevance, pricing etc are yet to be addressed.

The northeastern universities were crudely awakened to the culture of consorted electronic journal subscription. The abruptness felt by these universities were not because of their ignorance of the technology but more because of infrastructural, economical, political and geographical reasons to name a few among the many facets of the age old impediments to the development of the region. At the early days of UGC-Infonet Hangsing et al (2003) conducted a survey on the infrastructural status of the northeastern universities and found that half of the university libraries did not even have internet connection capable of accessing electronic journals. The number of computers pathetically ranges from 4 to 30 and the number of IT trained staff range from none to 12. However, these figures are improving but not at the adequate pace to catch up with the mainstream university libraries. The region appears to have failed to attract the best talents in the profession with proper leadership quality. The inequitable status of the university libraries of the northeast and libraries from other parts of the country will remain unless very slanted policy in favor of the libraries in this region are adopted by the governing and funding agencies.

### 3. Bandwidth

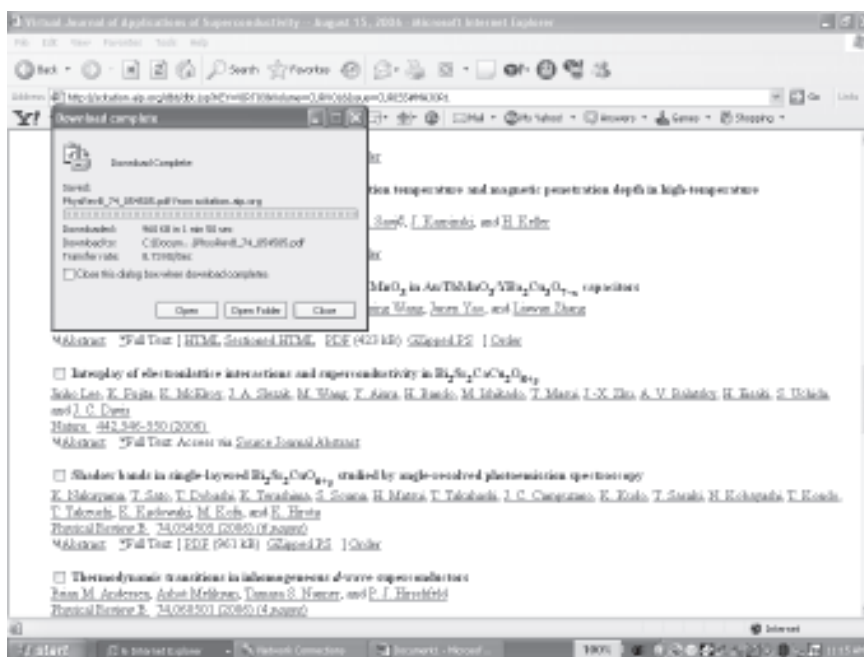


Fig.1: Actual transfer rate

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Bandwidth is one major area that contributes to the low usage of the electronic journals. Most northeastern university relies solely on the minimum bandwidth. There is no visible effort to increase the bandwidth due to reasons best known to the universities. The North Eastern Hill University start of with a 64 kbps sponsored by Ministry of Information Technology way back in the year 2000 which caters to 70 terminals. After UGC-Infonet the bandwidth was increased to 128 kbps in the year 2003 and again in the year 2004 it was upgraded to 512 kbps. On August 20, 2006 the bandwidth is upgraded to 1 Mbps. Despite the increase, the fastest/ actual transfer rate remains at 7-8 kbps. A screenshot indicating the actual transfer rate is shown here in Fig. 1. This rate is measured on a single terminal with concentrated access to the whole bandwidth. The transfer rate is even lesser when it is sprinkled down to the terminal level. The dependence on VSAT alone appears to have some inherent flaws. Even UGC recommends universities to go for leased lines. The number of terminals connected to the network seems to grow faster than the bandwidth. The latest increase of bandwidth fails to show any marked difference owing to various issues like increased access terminals and choked connection due to improper security system. The terminal takes so much time to download a decent PDF file, particularly during working hours and these entails lots of wasted time which very few could afford. Presumably, similar state of affairs prevails in other universities of the region.

#### **4. Power Supply**

Apart from bandwidth, power cuts are problems that the northeasterners have been living with since so many years. North eastern states are notorious for frequent power cuts. Having accumulated huge amounts of debts from none payment for electricity the states resorted to frequent load shedding. Even the state of Meghalaya known for its regular power supply had to resort to power cuts due to scarcity of rainfall this year. The universities in this region are ill equipped to overcome such contingencies which result in more network downtime. Non-usages of internet are frequently reflected in the bandwidth traffic maintained by ERNET. The reason behind this non usage of bandwidth traffic is more of power failure than system failure. The moment the connection is free from technical snag or power cut the bandwidth is utilized to the maximum.

#### **5. Usage**

Despite of all the snags in accessing these online journals the northeastern universities recorded a comparatively decent download. A comparative view of the total usage among the selected northeastern universities are plotted in fig.2.

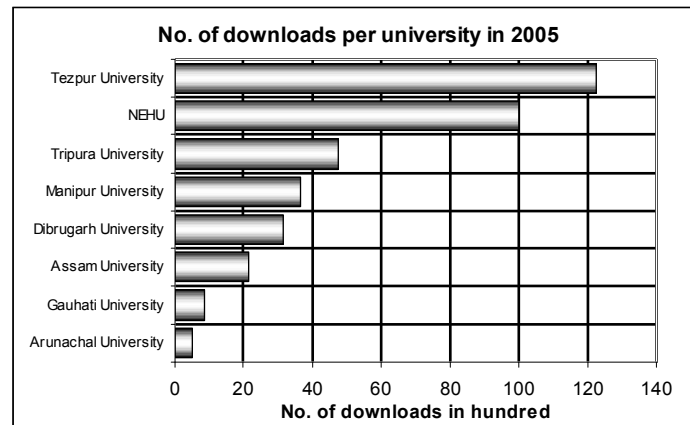


Fig.2: No. of downloads per University

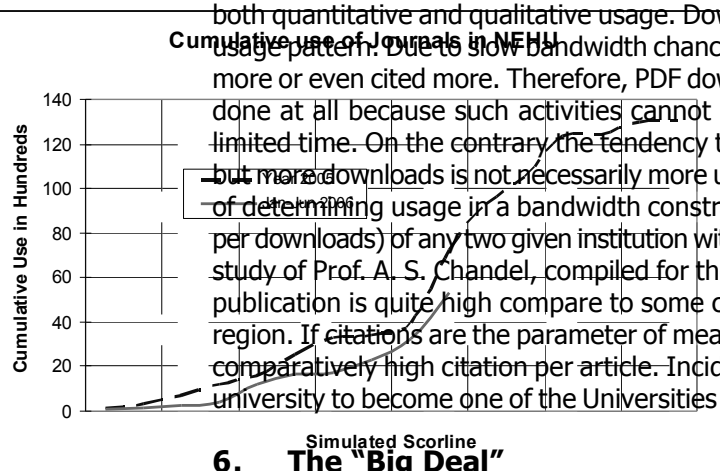
The total download recorded in the year 2005 for these northeastern universities is 37301. Arunachal University recorded a very low 1.39 percent of the total downloads and Tezpur record the highest of 32.85 followed by NEHU. These statistics seems to have been heavily influenced by the kind of infrastructure available in the respective universities. A report on infrastructure and bandwidth status will explain such wide variation prevalent among these universities. In the absence of this information, rationalization of the statistics will be a futile exercise.

The download data of the North Eastern Hill University are gathered for the year 2005 and 2006 (January to June). These data is plotted to see the comparative pattern of usage between 2005 and 2006. Since the data for 2006 is available for the months of January to June, the data for both the years is simulated to show a comparative view. Interestingly, the graph (Fig.3) shows that the usage seems to decline in the current year as compared to usage the in 2005 despite increases in bandwidth. As per the current scenario chances are that the total downloads in 2006 may decrease. However, the actual downloads may eventually increase or decrease at the end of the year. Since the data is not based on any timeline, monthly usage pattern is not depicted. This makes it even more difficult to predict the outcome.

Fig.3: Usage pattern of Journals in North Eastern Hill University

### 5.1 Usage V/S downloads

Determining the usage pattern needs to be addressed using different parameters. Usage involves both quantitative and qualitative usage. Download alone is not sufficient to quantify or qualify the usage pattern. Due to slow bandwidth chances are that any article downloaded is prized more, read more or even cited more. Therefore, PDF downloads for casual browsing will be very minimal or not done at all because such activities cannot be afforded when the bandwidth is low and one has limited time. On the contrary the tendency to download more is there when the bandwidth allows but more downloads is not necessarily more usage. The number of download is not the right medium of determining usage in a bandwidth constraint environment. Moreover, comparing the usage (as per downloads) of any two given institution with varying bandwidth is simply absurd. In an unpublished study of Prof. A. S. Chandel, compiled for the North Eastern Hill University, the average number of publication is quite high compare to some central universities of "repute" which are not from the region. If citations are the parameter of measuring quality, intellectual outputs of NEHU accorded a comparatively high citation per article. Incidentally, these are some of the reasons that propel the university to become one of the Universities with Potential for Excellence.



For most northeastern universities accesses to electronic journals were made possible with UGC-Infonet under the leadership of INFLIBNET. As reported in many forums and publications, the idea was conceived to curb the heavy expenditure of universities incurred on journal subscriptions. The publication trends of journals also show that more and more journals are moving towards the digital forms mainly due to lower reproduction cost, fewer time lags between submission-publication, availability of the technology and ease of access. All noble and good intentions are marred by just one specter, the deal we get ourselves into. The term "Big Deal" was coined by Frazier (2001) to

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describe deals that deprive us the freedom to choose which according to McGinnis (2000) is "selling of our collecting soul". According to Frazier these deals "bundle the strongest with the weakest published titles, the essential with the non-essential" which "weaken our collection with journals we neither need nor want". A simple analyzes of citation was conducted to test if certain small amount of journal tends to form the core collection of North Eastern Hill University.

Fig.4: Core journals of NEHU based on cumulative citation of PhD theses

Since long it has been established that citation and publication pattern are highly skewed. In his principle of journal scatter, Bradford (1948) first established a nucleus of core journals most instrumental in the intellectual output. Similarly, Garfield (1996) found that "surprisingly small number of journals generate the majority of both what is cited and what is published". To test this principle of core collections, citation of 399 randomly selected PhD theses were analyzed. These theses were of different subjects submitted to various academic departments of the North Eastern Hill University since the past few years, both pre and post UGC-Infonet. The theses were found to have cited 163 journal titles and these journals were cited 1480 times. These selected theses indicated that variation in title use is heavily skewed, as shown in (Fig.4). The cumulative order of the usage show that 80% of the citation concentrated in the first 30% of the journals and 90% citation concentrates on approximately 80 journal titles (50% approximately). After that the curve flattens out, indicating no significant usage beyond 50% of journals in various subjects. It is safe to state that despite the efforts to increase the number of subscription not all journals are actually used. The trend shown in the citation of the North Eastern Hill University is universal in nature and various studies have indicated the same trend. Based on library circulation data of print collections, Trueswell (1969) found the same skewed distribution of approximately 80 percent of the total number of circulation accounted for only 20 percent of the total collection. These same patterns of skewed distributions are again established in the various other empirical studies (Davis, 2002b). Though every institution tends to show different patterns of skew, a collection of all institution patterns will generate a wider core usage which can form the basis of our Infonet subscription.

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From the above discussion it is clear that so much is spent on unused or undesirable journals in the process of subscribing a few good journals. However, the obvious alternative of selective subscription provokes the publishers to quote high price per journal. For the publisher, academic journals are profit all the way. Hayes (1995) stated that "It's hard to imagine a sweeter business than publishing academic journals". Profit margins are so high that there is ample space for re-orientation of deals towards core journals. In an effort to identify the e- journals worth the money spent, Davis (2000a) studied and differentiates society/association publications and commercial publication. The result of the study illustrates that "society or association publications dominate the top ranking journals and are significantly less expensive than their commercial counterparts". The patterns of money spend on different types of publisher by UGC-Infonet and identification of core journals is yet to be seen. These exercises should have preceded the actual initiation of the subscription.

Another specter haunting the Infonet consortium is the mode of ceasing subscription. Presumably the parameters used for de-subscription must have been based on number of downloads. These raised uncomfortable issues like the party that generates the statistics and the methods used to ascertain such statistics. There are respectable amount of disagreements in the methods used to determine the number of downloads. Since, the examination of these methods is outside the purview of this paper, it is assumed that existing ones are reliable. Even if the existing methods of monitoring downloads is trust worthy and acceptable a mechanism outside the purview of the publishers to monitor these accounts is highly desirable to decide upon de-subscriptions or for that matter selections.

## 7. Conclusion

The propagated efforts to focus more on the development of northeastern region fail to bring about no significant changes in the region. In spite of all the developmental packages the region will remain miles behind the rest of the country unless the specters that make the northeast less develop than the rest of the country are identified. Like a vicious circle one hurdle leads to another. The atmosphere in the academic front is pretty much the same. Supposing if a northeastern university shows a very high per capita expenditure per students, the trends should be encouraged to bring about changes fast enough to come at par with rest of the country. However, such trends are usually discouraged by imposing additional baggage to curb the development trend. The result is marginal infrastructural facility. The marginalization of infrastructure remains the dilemma that impedes the usage of electronic journals. Under such constraints the decent amount of usage with high citations of the publications are quite appreciable.

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