Scholarly Communication and Intellectual Property Rights

Editors
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BS Publications

A unit of **BSP Books Pvt. Ltd.**

4-4-309/316, Giriraj Lane, Sultan Bazar,

Hyderabad - 500 095 - A.P.

Phone : 040 - 23445605, 23445688

***Y. Srinivasa Rao and A.L. Moorthy*: Scholarly Communication and Intellectual Property Rights: Papers presented at the National Conference, 4-5 August 2014**

Sy. No. 71/1, NH-5, Nidamanuru, Vijayawada – 521104,
Dist. Krishna, Andhra Pradesh
www.spav.ac.in

Published by

BS Publications
A unit of **BSP Books Pvt. Ltd.**
4-4-309/316, Giriraj Lane, Sultan Bazar,
Hyderabad - 500 095 - A.P.
Phone : 040 - 23445605, 23445688
e-mail : info@bspbooks.net
www.bspbooks.net

ISBN: 978-93-83635-19-1

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Prof. Dr. N. Sridharan
Director

Foreword

I am pleased to present the publication entitled "**Scholarly Communication and Intellectual Property Rights"**. The main purpose of the volume is to create awareness among academicians, scientists, information practitioners, lawyers, scholars and students in use of scholarly communication and its publication and protection.

Society needs highly talented human resources to uplift sustainable ecosystem and economic prosperity. Academic community plays a dominating role in educating human values and skills needed for their survival. Indeed, the stature of academic community is largely recognized by their teaching, research, innovations and inventions.

The theme of the publication mainly focuses on scholarly communication and publication, intellectual property rights (IPR), open access and plagiarism. Issues, challenges and remedies are the underline factors helping the academicians, scientists, students and researchers in writing academic and research papers and publishing them in reputed peer-reviewed journals. Infact, publishing sector unleashed cost, copyright, monopoly and bundling journals which played a towering role in creating barriers in accessing scholarly content. Publishers reap huge profits year after year and never pass it on to either authors or institutions that support research or the referees and editors who review papers and edit journals for their love of the subject. Many initiatives and movements have been started to counter and overcome these barriers and monopoly system of content accessibility. Most important is the Open Access (OA) movement that gained its roots worldwide after Budapest Open Access Initiative (BOAI) in 2001; in true sense it started with the advent of World Wide Web and the establishment of arXiv (repository) at Los Alamos Laboratories for providing free and open access to research in Physics in 1991. Advantages of OA journal publishing is one of the key factors for capturing, archiving and disseminating of scholarly content openly and freely without any restrictions of use. To succeed in this endeavour and to reap benefits, an elementary level awareness programmes on various issues of research and innovation including copyright and plagiarism are encouraged. Patenting of research and development leading to meaningful products, processes and technologies for the benefit of mankind is to be encouraged. Implementation of proper evaluation system at every level in research and development projects taken by research scholars, scientists and faculty of academic institutions is needed with an assurance to avoid duplication and plagiarism of research, assure quality in publications, safeguard IPR including copyright, patents, designs, trademarks etc.

Over centuries, India is known for rich culture and history of science demonstration and heritage of traditional knowledge. India is one of the fore-runners among developing countries to create, preserve and protect intellectual creativity and innovation. Academic institutions, scientific and research organizations like universities, CSIR, DAE, DRDO, ICAR, IITs, etc. in India are trying their best to encourage scientific creations and innovations. But safeguarding

and exploitation of these products, processes and services in commercial way is more or less a failure in the country. Moreover, India has signed agreements including GATT, TRIPS and WIPO with a mandate for setting up minimal standards, procedures and remedies to protect IPRs. However, stringent policies and procedures make the IPR system in India fair and functional at every stage for acquiring and protecting human creations and innovations. When compared to Asian countries such as Japan (43.08%), Korea (43.95%) and Taiwan (45.88%) and China (32.99%) in terms of patent grants of 69907 over last 12 years, India is the least innovative nation with 23.07% due to higher rejection rate in patenting system. India also made an agreement with the European Patent Office on 02February 2009 granting access to its Traditional Knowledge Digital Library (TKDL) for sharing of digital medicinal literature including Ayurveda, Unani, Siddha and Yoga available in public domain in multiple languages. Besides, India is promoting academic-industry collaboration for sharing knowledge, expertise and experiences and also attracting global companies to invest in research & development. There are also pressures on India under intense scrutiny on IPR protection at global level. The US pharma lobbies made India to be included in “priority watch list” of countries regarding IPR protection. This kind of lobbying in every sector are not only hindering the process of economic growth but also reducing the societal progress.

However, our main aim is to create, formulate and disseminate new knowledge and improve quality of Indian science and technology for social benefit. The academic community should be trained to bridge the gap of digital divide. India should also encourage collaboration among academia and industry for sharing of knowledge, resources and infrastructure to foster education, research and innovation at regional, national and global levels. Finally hardwork, commitment, perseverance, and pro-activeness among academia will make entire system more visible, transparent and valuable. This National Conference on Scholarly Communication and Intellectual Property Rights is a small step towards holistic goal.

Prof. Dr. N. Sridharan

Preface

Scholarly communication dates back to 1665 when the first journals*Philosophical Transactions of the Royal Society,* London, UK and *Journal des Scavens*from Paris, Francewere started to communicate research to the peers, researchers and the common public. Since then, it took long strides in popularising the communication process and became a multi-billion dollar publication industry with more than one lakh scholarly periodicals reaping the benefits to the publishers. What began as Industrial Property in the seventeenth and eighteenth centuries gave way to Intellectual Property through intellectual manifestations of Patents, Trademarks, Designs, Copyright and so on. The monopoly of publishers and their strangle hold on scholarly communication led to the Open Access Movement in a big way and is slowly getting acceptance by the scientific and research communities, students and scholars, as well as the public at large.

For identifying the basic elements in research, issues and complexities involved in scholarly communication, intellectual creations, innovations, technological applications, intellectual protection, access policies and the future of scholarly communication, the school of Planning and Architecture, Vijayawada conceived the idea of organising this National Conference on Scholarly Communication and Intellectual Property Rights (SCIPR-2014). The main objectives of this Conference are to educate basic elements and methodology involved in writing academic and research papers, citation systems, plagiarism check and communicating in reputed peer-reviewed journals including open access periodicals besides the technological issues, complexities and advantages of intellectual property rights. These are the underlying factors for helping the faculty, students and researchers for enhancing education, research and innovation capabilities.

Papers received were reviewed and evaluated for their originality and intrinsic value by experts and 16 papers were selected. Many have to be returned to their authors due to the fact that they contained larger portions of material openly accessible on Internet. These 16 papers are arranged under three important sections namely scholarly communication and publishing, open access and intellectual property rights. The volume will be a valuable resource in the field.

It gives me immense pleasure to acknowledge our profound gratitude to sponsors, the Patent and IPR Division, Department of Electronics and Information Technology (DEITY), Ministry of Communications and Information Technology, and also Defence Research and Development Organization (DRDO), Ministry of Defence, Government of India for their financial support for conducting the Conference.

The National Conference would not have been meaningful without this volume. I would like to express our deep sense of gratitude to the Publishers M/s BSPublications, Hyderabad who have taken the responsibility to bring out the Conference volume in the shortest time free of cost to promote the educational institution.

Vijayawada

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Invited Paper

Scholarly Communication and Intellectual Property Rights in the Digital Era: Breaking Barriers to Promote Access

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ABSTRACT

While scholarly communication has seen tremendous strides in the recent years with the leapfrogging of information technology and application in the way science and scientific data are disseminated, the core issue of contention remains the Intellectual Property Rights (IPRs). IPRs refers to creations of the mind viz., inventions, literary and artistic works, and symbols, names, images, and designs used in commerce. IP protection has been conceived to encourage creative people to own their creativity and innovation in the same way that they can own physical property. Copyrights are the IP rights transferred by the authors to the publisher of a learned journal post-publication and this remains the major bottleneck for widest access to data/information. In the recent years several attempts have been made to address how the issues of copyrights could be designed to ensure that the authors continues to retain the IP rights still ensure widest dissemination of their work. One major strategy has been the advent of Open Access (OA) system that facilitates unfettered access to published research. OA also permits putting these key resources out of ownership; eliminates the need for permissions to reproduce and distribute content; and facilitate the providers like libraries to work without the fear of legal actions envisaged by the IPR systems. OA also increases the visibility of faculty and institution, reduces their expenses for journals, and advances their mission to share knowledge. Some key efforts to address the copyrights include licencing polices like Creative Common Licensing (CCL) that at once attempts to address the concerns of the authors in terms of copyrights and also promote unfettered access to data/information to all users. There have also been several other global initiatives in this direction both from the developing and developed countries. These are discussed in the paper.

Keywords: Scholarly Communication, Open Access Models, Intellectual Property Rights, Copyright.

1. INTRODUCTION

Ever since the publication of the first journal in 1665, publication of research in learned journals continues to be the most important way scientists communicate with each other, build on the work of others, to scrutinize and refine their results, to contribute additional ideas and observations, and to formulate new questions and theories. Learned journals therefore have played a key role in the complex ecosystem of doing research the results of which transcend across the society, both for researchers themselves and for all those in

society at large. The key stakeholders in the scholarly communication system are (Satyanarayana, 2004):

- Creators of new data/information (authors),
- Those who disseminate (publishers),
- Those who provide access (libraries),
- Those who bear the cost for obtaining access (Govt/private buyers), and
- Readers who include researchers who further the knowledge as also other users who apply the knowledge fur public good.

Over the last few decades, there are clear and visible tensions between the interests of key stakeholders as their priorities, commitments and obligations vary. Researchers want speedy and effective publication and dissemination of research results to enable them to claim priority, secure high impact and credit for their work, publishers—either commercial or not-for-profit—wish to run a profitable journal and finally funders who wish to secure maximum benefit for money invested. Clearly, the single primary interest and objective of the most important stakeholders viz. knowledge creators (researchers-authors) and funders (Govt) are providing/facilitating better, faster and unfettered access to research publications for everyone who wants to read and/or use them has been seriously impacted by the publishers who demand subscription for access.

This impacts all the three major means of archiving and providing access to new research which are intrinsically linked.

- Subscription-based journals form the largest chunk both commercial and non-commercial publishers,
- Open Access (OA) journals that rely on a fee-for-publication model with few restriction on subsequent access, and
- Repositories that provide access to research papers at some point before the final appearance in print in a learned journals.

There are other variations like hybrid models of some subscription-based journals under which publishers may set limit access that impacts the inclusion of the paper in the repositories.

The subscription based model on which a large number of learned journal publications depend is responsible for the turmoil seen in the scholarly communication system. Typically, when authors publish their papers in a learned journal, they transfer their copyrights to the publishers. The publishers in turn bring out the journals and charge users through a subscription fee. The publishers claim that the revenue generated is needed to bring out high quality journals which incur costs towards running an editorial office, peer review costs, copyediting, printing, marketing circulation *etc.* This may not entirely correct as journal publication is now known to be a huge commercial enterprise with profit margins of 40-50% (Noorden, 2013). Like, journal publishing has largely contributed to the US$9.4 billion profit from about 1.8 million English language papers each yielding revenue of about $5000 to the publisher (Noorden, 2013). With an annual return on investment of about 40 per cent, journal publishing is perhaps more lucrative for investors than the pharma sector. This is the most important reason why the publishers are unwilling to cede the copyright to the authors even while it is the most moral thing to do as the scientist/authors are creators of this data/information that is sold through the learned journals. Thus, copyrights remain the key to the entire crisis in scholarly communication.

2. WHAT ARE COPYRIGHTS?

Copyrights are a bundle of exclusive rights to publish and distribute a work, automatically assigned to the author(s) by legislation. Copyrights encompass both moral and legal (exploitative) rights. Moral rights envisage acknowledging/giving credit to the creator while exploitative rights are legal rights about the ownership in the use and reuse of scholarly material. Conventionally, these legal rights that define reuse, republication and/or redistribution, are generally transferred in full to the publisher that forms the core of debate of universal access to information to users. Exploitation rights are in themselves a bundle of rights and can be determined on the purpose of use. Like copyright laws permit at least one type of reuse for educational non-commercial purposes. This right to reuse continues to be the key to the effective key to access.

2.1 Impact of Copyrights – Advent of Open Access

The increasing subscription costs of journals and the copyright policies of journal publishers is impacting even developed countries like the US that has perhaps most stringent

Intellectual Property Rights (IPRs) laws. The USA is seriously concerned about the restrictions on access to research data and its subsequent impact of the progress of research as also drain the public funds. A recent report submitted by the National Library of Medicine, Bethesda to the Committee on Appropriations states that that these trends (increase in the prices of learned journals) have adversely affected the ability of academic and health sciences libraries to continue to support the needs of the research and health care provider communities for access to biomedical literature (Zerhouni 2004). Between 1991 and 2000, library subscriptions to scientific, technical, and medical (STM) journals in North America are quoted to have increased by 158 per cent, which is over 6 times the inflation rate during this period (Zerhouni 2004). According to another estimate from the United Kingdom, from 1990 to 2000, medical journal prices have increased by 184 per cent and science and technology journals 178 per cent (SQW Limited, 2003). The logical option is to look for other means of disseminating the research findings, with or without the involvement of the journal publishers. Open Access Movement is the result of this conflict on the IP rights between the authors/funders on the one side and the publishers on the other.

3. WHAT IS OPEN ACCESS?

Open Access literature is digital, online, free of charge and free of most copyright and licensing restrictions (Bethesda Statement on Open Access Publishing, 2002). The Budapest Open Access Initiative states that there are many degrees and kinds of wider and easier access to this literature. By ‘open access’ to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited (Budapest Open Access Initiative, 2003). This ‘control’ obviously includes the IP rights (copyrights of the authors). Since early 2000 the OA movement has caught up all over the world and in the process has spawned several models that continuously addressed the concerns of the authors.

3.1 Open Access Copyright Models

OA journal publishing has created a number of entirely new copyright models that are contrary to the practices adapted by traditional academic journals where authors have little leverage of copyrights. These new models permit authors to retain it (copyrights), share it or transfer it. The earliest models, authors could retain their copyright with restrictions on reuse to educational purposes but for other purposes they needed to seek publishers' permission. The second and most vibrant model is called the Creative Commons License (CCL); this helps creators (licensors) retain copyright while allowing others to copy, distribute, and make some uses of their work, typically non-commercial. In this model the licensors (authors) get the credit for their work and the rights last coterminous with their copyright. The CCL effectively changed the access model from all *rights reserved* into a system where *only some rights reserved*. The CCL has since evolved into a robust system giving rise to various modifications/improvements suggested by the authors' groups that constantly promotes free access to information to all.

Some leading journals like the leading scientific journal publisher Public Library of Science (PLoS) and BioMed Central (BMC) use the CCL license 'attribution' in a varied form. The CCL while assuring the moral rights, in terms of proper acknowledgement gives wide scope for the post-publication use and reuse the article, including for commercial use. Some journals like the *British Medical Journal* (BMJ) and *Nucleic Acid Review* have just switched from the traditional model of publishing to an OA model. The authors keep the copyrights but only transfer use licenses essentially for commercial exploitation to the publisher. In return, the authors get a share of royalty earned by the publisher.

This model benefits both the authors and publisher and the benefits are shared by both. There are several other models as well that at once address the copyrights with access. There are hybrid journals (both print and e-versions) which are essentially subscription-based in which the authors have the option of paying a fee to make their content open access. *The Proceedings of National Academy of Sciences* (USA) uses this model. Many Indian journals however have switched over to the OA models; one of the earliest is the *Indian Journal of Medical Research* (OA since 2004). Currently the entire content of *IJMR* since inception (1913) is available free to access on the web. *Current Science*, and *Defence Science Journal* are other journals that have become OA. Currently there are

about 300 OA publishers who together contribute to over 10 per cent papers in thousands of journals (Beall, 2013). Still a lot needs to be done in India (Satyanarayana, 2010).

For repositories authorizing OA to publishers is somewhat complex. Where the authors have published in an OA journal the loading on to a repository is easy. But when the paper appears in traditional user-pays model the publisher will not allow such use. The authors typically post the preprint in the OA repository as they hold the copyright at that point. If the preprint gets published is later accepted for publication in a journal, the publisher may not permit authors for the refereed post-print to be posted to an OA archive. If there is difference between the preprint and final published version, the author can post the changes in the final version as list of corrigenda. While this may not be the best option, this is much better than no free access at all.

4. CAN OA BECOME A SUSTAINABLE MODEL?

The OA publication model essentially is based on the author-pays model and has faced several problems since several funding agencies are averse to paying the journals as they consider it paying twice as they have already support the research. This is since been resolved which is discussed below. Meanwhile, several ways to financially support OA are evolving that include per-article publication fees, as used by PLoS and BMC and direct subsidies from funders. These preferences are also reflected in the choice of copyright models for OA. A recent web survey among 1,226 corresponding authors of OA articles in BMC journals, *PLoS Biology* and *PloS Medicine*, *BMJ* and *EJCL* showed that a large majority (71%) would prefer to keep the copyright. This shows of the evolution of thinking on the copyright issues by the authors (Hoon and De Graf 2006)**.** This model that allows authors keep the copyright appears to be preferred by nearly half of the respondents; the CCL model is preferred by over a third of respondents. Only a small percentage (16%) prefers the model whereby the commercial exploitation rights are transferred to the publisher (Hoon and De Graf 2006).

5. CONCLUSIONS

It is clear from this survey as well as the response to the OA journals, the *PLoS One* is the largest publishing journal last year, (Satyanarayana, 2013) that authors publishing in OA journals appear to be no longer satisfied with assigning copyrights to publishers but expect

to be part of the new change. Given the choice between transferring the copyright and keeping it, most authors opined to keep it. Even in respect of handling permission requests to reuse the article, most respondents do not see a role for the journal publisher. Sketching an ideal copyright licence, the respondents want to permit authors and others to reuse articles for educational and scholarly purposes. With regard to reuse for commercial purposes, however, most authors prefer to limit this type of use by others but permit commercial reuse by the authors themselves.

Other stakeholders have also taken several initiatives to join and strengthen the movement. The International Federation for Library Associations (IFLA) has developed a number of goals and a set of principles for the International Development Agenda of the World Intellectual Property Organization [IFLANET]. The IFLA has suggested that

- Libraries and academic institutes can stimulate the use of CCL or similar licences that allow a sharing of copyright, thus enabling the reuse of scholarly information for educational and scholarly purposes;
- There is also a need to raise awareness on copyrights and other IPR issues among knowledge creators, journal editors etc; and
- Libraries and academic institutions must influence publishers to redesign their present copyright policies in respect of reuse of published articles if necessary through standardization of copyright licences of journals.

Broadly a fundamental shift in how research is published and disseminated is needed. There have been several recent global initiatives in that direction. These include the publication of Royal Society Report on *Science as an Open Enterprise* in 2012 (Royal Society Report, 2013). The committee recommends that scientists should communicate the data they collect and the models they create, to allow free and open access, and in ways that are intelligible, assessable and usable for other specialists in the same or linked fields wherever they are in the world. Where data justify it, scientists should make them available in an appropriate data repository. Where possible, communication with a wider public audience should be made a priority, and particularly so in areas where openness is in the public interest. The Finch Committee (2012) opined that UK should not just encourage transition to OA but also strongly accelerate the process towards the clear policy direction towards support for publication in open access or hybrid journals to be funded by the UK Government. The Committee recognized that the process is complex but important enough

to associate all the stakeholders in the OA system, especially the funders in the UK. Toward realising those benefits in a sustainable way the Finch Committee exhorts coordinated action by funders, universities, researchers, libraries, publishers and others involved in the publication and dissemination of quality-assured research findings.

OA has been making rapid strides with its share growing at a healthy rate of over 1% a year (Pincock, 2013). As of now about 17% of the 1.66 million articles indexed by the abstracting and citation database *Scopus* in 2011 were freely available from journal publishers. Globally over 200 institutions and 80 research funders including major ones like the NIH, USA, Wellcome Trust etc. expect their researchers' work to be OA (roarmap.eprints.org). In addition, commencing from 1 April 2013, scientists who get support from any of the seven UK research councils will be asked to publish their work in a journal that either provides immediate and unrestricted access to the final published version of the paper, or agrees for the manuscript being posted in an OA repository within six months for science papers (Pincock, 2013). The US NIH requires that scientists submit final peer-reviewed journal manuscripts arising from their funding to the digital archive PMC to enable such papers be available to public within one year of publication (Pincock, 2013).

Independent of these global initiatives, there have been exciting developments underway in that direction. PeerJ (*https://peerj.com/*), an open access journal/publisher offers a preprint server for biological sciences, one the first in this area. But unlike the conventional preprint servers like arXiv, PeerJ permits authors to post their preprints on this site with some conditions (Beall 2013). Another publisher F1000Research (*http://f1000research.com/*), unlike arXiv, figshare and PeerJ offers a hybrid model that permits posting of manuscripts for public access at the time of submission besides regular publication. Once a paper is recommended by at least two reviewers, the F1000Research indexes the paper. This model still new to biomedical sciences is growing slowly with small pockets of primarily highly quantitative research, for example, epidemiology, population genetics (Desjardins-Proulx *et al.*, 2013). Preprint servers with wide pre-publication diffusion of science, may help in what is called as 'community evaluation' of science as a wide spectrum of scientists can, unlike conventional peer review, continuously comment on the quality and relevance of reported research (Desjardins-Proulx *et al.*, 2013). But some specific strategic concerns of biomedical research may however limit complete disclosure

(Satyanarayana, 2011). It will be interesting to see whether the excessively secretive biomedical scientists bite the bullet.

Rapid dissemination of research are on to give the readers a glimpse of science-as-it-happens, *i.e.*, a near real-time access and availability of research data/information through access to discussions, data, analysis and description *et al*. before publication. Population biologist Carl Boettiger is practicing this 'open-notebook science' with access to their daily progress, analysis and writing while Drexel University, Philadelphia chemist Jean-Claude Bradley publishes the entire output of his laboratory in near-real time bringing in an entirely new paradigm of 'share early, share often' approach (Priem, 2013). A new journal *Push* (*http://push.cwcon.org*) permits researchers share their work through progressive uploading of new versions of their work with an open online interaction with reviewers and other users facilitated by the publisher (Priem, 2013).

REFERENCES

1. Beall J. (2012) Predatory publishing. *Scientist.* Available from: *http://www.the-scientist.com/? articles.view/articleNo/32426/title/Predatory-Publishing/*, accessed on 13 June 2013.

2. Bethesda Statement on Open Access Publishing [Internet].Richmond (IN): Earlham College; 2003 Jun 20.

3. *http://www.earlham.edu/~peters/fos/bethesda.htm*

4. Budapest Open Access Initiative [Internet]. New York (NY): Open Society Institute; 2002 Feb 14. *http://www.soros.org/openaccess/read.shtml*

5. Desjardins-Proulx, P., White, E.P., Adamson, J.J., Ram, K., Poisot, T., and Gravel, D (2013). The case for open preprints in biology. *PLoS Biology,* **11**: e1001563.

6. Finch, J. Accessibility, sustainability, excellence: how to expand access to research publications. Report of the Working Group on Expanding Access to Published Research Findings.

7. http://www.researchinfonet.org/wp-content/uploads/2012/06/Finch-Group-report-FINAL-VERSION. pdf

8. Hoorn, E. and van der Graaf, M. (2006). Copyright issues in open access research journals: The authors' perspective. *D-Lib Magazine*, February, **12**(2). http://www.dlib.org/dlib/february06/vandergraaf/02vandergraaf.html

9. IFLANET Committee on Copyright and other Legal Matters (CLM), http://www.ifla.org/III/clm/ p1/Library-RelatedPrinciples-en.html.

10. Noorden, R. (2013). The true cost of science publishing. *Nature,* **495,** 426-9.

11. Pincock, S. (2013). Open to possibilities. *Nature,* 28 March, **495**, 539-41.

12. Priem, J. (2013). Beyond the paper. *Nature,* **495**, 437-40.

13. Satyanarayana K. (2000). JAMA, NEJM and beyond-Journal editing in the new millennium. *Curent Science,* **78,** 1-3.

14. Satyanarayana K. (2004). Open access publication in biomedical research: Implications for developing countries *Indian Journal of Medical Research,* **120**(8), 67-69.

15. Satyanarayana K. (2010). Biomedical journals in India: Some critical concerns. *Indian Journal of Medical Research,* **132**(8), 119-22.

16. Satyanarayana K. (2011). Dual-use research of concern: Publish and perish? *Indian Journal of Medical Research,* **133**, 1-4.

17. Satyanarayana, K. (2013). Journal publishing: the changing landscape. *Indian Journal of Medical Research,* **138**(7), 4-7.

18. SQW Limited (2003). Economic analysis of scientific research publishing: A report commissioned by the Wellcome Trust [Internet]. [London]: The Wellcome Trust. *http://www.wellcome.ac.uk/en/ images/SciResPublishing2_744 5.pdf*

19. The Royal Society Science Policy Centre (2012). Science as an open enterprise. The Royal Society Science Policy Centre. London).

20. Zerhouni, E.A. (2004). Access to biomedical research information, the NIH-NLM report to Congress. *http://www.arl.org/sparc/taxpayer/NIH_access_report.pdf*

SCIPR-2014: Paper presented in the National Conference, pp. 13-20

Scholarly Publications in Science and Technology: A Bibliometric Study on Odisha

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ABSTRACT

The study attempts to analyze the articles published from Odisha during 2001 to 2010. A bibliometric approach has been carried out to analyze the data. The analysis takes different angles of view based on the subject areas, authors productiveness, target publications (journals, conference proceedings, trade publications and book series) where articles are published, number of publications, language of publication, and name of the institutions with their publications.

1. INTRODUCTION

Creativity always needs to be developed and nurtured. Scholars and researchers claim to work out some sorts of broad generalized theory about reliable issues. Researchers do the experiments or analyze the subject of their interest minutely for creating new things, for developing new ideas. The research work can be done by an individual, a team or by any organization for the benefit of the Nation as well as for the benefit of mankind. Invention in science and technology has greatly influenced the course of human civilization. Scholarly publications play an important role in this innovation. They hold the key to the country's future economic growth and social development. Most research in humanities, natural and social science topics have no direct application in daily life. Generally researchers themselves value the *pure research* more than the *applied research.* Scholarly interest devoid of practical applications creates a vicious circle. Any research should give honest and serious thought to the utility of findings of proposed research. Education is the power where future leaders are cultivated, and it helps scholars throughout the world transcending the boundaries of national origin, race or religion. Different publications in refereed scientific journals constitute the most important indicator of research performance. Careful analysis of scientific output in the form of publications can provide deep insights for making subject-wise, author-wise and institution-wise comparison of research performance in Odisha.

Scholarly publications are mostly useful in research works and it is a sensitive indicator or tool for new emerging ideas in the subject. The value of scientific research will be more fruitful when the results are shared by others.

1.1 Objectives

The present study investigates scholarly publications and analysis of research papers published from Odisha during 2001 to 2010. This study would throw light on the strengths and weaknesses of research efforts in Odisha besides helping in identification of research performance, its impact and productivity on research of institutions and individuals. The main objectives of the study are to find out the

- The most productive authors and the most productive institutions
- The most preferred journals and the major subjects of research
- Top papers and citations received with year-wise trends
- Language in which the papers are published
- Document type
- Major micro subjects of research
- Collaborative institutions and countries
- Individual institutions analysis

2. METHODOLOGY AND ANALYSIS

In this study an attempt has been made to analyze the 8,525 papers published from Odisha during 1996 to 2009. For this purpose Web of Science and Scopus databases have been used. The analysis of data in different tables shows a research trend of Odisha from 2001 to 2010 focusing on different areas of interest of researchers, author-wise as well as institution-wise growth rate, etc. The analysis of papers has been shown in Tables 1 to 9.

Table 1 indicates the growth of publications during 2001-2010 in Odisha in science and technology. After analysis it is seen that 38.5 % papers have been published from the total publications in the year 2009 & 2010. It is observed that there is an increasing trend in research publications from Odisha.

Table 1 Year-wise distribution of papers

Sl. No.	Year	Papers Published
1	2001	217
2	2002	214
3	2003	252
4	2004	276
5	2005	270
6	2006	324
7	2007	382
8	2008	486
9	2009	709
10	2010	809

Table 2 Collaboration with other countries

Sl.No.	Country	Publications
1	United States	149
2	United Kingdom	64
3	Japan	46
4	Germany	40
5	Canada	38
6	South Korea	26
7	Australia	24
8	South Africa	16
9	France	15

Table 2 shows collaboration with United States is more among all; collaboration with United Kingdom, Japan, Germany, and Canada is average. Some papers are also published in the journals of other countries.

Table 3 Source journal title

Sl. No.	Source title	No. of papers published
1	*Indian Journal of Agricultural Sciences*	94
2	*Indian Journal of Physics*	63
3	*Indian Veterinary Journal*	61
4	*Zoos Print Journal*	51
5	*Indian Journal of Animal Sciences*	39
6	*Indian Journal of Agronomy*	37
7	*Journal of the Indian Chemical Society*	33
8	*Pollution Research*	30
9	*Journal of Colloid and Interface Science*	29

10	*IPPTA Quarterly Journal of Indian Pulp and Paper Technical Association*	28
11	*Journal of Molecular Catalysis A Chemical*	28
12	*Physical B Condensed Matter*	22
13	*Astrophysics and Space Science*	22
14	*Modeling Measurement and Control B*	21
15	*Journal of Association of Physicians of India*	21
16	*International Journal of Pharmtech Research*	20
17	*Indian Journal of Dermatology Venereology and Leprology*	20
18	*Hydrometallurgy*	20

Table 3 shows the highest number of publications are published in *Indian Journal of Agricultural Sciences* (94) followed by *Indian Journal of Physics* and *Indian Veterinary Journal* with 63 and 61 articles respectively. Another 18 titles published between 15 and 19 articles, and 13 more titles publishing between 10 and 12 articles.

Table 4 Subject-wise distribution of papers

Rank	Subject Description	Papers Published
1	Agricultural and biological sciences	844
2	Engineering	638
3	Medicine	539
4	Physics and astronomy	535
5	Materials science	459
6	Environmental science	403
7	Chemistry	373
8	Biochemistry, genetics and molecular biology	372
9	Computer science	331
10	Pharmacology, toxicology and pharmaceutics	310
11	Chemical engineering	308
12	Earth and planetary sciences	265
13	Mathematics	219
14	Immunology and microbiology	196
15	Veterinary	133
16	Energy	123
17	Social sciences	112
18	Business, management and accounting	56
19	Economics, econometrics and finance	25
20	Neuroscience	22
21	Arts and humanities	22

As Odisha is an agricultural state and most of its inhabitants depend upon agriculture, more publications (844 of 3939 papers in 10 years) are on the topic Agricultural and biological sciences (Table 4). Scholars are also interested in the fields like engineering,

medicine, physics and astronomy, materials science, environmental science, chemistry, biochemistry, genetics and molecular biology for performing their research works.

Table 5 Author-wise distribution of papers

Sl. No.	Name of author	No. of publications
1	Parida, K.M.	77
2	Rout, G.R.	44
3	Nath, I.	40
4	Anand, S.	40
5	Bose, V.S.C.	35
6	Panda, G.	35
7	Das, A.B.	30
8	Panda, S.K.	29
9	Das, R.P.	29
10	Sahoo, S.K.	26
11	Sahoo, N.	25
12	Roy, G.K.	24
13	Rout, G.C.	24
14	Das, S.C.	23
15	Mishra, R.K.	23
16	Das, P.	23
17	Panigrahi, S.	22
18	Mishra, N.C.	22
19	Mohapatra, M.	22
20	Sharma, S.K.	21
21	Das, S.	21
22	Das, B.K.	21
23	Khare, A.	21
24	Dash, P.K.	21
25	Meher, P.K.	21
26	Sukla, L.B.	20
27	Pati, A.K.	20
28	Dash, A.P.	20

Table 5 lists prolific authors who have produced 20 or more articles during the period. The table shows that 27 authors published between 10 and 19, and another 27 published 9 papers each. K.M. Parida with 77 papers is the most prolific author during the period followed by G.R.Rout with 44 articles. Author I. Nath and S. Anand also published 40 articles each.

Table 6 Language-wise publication

Sl.No.	Language	Publications
1	English	3935
2	Portuguese	2
3	German	1
4	Russian	1

Table 7 Source type

Sl. No.	Type of Source	Publications
1	Journals	3539
2	Conference proceedings	303
3	Trade publications	53
4	Book	44

The main source for scholarly publication is Indian journals. Some are in the form of conference proceedings and trade publications. Only a few articles (44) are published in books.

Table 8 Institution-wise publications

Rank	Institution	No. of publications
1	National Institute of Technology, Rourkela	457
2	Institute of Minerals and Materials Technology India, BBSR	376
3	Orissa University of Agriculture and Technology, BBSR	268
4	Utkal University, BBSR	254
5	Berhampur University India, Berhampur	210
6	Institute of Physics Bhubaneswar	177
7	Sambalpur University, Jyotivihar, Burla	168
8	Indian Institute of Technology, Kharagpur	134
9	Central Institute of Freshwater Aquaculture India, BBSR	130
10	North Orissa University, Baripada	108
11	Regional Plant Resource Centre India, BBSR	107
12	Central Rice Research Institute India, Cuttack	90
13	Jadavpur University	87
14	M.K.C.G. Medical College Berhampur	82
15	Water Technology Centre for Eastern Region, Orissa	73
16	Regional Medical Research Centre, Bhubaneswar	72
17	S.C.B. Medical College & Hospital Orissa	65
18	Orissa Veterinary College	62
19	Institute of Life Sciences India, BBSR	56

Table 8 gives an overview of institution-wise publications. National Institute of Technology, Rourkela has topped the list with maximum number of papers (457) followed by Institute of Minerals and Materials Technology India, Bhubaneswar (376) during 2001 to 2010. Odisha University of Agriculture and Technology, Bhubaneswar, Utkal University, Berhampur University, Institute of Physics Bhubaneswar, Sambalpur University, Jyotivihar, Burla have also good number of publications. Another 27 institutions published between 21 and 46 papers.

Table 9 Document type

Sl. No.	Document type	Publication
1	Articles	3274
2	Conference papers	433
3	Reviews	123
4	Letters	64
5	Notes	14
6	Editorials	11
8	Short surveys	7

Table 9 shows that maximum number of papers are published in the form of articles in different journals followed by conference papers, and reviews..

3. FINDINGS AND CONCLUSION

The major findings of the study are as follows:

- 38.5% papers have been published from the total number of publications in the year 2009 and 2010. It means there is an increasing trend in research publications from Odisha
- Collaboration with United States is more among other countries
- *Indian Journal of Agricultural Sciences* published the highest number papers followed by *Indian Journal of Physics* and *Indian Veterinary Journal*.
- 21.42% publications are on the topic Agricultural and Biological Science in 10 years.
- Dr. K.M. Parida topped the list of prolific authors with 77 papers during the period.
- Indian journals are the main source for scholarly publication.

- During 2001- 2010, National Institute of Technology Rourkela has published maximum number of papers (457) followed by Institute of Minerals and Materials Technology India, Bhubaneswar (376).
- Research articles published in different journals are maximum in number..

The present study will be an important contribution to the literature helping to identify gaps in existing research areas. It provides a systematic comparison of research works published during 2001-2010. The twenty-first century is characterized by a significant impact of technology on education, industry, commerce, lifestyle, entertainment and on society. The exponential growth in knowledge industry, globalization and the international market economy enhances the effectiveness of learning with emphasis on continuous professional development. Collecting, preserving and disseminating scholarly content for the growth of scientific literature is a very important task. Scholarly publications develop skills and innovative thinking for future generation.

BIBLIOGRAPHY

1. http://www.researchbenchmarking.org
2. http://www.questia.com
3. http://www.inflibnet.ac.in
4. http://www.ukm.my
5. http://www.teeal.org
6. http://fppti.or.id
7. http://www.wanfangdata.com.cn
8. http://www.gujaratadmission.com
9. *Kostoff, R.N. (2011). Assessment of India's research literature. Technological Forecasting & Social Change*, 11.
10. Kostoff, R.N. (2011). Comparisons of the structure and infrastructure of Chinese and Indian Science and Technology. *Technological Forecasting & Social Change,* 11.
11. Wade, N. (1975). Daniel Bell: Science as the image of the future society. *Science,* 04 April.

Scholarly Communication & Intellectual Property Rights

SCIPR-2014: Paper presented in the National Conference, pp. 21-26

Citation Analysis of Marathi Literature Doctoral Theses submitted to R.T.M. Nagpur University during 1984-2008

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ABSTRACT

A citation analysis of Ph.D. theses has been carried out for determining the use of information sources by the Marathi literature scholars of the R.T.M. Nagpur University. The data was collected from the bibliographical entries listed at the end of the theses. In all24092 citations are appended to the 205 Ph.D. theses of Marathi literature submitted during 1984-2008.Citation analysis has been carried out to find the form-wise distribution, chronological distribution, authorship pattern, ranked list of cited journals and language-wise distribution.

1. INTRODUCTION

Citation analysis is a technique of bibliometrics used for research which uses various methods to establish relationships between authors and their works (Ane's Encyclopedic Dictionary, 2006).It is an important research tool for understanding the subject where the structure and direction of the subject is analyzed. It measures the utility of documents and relationship between the authors and their documents.

Citation analysis is an indispensible tool for librarian and information scientists to represent the relationship which exists between the cited and citing documents. The technique of citation analysis involves the process of collection, counting and analysis given in various types of literature. This is a direct method to analyze the library resources to determine the actual use of different types of documents. The analyzed information can provide useful idea for acquisition of important material, selection of documents etc. It also helps the information system designers, to plan their products and services.

2. OBJECTIVES OF THIS STUDY

The main objectives of the study include to find out thechronological distribution and the authorship pattern of cited documents, raking of journals and language-wise distribution of cited documents.

2.1 Scope and Limitation

The present study is based on 24092 citations appended at the end of 205 Ph.D. theses in Marathi literature, submitted to R.T.M. Nagpur University, Nagpur. The span of 25 years (i.e., from 1984-2008) was taken into consideration.

2.3 Methodology

The data for the present study was collected from the bibliographical entries listed at the end of the 205 Ph.D. theses of Marathi literature submitted from the year 1984 to 200; in all 24092 citations are appended. The analysis was done by using various parameters.

3. RESULTS AND DISCUSSION

3.1 Form-Wise Distribution

Table 1 shows that out of 24092 citations, 19874 (82.5%) citations were from books. So it can be said that most of the authors or researchers depend up on books on literature for their study followed by journals (2565, 10.6%), newspaper(690, 2.86%), reference books (411, 1.71%), unpublished documents (170, 0.71%), and other forms(382, 1.71%).

Table 1

Sl. No.	Type of document	Citation	%	Cumu. %
1	Books	19874	82.5	82.5
2	Journals	2565	10.6	93.1
3	Newspaper	690	2.86	96
4	Reference books	411	1.71	97.7
5	Others	382	1.59	99.3
6	Unpublished sources	170	0.71	100
	Total	24092	100	

3.2 Chronological Distribution

The date of citations to the 205 PhD theses range from pre-1900 to 2005. This period is divided in into groups with 10 year as a block. From Table 2 it is observed that the highest number of citations (i.e., 4366, 22%) are during 1971-1980 and the lowest number of citations(83, 0.42%)is during 1901-1910 period. While there are 261 citations from pre1900, no year was mentioned for 1488 (7.49%) citations.

Table 2

Sl No.	Year	Citations	%	Cumu.%
1	up to 1900	261	1.31	1.31
2	1901-10	83	0.42	1.73
3	1911-20	108	0.54	2.27
4	1921-30	327	1.65	3.92
5	1931-40	663	3.34	7.25
6	1941-50	928	4.67	11.9
7	1951-60	2015	10.1	22.1
8	1961-70	3287	16.5	38.6
9	1971-80	4366	22	60.6
10	1981-90	4003	20.1	80.7
11	1991-00	1898	9.55	90.3
12	>2001	447	2.25	92.5
13	Year not mentioned	1488	7.49	100
	Total	19874		

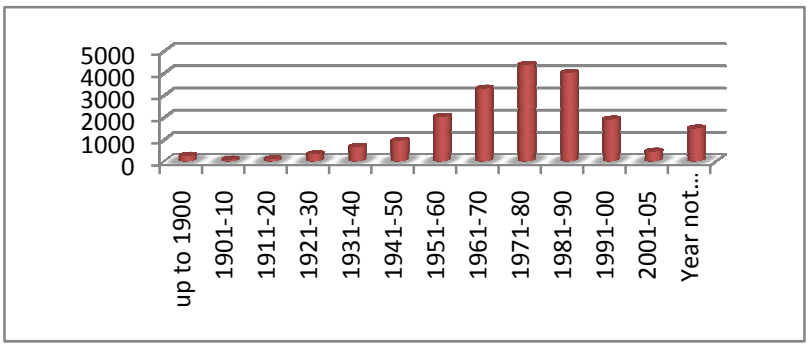

Figure 1: Chronological distribution

3.3 Authorship Pattern

Table 3 indicates that out of total number of 18229 citations, 88% (16066) are by single author, followed by 1123 (6.2%) with two authors, and 445 citations (3.3%) by three authors; there are 595 citations without authors.

Table 3

Sr.No	No. of Authors	Citations	%	Cumu.%
1	Single author	16066	88	88
2	Two author	1123	6.2	94
3	Three author	445	2.4	97
4	Not available	595	3.3	100
	Total	18229	100	

3.4 Ranking of Journals

Journal articlesare highly cited documents; journals are most important for accessing current information for library. Ranking of journals is essential for the librarian as well as researchers.The rank lists of cited journals are taken from 2565 citations to various journals; these were grouped according to their frequency of occurrence in the total number of citations; only first 20 ranked journals have been given in Table 4.

Table 4

SlNo.	Rank	Journal title	Citations	%	Cumu.%
1	1	*Satyakatha*	206	8.0312	8.0312
2	2	*Yugvani*	154	6.0039	14.035
3	3	*Maharashtra Sahitya Patrika*	120	4.6784	18.713
4	4	*Lalit*	119	4.6394	23.353
5	5	*Janta*	184	7.1735	30.526
6	6	*Pratishthan*	76	2.963	33.489
7	7	*Navbharat*	64	2.4951	35.984
8	7	*VirshaivSanjivani*	64	2.4951	38.48
9	8	*Alochana*	53	2.0663	40.546
10	9	*Asmitadarsh*	52	2.0273	42.573
11	10	*StreeMasik*	42	1.6374	44.211
12	11	*Manohar*	38	1.4815	45.692
13	12	*Sahandri*	36	1.4035	47.096
14	13	*Vasant*	34	1.3255	48.421
15	14	*Prabuddha Bharat*	58	2.2612	50.682
16	15	*Anushtubh*	29	1.1306	51.813
17	15	*SahityaPatrika*	29	1.1306	52.943
18	16	*Pratibha*	28	1.0916	54.035

19	16	*Zep*	28	1.0916	55.127
20	17	*Yashwant*	25	0.9747	56.101
21	18	*Hans*	24	0.9357	57.037
22	19	*Vihangam*	23	0.8967	57.934
23	20	*Prasad*	22	0.8577	58.791
24	20	*VividhGyanVistar*	22	0.8577	59.649

3.5 Language-Wise Distribution of Cited Books

The total number of citations for books (19874) were distributed among 6 different languages as shown in Table 5. Largest number of the citations 18399 (92.57%) are fordocuments in Marathi language, 637 (3.20%) for Hindi languagedocuments, 654 (3.29%) for English languagedocuments, 90 (0.459%) citations for Gujarati languagedocuments, and remaining 15(0.07%) citations are for other languages.

Table 5

Sr. No	Language	Citation	%	Cumu.%
1	Marathi	18399	92.578	92.578
2	Hindi	637	3.2052	95.783
3	English	654	3.2907	99.074
4	Sanskrit	79	0.3975	99.472
5	Gujarati	90	0.4529	99.925
6	Others	15	0.0755	100
	Total	**19874**	**100**	

4. CONCLUSIONS

The study of citation analysis of 205 Ph.D. theses on Marathi Literature shows that most cited documents are books (82.5%) and remaining (17.5%) citations were to journals, newspapers, reference books, and others. So it can be concluded that, researchers depend more on books in the field of literature for their investigations. The chronological distribution of citations shows that maximum number of citations is covered during the period of 1970-1980. The authorship pattern of citations shows that the single authored citations are more in number than others.

BIBLIOGRAPHY

1. Kalbande, D.T. and Sonwane, S.S. (2012). Citation analysis of Ph.D. theses on economics submitted to Dr. BabasahebAmbedkarMarathwada University. *Electronic International Interdisciplinary Research Journal.***1**(3).17-36
2. Bauer, K. and Bakkalbasi, N. (2005). An examination of citation counts in a new scholarly communication environment. *D-Lib Magazine,***11**(9).
3. Berhanuddin, M. (1992). Indian contribution to American Studie : An investigation into the growth of literature using the bibliometric citation analysis. (Unpublished thesis). Jiwaji University, Gwalior.
4. Chikate, R.V. (2008). Citation analysis of theses in library and information science submitted to University of Pune: A pilot study (Unpublished thesis). University of Pune, Pune.
5. Gorman, G. E. (2005). How do we count our chickens? Or do citation counts count?.*Online Information Review,***29**(6), 581-584.
6. Kannappanavar, B. U. (1991). Authorship trend and solo research in rural transformation: A bibliometric study. *ILA Bulletin,* **27**(1), 38-41.
7. Mishra, R. (1997). Citation analysis of doctoral dissertations in library and information science accepted by the Universities of Orissa and Manipur till 1993: A comparative study (Unpublished Thesis).Sambalpur University, Sambalpur.
8. Paul, M. and Roy, R. (1983). Developing horizons in library and information sciencePrintwell Publication, CT: Jaipur, 226 p.
9. Sangam, S.L. (1986). Citation analysis of doctoral dissertation in social sciences accepted by the Karnataka University, Dharwad during 1964 to 1982 (Unpublished Thesis). Gulbarga University, Gulbarga.
10. Schneider, J.M. (2004). Introduction to bibliometrics for construction and maintenance of thesauri. *Journal of Documentation.***60**(5), 524-549.
11. Sengupta, I. N. (1991). Four measuring techniques in library and information science. *Indian Journal of* 139 *Information and Library Society.***4**(3-4), 197-227.
12. Sharif, M. A. (2004). How economists cite literature: Citation analysis of two core Pakistani economic journals: *Collection Building.***23**(4), 172-176.
13. Singh, G. (2007). A bibliometric study of literature on digital libraries. *The Electronic Library.***25**(3), 342-348.
14. Tang, R. (2008). Author-rated importance of cited references in biology and psychology publication. *Journal of Documentation,* **64**(2), 246-272.
15. Thoidingjam, P. (1997). Citation analysis of Ph.D. theses in social science accepted by Gauhati University during 1970-1980 (Unpublished Thesis). Manipur University, Imphal.
16. Turk, N. (2008). Citation impact of open access journals. *New Library World.***109**(1/2), 65-74.
17. Warmell, I. (1998). Informetrics: An emerging subdiscipline in information science. *Asian Libraries.***7**(10), 257-268.

SCIPR-2014: Paper presented in the National Conference, pp. 27-33

Information seeking behaviour of Undergraduate Students in St. Peter's Engineering College Library, Hyderabad: A Study

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ABSTRACT

Information is vital to the development of human society. Information has enabled humans to perform routine activities in an efficient way. In the library information seeking behaviour refers to the way user acts in searching for and utilizing information.Aquestionnaire-basedsurvey was conducted at St. Peter's Engineering College Library to find out the information seeking behaviour of undergraduate students with the objectives ofdetermining the purpose, motive and frequency of seeking information and their methods used, kinds of information sources and channels used in search for information. What kind of services offered by the library and level of satisfaction with facilities in the library are also factors to judge the user information seeking behaviour. The survey revealed that41.7 percent of library users visit the library every day of which 37.5percent of users visit the library with an aim to borrow books and 45.8percentusers for searching information by subject. More than 50percentof respondents found the library services for reference services with 37.5percent of respondents indicating that their source of information is textbooks. Majority of respondents found that the library staff are more helpful.

Keywords: Information Seeking Behaviour, Undergraduate Students, Engineering College Library Survey.

1. INTRODUCTION

Information is vital to the development of human society.Information seeking behaviour is a complex activity, requiring access to diverse information resources to deal with work-related, personal, and social problems. Information-seeking behaviour refers to strategies for locating information, and has three elements: people, information, and systems. The study of individual information-seeking behaviour requires understanding of the psychological state of the user that may lead to insight into their expectations make it possible to predict information-seeking activity (Ocholla, 1999).

The concept of life is vague without information. Information has enabled humans to perform their routine activities in an efficient way. For decision-making, we need the support of information (Kumar, 2004). Modern society depends on information for all its activities. Every person has the need for information. Without valid and up-to-date

information, it is impossible to do progress in any field of life (Bajpai, 1999). Understanding of information needs and information-seeking behaviour of various professional groups is essential as it helps in the planning, implementation and operation of information system and services in the given work settings (Devadason& Lingam, 1997).

2. REVIEW OF LITERATURE

Hinson *et. al* (2007) pointed out that, in a survey, 78 percent of the lawyers were found to agree that Internet improves their productivity;88 per cent of respondents indicated that the Internet is useful as a communication tool, whilst 76 percent of the respondents considered it to be very important for getting information. Otike (1997) in his study investigated the legal information needs of the general public. He concluded that the provision of legal information to the public in the Third World still remains largely un researched. Until extensive empirical research is conducted in this vast area, information professionals will continue to rely heavily on simple hypotheses. Steinerova and Susol (2007) conducted a study on user information behaviour from a gender perspective in Slovakia. Differences in orientation to information, collaboration style, and use of information were discovered, with the conclusion that gender as a variable can be productive for understanding information processing. Asemi (2005) surveyed the search habits of Internet users at Isfahan University of Medical Sciences (MUI) in Iran, and found that training would help them obtain useful and relevant information. Prasad (1998) noted that non-traditional literature such as unpublished conference and symposia papers, research proposals, policy guidelines, and project reports are also popular among scholars. Sethi (1990) studied the information-seeking behaviour of social science faculty in Indian universities. Respondents preferred journals, books, government documents and reference sources for meeting their information needs. Guoyuing and Winn(2009) examined the information seeking behaviourof Chinese graduate students at the University of Windsor.Findings on current Chinese students perceptions, expectations, and use of library services are highlighted including implications for academiclibraries to meet international students information needs.Brown and Simpson(2012) examined the implementation of each of the initiatives at the University of Reading, using the institution ad as case study to explore the implications on students' information-seeking behaviour.It is found that custom textbooks were used by the University's history department to support one of its first-year undergraduate modules,

with the aim of providing a source of essential reading.They conclude that librarians have an important role to play in helping students to understand the complexity of information searching.While custom textbooks and discovery services are in some ways beneficial to students, they still require guidance from expert library staff to help them navigate theses resources and independent learners.

3. OBJECTIVES

The main objectives of the current study are:

- To determine the purpose, motive and frequency of seeking information,
- To know the level of importance given to keep themselves up to date and methods used to serve their purpose by undergraduate students,
- To know kinds of information sources and channels used in search for information,
- To know the utilization of different services,
- To know the whether the undergraduate students get satisfied with the services offered by the library staff and the way of obtaining relevant information,
- To know the level of satisfaction with facilities in the library,
- To determine the students' opinion, suggestions while they are seeking information at St.Peter's Engineering College Library,
- To find the most preferred source of information, and
- To discover the level of satisfaction students obtain when seeking for information.

Scope: The scope of the study is restricted to the information seeking behaviour and factors which hinder information seeking behaviour of post graduate students in St.Peter's Engineering College Library.

Methodology: The study adopts the survey method based on a questionnaire. A well structured questionnaire was developed for the purpose of data collection on information seeking behaviour of the undergraduate students in St.Peter's Engineering College Library.

4. ANALYSIS AND INTERPRETATION OF DATA

Altogether 150 questionnaire were distributed among the undergraduate students of St. Peter's Engineering College Library, Hyderabad.The responses received are 120, representing 80 percent of the total questionnaire distributed.

Table 1 Gender-wise distribution of Respondents

Sl. No.	Gender	Respondents	%
1	Male	85	70.8
2	Female	35	29.2
Total		**120**	**100.00**

Table 1 shows that 85 are men and 35 are women representing 70.8% and 29.2%, respectively.

Table 2 Frequency of Visit to the Library

Sl. No.	Frequency	Respondents	%
1	Daily	50	41.7
2	Twice a Week	30	25
3	Weekly	25	20.8
4	Monthly	15	12.5
Total		**120**	**100**

Table 2 shows that a majority of the users (50, 41.7%) are visiting the library daily,30(25%) of users visiting the library twice in a week,25(20.8%)are visiting the library weekly, and the remaining 15(12.5%)visit the library monthly.

Table 3 Purpose of visit

Sl. No.	Purpose of visit	Respondents	%
1	To borrow books	45	37.5
2	Find latest arrivals in library	35	29.2
3	To read newspapers and magazines	25	20.8
4	Others	15	12.5
	Total	**120**	**100**

Table 3 shows that the purpose ofmajority of the users(45,37.5%)for visiting the library is to borrow books, 35(29.2%) users to find latest arrivals in library, 25(20.8%)users to read newspapers and magazines and the remaining 15(12.5%) of users for other purposes.

Table 4 shows that a majorityof the users (55, 45.8%) are searching by subject, 35(29.2%) by author, 20(16.7%) by title, and the remaining 10(08.3%) search by any others.

Table 4 Strategy for searching

Sl. No.	Searching strategy	Respondents	%
1	By subject	55	45.8
2	By author	35	29.2
3	By title	20	16.7
4	Any others	10	08.3
Total		**120**	**100.00**

Table 5 Use of library services

Sl. No.	Library service	No. of respondents			
		Yes	**%**	**No**	**%**
1	Reference services	65	54.2	12	10.0
2	CAS	38	31.7	15	12.5
3	SDI	10	08.3	05	04.2
4	Indexing services	20	16.7	17	31.48
5	Abstracting services	10	08.3	05	04.2
6	Bibliography	25	20.8	14	11.67
7	Newspapers and Magazines	60	50.0	03	02.5
8	Inter library loan	35	29.2	10	08.3
9	Book bank facility	15	12.5	10	08.3
10	Circulation service	45	37.5	05	04.2

Note: Total percentage will not add to hundred because responses are more than one.More than fifty percent of respondents found the library services for reference services.

Table 6 Opinion regarding librarian and library staff

Sl. No.	Opinion	Respondents	%
1.	Helpful	65	54.2
2.	Most helpful	35	29.2
3.	Less helpful	05	04.2
4.	Least helpful	10	08.2
5.	Notat allhelpful	05	04.2
Total		**120**	**100**

Table 7 Facilities in library

Sl No	Facilities in library	No. of Respondents			
		Yes	%	No	%
1.	Opening hours	55	45.8	21	17.5
2	Library environment	47	39.2	10	08.3
3	Location	47	39.2	07	05.8
4.	Collection of books & journals	41	34.2	05	04.2
5.	Issue &return system	40	33.3	05	04.2
6.	Arrangement of materials	44	36.7	03	02.5

Note: Total percentage will not be hundred because responses are more than one.Majority of the respondents nearly fifty percent are regarding facilities in library opening hours.

Table 8 Satisfaction with sources of information

Sl. No.	Information sources	Respondents	%
1.	Very satisfied	85	70.8
2.	Partially satisfied	25	20.8
3.	Not satisfied	10	08.4
	Total	**120**	**100**

Table 8 shows that majority of users (85, 70.8%) are very satisfied with information sources available in library, 25(20.8%) are partially satisfied and the remaining 10(08.4%) are not satisfied.

Table 9 Usage of information source

Sl. No.	Use of library resource	Respondents	%
1.	Textbooks	45	37.5
2.	Internet	22	18.3
3.	Newspapers	32	26.7
4	Lecture notes	13	10.8
5	Dictionary/encyclopedia	10	08.3
6	Journals	11	9.2
	Total	**120**	**100**

Table 9 shows that out majority of the users (45, 37.5%) visit library for using textbooks, followed by 32(26.7%) for newspapers, 22(18.3%) for Internet, 13(10.8%) for lecture notes, 11 (9.2%) for journals and the remaining 10(08.3%) for dictionaries and encyclopediasfor obtaining information by the students.

5. CONCLUSION

The survey found out that a majority of the users visit the library daily with the main purpose of borrowing books, especially textbooks; they mostly search by subject with more than fifty percent of respondents finding reference services most useful and the library staff helpful. The collection of St.Peter's Engineering college library has been developed on the basis of the needs and requirements of users.

REFERENCES

1. Asemi, A. (2005). Information searching habits of Internet users: A case study of the Medical Sciences University of Isfahan, Iran. *Webology***2**(1) Available at http://www.webology.ir/ 2007/v2n1/a10.html

2. Bajpai, S. K. (1999). *Modern information retrieval.* New Delhi: EssEss Publications.

3. Brown, D., & Simpson, E.(2012). Packaged information: How are new means of delivering information affecting students' information seeking behaviour?.*New Review of Academic Librarianship*, **18**(1), 43-56.

4. Devadasson, F.J. &Lingman, P.P. (1997). A methodology for the identification of information needs of users. *IFLA Journal*, **23**(1), 41-51.

5. Guoying& Winn.D (2009).Chinese graduate students and the Canadian academic library: A user study at the University of Windsor.*Journal of Academic Librarianship*, **35**(6), 565-573.

6. Hinson, R, Ofori, D. &Atuguba, R. (2007). The internet and lawyers in Ghana. *Library Review*,**56**(4), 311-322.

7. Kumar, P.S.G. (2004). Information and communication. New Dehli: B.R. Publishing Corporation.

8. Ocholla, D.N. (1999). Insight into information seeking and communicating behaviour of academics. *International Information and Library Review* **31**(3), 119-143.

9. Otike, J. (1997). Legal information needs of the general public.*Library Review*, **46**(1), 28-33.

10. Prasad, H.N. (1998). Information-seeking behaviour of physical scientists and social scientists: A report. *Annals of Library Science and Documentation,* **45**(2), 41-48.

11. Sethi, A. (1990). *Information seeking behaviour of social scientists: An Indian conspectus*. New Delhi: Hindustan Publishing Corporation.

12. Steinerova, J., & Susol, J. (2007). Users' information behaviour: A gender perspective. *Information Research,* **12**(3) Available at http://informationR.net/ir/12-3/paper320.html.

SCIPR-2014: Paper presented in the National Conference, pp. 34-42

E-Learning and E-Publishing: A Study

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ABSTRACT

The paper attempts to discuss about the electronic publishing, electronic learning and radical changes in the publishing industry especially with electronic media, and Internet. In the age of information explosion, Information and Communication Technology (ICT) is progressively replacing the old methods of information collection, storage and retrieval. We live in an increasingly digital world. The technology has transformed the process of publishing and distribution of information. Electronic publishing has become a foundation for the new information society to get the right information to the right person at the right time. These changes in the publishing industry have a direct impact on the library systems. Hundreds of libraries change their sign from print to digit and they want to place their collection in the web.

Keywords: Electronic Publishing, Information and Communication Technology, Electronic Learning, E-journals, Virtual Learning, E-book.

1. E-LEARNING

The information technology has changed the way that information is stored and disseminated and has threatened the traditional approaches to the library and its services. Now paperless publishing or electronic publishing is gaining more prominence. In the changing scenario, libraries and librarians will have to play a crucial role in handling conventional and electronic resources. E-learning is basically boils down to learning that is facilitated and supported via Information and Communications Technology (ICT). The American Society for Training and Development (ASTD) defines e-learning as a broad set of applications and processes which include web-based learning, computer-based learning, virtual classrooms, and digital. Many terms have been used to define e-learning in the past. For example web-based training, computer-based training or web-based learning, and online learning are a few synonymous terms that have over the last few years been labeled as e-learning.

E-learning 2.0: It refers to new ways of thinking about e-learning. It is inspired by the emergence of Web 2.0. According to Craig (2007) new generation learners are influenced

by social networking. Experienced and empowered to create, publish, and redistribute contents, they find the structure of LCMS traditional and inflexible in contrast with the user centered approach of web 2.0 services.

2. VIRTUAL CLASSROOM

A virtual classroom provides:

- A place to meet: Students and teachers use their computers to go to a virtual meeting.
- Place instead of a classroom.
- Take attendance: A list of students is recorded.
- Lecture: Teachers can choose from a variety of synchronous technologies including
- Slide presentation, audio and video conferencing, application sharing, shared whiteboard.
- Interaction with students: Students can indicate when they want to speak by virtually raising their hand. Teachers can let students speak through audio and video conferencing. Teachers and students can use instant messaging and chat.
- Quizzes, breakout sessions: Teachers can present questions to students & work together in groups.

2.1 Audio and Video Conferencing

According to Joshi, Venkata Subrahmanyam and Anvekar, (2014) audio conferencing can be implemented in two ways:

- Computers are connected to the Internet; common names for this kind of implementation are IP Audio Conferencing or Voice-over-IP.
- Phone conferences: People dial the same number to participate in an audio conference.

Video conferencing can also be implemented in two ways:

- Computers are connected to the Internet. The computers need digital cameras.
- Special video conferencing devices that connect over the Internet or over phone lines.

Other modes of conferencing/communication channels include:

- Chat allows several people to communicate with each other and to type their comments.
- Shared whiteboard: It lets a group of people communicate by typing comments, drawing, highlighting and pointing.
- Application sharing demonstrates how to use software applications to remote learners with application sharing. A teacher can also let the learner take control of the application to practice performing tasks.
- Instant messaging is similar to chat. One person communicates to another through typing. The list will indicate if they are online, offline, available for chat or busy. These features make instant messaging an excellent tool for learning from peers.

3. LEARNING CONTENT MANAGEMENT SYSTEMS

According to Nagy (2005) a Learning Content Management System (LCMS) supports team-based development of self-paced courses. An LCMS typically provides:

- A library of media elements, templates.
- Development tools (check-in/check-out, version control).
- Project management tools (assignment, completion reports).
- Quality assurance tools (reviews, approvals, bug tracking).

3.1 Knowledge Management Systems

Knowledge Management Systems (KMS) provide comprehensive support to employees directly to do their job effectively. Many types of systems are referred to as KMS including document management, knowledge capture, information portals, and search tools.

4. ELECTRONIC PUBLISHING AND ACQUISITION

It is the process for production of typeset quality documents containing text, graphics, pictures, tables, equations etc. (Mishra and Saxena, 2008). It is used to define the production of any that is digitized form.

Electronic Publishing = Electronic Technology + Computer Technology + Communication Technology + Publishing

In the scientific publishing world, electronic publishing (also referred to as e-publishing or digital publishing) is common and a notion that peer-reviewed scientific journals are in the process of being replaced by e-publishing. E-publishing includes the digital publication of e-books, EPUBs, digital magazines. It is also becoming common to distribute books, magazines, and newspapers to consumers through tablet reading devices, a market that is growing by millions each year, generated by online vendors such as Apple's iTunes Bookstore, Amazon's Bookstore for Kindle, and books in the Google Play Bookstore.

The use of e-publishing for textbooks may become more prevalent with iBook s from Apple Inc. and Apple's negotiation with the three largest textbook suppliers in the U.S. E-publishing is increasingly popular in works of fiction as well as with scientific articles.

4.1 Electronic Publishing Process

According to Sharma (1999), e-publishing process follows a traditional publishing process but differs from traditional publishing in two ways: 1) it does not include using an offset printing press to print the final product and 2) it avoids the distribution of a physical product. Because the content is electronic, it may be distributed over the Internet and through electronic bookstores.

E-publishing process follows a traditional publishing process but differs from traditional publishing in two ways viz. (a) it does not include using an offset printing press to print the final product; and (b) it avoids the distribution of a physical product. Because the content is electronic, it may be distributed over the Internet and through electronic bookstores. The consumer may browse, read and print the published content on website. Applications of mobile, smart phones and tablets are common to distribute content electronically.

E-publishing substitute to print and it updates with sound technical and technological applications to meet large community of consumers. Wide variety of software, applications and formats are available today. Designing part is very much crucial role to attract to readers largely. However, new design software is becoming available for designers to publish content in this standard without needing to know programming, such as Adobe Systems' Digital Publishing Suite and Apple's iBook’s Author. The most common file format

is e-pub, used in many e-book formats, which is a free and open standard available in many publishing programs.

4.2 Academic Publishing

Academic repositories in various fields have played a prominent role in disseminating the current research for example arXiv.org (a preprint repository of physics). After submitting the article to a peer-reviewed journal for consideration, the authors may be allowed to deposit or archive preprint version or author version article online. However, scholarly journals still play an important role in quality control and establishing scientific credit. In many instances, the electronic materials uploaded to preprint repositories are still intended for eventual publication in a peer-reviewed journal. There is statistical evidence that e-publishing provides wider dissemination. A number of journals have, while retaining their peer review process, established electronic versions or even moved entirely into e-publication

4.3 Publishing

Indeed, the marketing of a major film often includes a novelization, a graphic novel or comic version, the soundtrack album, a game, model, toys and endless promotional publications. Technically, radio, television, cinemas, VCDs and DVDs, music systems, games, computer hardware and mobile telephony publish information to their audiences. The BBC has its own publishing division that does very well with long-running series such as Doctor Who. Some of the major publishers have entire divisions devoted to a single franchise; for example, Ballantine Del Rey Lucas books has the exclusive rights to *Star Wars* in the United States; Random House UK (Bertelsmann)/Century Lucas Books holds the same rights in the United Kingdom. These multimedia works are cross-marketed aggressively and sales frequent you to perform the average stand-alone published work, making them a focus of corporate interest.

5. TYPES OF E-PUBLISHING MODELS AND PUBLISHING ALTERNATIVES

There are several options for e-publishing including Print-on-Demand (POD) and e book format. Mishra and Saxena (2008) have identified various e-publishing models and alternatives below to meet the large community of users community.

5.1 E-Books

It is an electronic representation of print book. Publishing e-book is quite useful and easy access to the users. "It may not have contemporary value that a journal has but it certainly has an archival and reference value"

5.2 E-Periodicals

Today majority of scientific communication and publication disseminated through e-periodicals. Accessibility and usage of e-periodicals consists of e-journals, newsletters, magazines etc played major role in the area of digital publishing. Various publishing models attract diverse audience throughout the world.

5.3 E-Databases

Publishing sector is keen in producing e-databases. It provides a comprehensive list of resources available and accessible digitally irrespective space and time. Various procedures and standards are following for capturing, delivering and retrieving e-databases.

5.4 E-Publishing on CD-ROM

Organized collection of resources in electronic form made available in various forms starting from CD-ROM to online. Publishing sector are keen in producing CD-ROM on various formats not only for the purpose of standalone but also network-based accessibility.

5.5 Print-on-Demand

Publishers are conscious about quality and quantity of book publishing whether it is print or electronic. Publishing involves various costs to make out the publication electrically. Hence, based on demand the book is printed and published.

5.6 E-Ink

Electronic ink (e-ink) is advanced technology that influences the media and publishing sector. E-ink could be used to create a newspaper or book that updates itself. In addition, this content could be programmed to change at any time (Mishra and Saxena, 2008)..

5.7 Email Publishing

Email publishing, is one of the popular choice among users who can easily receive news items, articles, short newsletters etc. in their email box. It is designed with an aim to provide and delivery content-based email messages.

5.8 Web Publishing

Web publishing is not a novel practice any longer, but it continues to change and develop with the introduction of new programming languages. HTML is still the most widely used web programming language, but XML is also making headway. XML is valuable because it allows publishers to create content and data that is portable to other devices. Nearly every company in the world has some type of website, and most media companies provide a large amount of web-based content.

5.9 E-publishing and Copyright

Copyright laws are currently tailored to printed books. E-publishing brings up new questions in relation to copyright. E-publishing may be more collaborative, involving more than one author, and more accessible, since it is published online. This opens up more doors for plagiarism or theft. Some publishers are trying to change this. For example, HarperCollins limited the number of uses that one of its e-books can be lent in a public library. Others, such as Penguin, are attempting to incorporate the elements of the e-book into their publications instead.

6. CONCLUSION

In this paper we analyzed the various kinds of e-publishing to access the e-resources, and at the same time throw light on how to overcome the online process. Most of the studies on access to e-learning and e-publishing derived the conclusion that there are some learning concepts. In the field of e-learning and publishing digital sources, the practitioners should overcome the challenges. The signs in scientific development indicate that the digital and electronic resources are the future. With documents getting published electronically and the Internet resources growing at the rate of 20 per cent each month, the selection of documents is going to be a difficult job.

The 21st century librarian will basically become a resource sharing librarian, whose resources will have no boundaries, local, national or international. In this changing scenario, the librarian is going to be a highly skilled professional whose total commitment would be as navigators to global intellectual resources, facilitators, instructors, gatekeepers of knowledge, interpreters, evaluators, consultants, researchers, information managers, promoters. Librarians have improved their image by playing all the roles successfully. So, technology based instruction in the field of LIS education gives rise to playing a special role by the academic libraries.

REFERENCES

1. Craig, Emony (2007). Changing paradigms: Managed learning environments and Web 2.0. *Campus-Wide Information Systems,* **24**(3), 152-61.
2. Joshi, G.K., Venkata Subrahmanyam, C. V. and Anvekar, Sandhya (2014). The Need and Importance of On-Demand E-Learning For Customized Management Skills Enhancement *Quest Journals Journal of Research in Humanities and Social Science*, **2** (2), 33-41.
3. Sharma, Ratnesh Kumar (2012). E-publishing Knowledge Organization in Academic Libraries. *National Conference on Knowledge Organization in Academic Libraries* (KOAL-2012) New Delhi on 29 Sep, 2012. 229-234.
4. Mishra, Chhama and Saxena, Archana (2008). Impacts of ICT in LIS: Electronic Publishing. *6th International CALIBER-2008*, University of Allahabad, Allahabad, February 28-29 & March1, 2008 © INFLIBNET Centre, Ahmedabad. 190-195.

BIBLIOGRAPHY

1. Herther, N. (2011). The Sizzling E-book Marketplace. *Searcher*, **19**(3), 14-23.
2. Herther, N. (2011). From CD-ROMs to E-books. *Searcher*, **19**(5), 12-46. Retrieved from International Digital Publishing Forum, http://idpf.org/.
3. Saminather, N. (2011). Apple begins global sales of new iPad 2 tablet as competition intensifies". Bloomberg. Retrieved from http://www.bloomberg.com/news/2011-03-25/apple-begins-global-sales-of-new-ipad-2-tablet-as-competition-increases.html.
4. Think exciting: E-learning and the big E. Retrieved 7 December 2012.
5. Parks, Eric (n.d.). What's the e in e-learning? Askinternational.com. Retrieved 22 October 2013.

6. Tonkery, Dan (2010). The iPad and its Possible Impact on Publishers and Libraries. *Searcher*, **18**(8), 39-43.

7. *The Electronic Visual Arts Journal* (1995) Available from: http://www.uwo.ca/visarts/eva.html Retrieved 26 December 2002.

8. *NewJour* (1993) Electronic journals and newsletters. Available from: http://gort.ucsd.edu/newjour/ Retrieved 26 December 2002.

9. Alonso, F. *et al.* (2005). An instructional model for web-based e-learning education with a blended learning process approach-□. *British Journal of Educational Technology*; **36**(2), 217-235.

10. Mayer, R. E. (2003). Elements of a science of e-learning. *Journal of Educational Computing Research,* **29**(3), 297-313.

11. Abelson *et al.* (2005). Open networks and open society: the relationship between freedom, law, and technology.

12. Leonard Shatzkin (1982). *In* Cold Type: Overcoming the Book Crisis. Boston, Mass. Houghton-Mifflin. xiii, 297 p. ISBN 0-395-32160-3.

13. Uhomoibhi, James O. (2006). Implementing e-learning in Northern Ireland: Prospects and challenges. *Campus Wide Information Systems,* **23**(1), 4-14.

14. Jolliffe, Alan; Ritter, Jonathan and Stevens, David (2001). The online learning handbook: Developing and using web-based learning. Routeldge, London.

15. Tavangarian D., Leypold M., Nölting K., Röser M. (2004). Is e-learning the solution for individual learning? *Journal of e-learning*.

SCIPR-2014: Paper presented in the National Conference, pp. 43-51

Impact of Information Technology on Entrepreneurship

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ABSTRACT

The paper briefly presents the impact of Information Technology (IT)on entrepreneurship. IT is omnipresent and its effect can be felt everywhere from Silicon Valley to the most backward village. Internet is the most recognized application of IT that includes almost all types of communication and has revolutionized the world. IT has considerably affected the entrepreneurship and its levels of progress as well. The paper presents a short introduction of IT and entrepreneurship followed by benefits and drawbacks of IT on entrepreneurship. The paper concludes by highlighting some methods of using IT in overall enhancement of the entrepreneurship development.

1. INTRODUCTION

The technology aims at making things easy. It tries to reduce the manual effort required in accomplishing a task and hence saves the time also. Entrepreneurship means setting up of a business venture by a person alone or by group based on some idea or innovation. The technology and entrepreneurship are tightly related (Howard, 2007). Technology not only facilitates entrepreneurs in taking up technology-based firms but traditional business thoughts are also taken to new levels by giving them a new direction leading to new heights of success.

The technological tools of various kinds encompassing computers, terminal equipment, and networking devices can be jointly termed as IT. These technological instruments are used solo or in aggregation to get data or information, store, process, present and send it in variety of types. IT not only does the above activities at very high speeds but it provides accuracy as well. It has the power of processing the large volumes of data in one go. The first step in commencing any major project is information and knowledge which are foundation stones. to come up with successful ventures, the creative minds that can make a better utilization of available information can only prove to be successful entrepreneurs.

1.1 Entrepreneurship

The innovative thinkers who want to establish their own ventures, rather than serving an already existing corporation, using their skills or experiences, are known as entrepreneurs. The task of starting a new establishment by entrepreneurs is known as entrepreneurship. These entrepreneurs come up with new and different ideas or they enhance the already existing practices to set up their ventures. They have to raise the resources required, estimate efforts, and calculate risks to make their place in the market. The entrepreneurs have to take up a new direction of thought to benefit themselves and their environment too which results in financial satisfaction and self-contentment.

Successful entrepreneurs make smart use of technology and other resources to reach their destination of dream business venture in a short span of time. They have cognitive approach towards inclusion of every aspect in the step by step development of the venture. To move forward with a greater pace the inclusion of technology is mandatory and an entrepreneur needs to have clear vision of what are the technological needs that suffices the idea of the project. If the entrepreneur is not acquainted with technology, he/she should not shy away in taking help from technological experts to find out exact technological needs of the project. In addition to this the choice of technology made should not be too sophisticated that it becomes unusable for general interaction.

1.2 What makes IT Important

Information technology is showing its presence in each and every field of human knowledge leading to a huge impact over growth and development. It forces us to use our brains in new productive directions, affecting our living styles and work environment too. There is no running away from the technology in today's world because it is present everywhere from our kitchens to our office tables and since the information resources are growing exponentially we can't keep ourselves updated unless we have the know-how of computers and modern technology. IT has become mandatory owing to following reasons:

- The world is termed as a global village now since IT has brought together not only places with geographical distances and cultural differences but its heading towards the communication between the planets too.
- Few decades ago retrieval of some irrelevant information out of our interest or need would take us plenty of effort and perhaps money too; but now with IT applications

specifically Internet, the users can navigate through large amount of information resources and get required information in few nanoseconds. These information resources can be from library databases from any part of the world. This not only saves our time but presents information in more systematic arrangement.

- With video conferencing, and other IT applications and tools, face to face communication has been made possible between people separated by large distances and has thus enhanced the process of communication and in removal of barriers.
- Technology-based learning has proved to be revolutionary for both learner and instructor. The teacher can make use of IT tools to make lessons more interesting and lucid for the student; at the same time the students have enormous resources available to make their learning more like a fun filled activity
- In web-based academic programmes the students and teachers don't have to be time bound. The learner can get the study material both in text form or in audio visual form at any time as per his leisure and that too from his/her favourite teacher/instructor.
- Minimal computer or ICT skills are required for all careers from engineering and technology to medicine to fine arts since IT finds its application in all the fields now.

2 THE PROS AND CONS OF IT IN ENTREPRENEURSHIP

There is no such field in current times which doesn't have impact of IT on it growth. In contemporary times one can't afford to propagate his business venture without including technology because ignoring IT can doom the venture to closure/failure. Embracing state of the art technology means a promise for a bright success of the venture with new business ties and better customer satisfaction. IT has made selling products or services with added benefits and profits. Technology has assimilated those people in market space who otherwise would have been set aside from the commercial sphere if they had to beat the competition in typical traditional ways. Thus entrepreneurs have benefitted a lot by making use of technology

Earlier studies of Schumpeter (1911) clearly stated that entrepreneur acts as an innovator (quoted in Farooq, *et al.* 2011). Technology has raised the morale of the people

with creative minds. The modern technologies can be used to give new shape to ideas of the entrepreneurs and provide basis for the foundation of business ventures which can touch the sky. The entrepreneur need not think of his business idea by just considering the local customers, he can come up with a business idea which will be well received in international markets. And in order to make a place in international market one doesn't need to travel across the continents to sell his idea. The IT has provided the platform to sell and market products internationally by not moving even out of our rooms. Apart from this, technology based organizations, aimed at developing technology related tools like software are leading the contemporary business world. The leading business persons in the world are directly or indirectly investing in the firms which aim at booming new technologies since it provides huge profits.

2.1 Benefits of IT in Entrepreneurship

Information technology contributes to the entrepreneurship in numerous ways. It has made job access easier; the job seekers can get information regarding their relevant job openings with just one click. The Internet seems to be an invention meant for entrepreneurs; it has made them reach those markets which are literally unreachable and has helped them in conducting business directly. Employees and business owners can work anywhere now, by the virtue of technology, be it their office, from home, on the road and even from across the country.

The beneficial impact of technology can be felt in entrepreneurship at its all states of development, access of internet being the most effective trait. Tasks that used to take months can now be accomplished in much less time. Deals regarding business and contracts can be done in a few clicks. They can also switch across a range of business ventures, and operate them simultaneously with no added frustration. This is in some cases where the Internet millionaires come from. However, the main reason is doing much more efficient business IT.

Technology has made entrepreneurship a least risky mission. If an entrepreneur is well acquainted with technology then he has nothing to lose, he is well aware about a gap in the market and chooses perfect time to launch his product/service. Entrepreneurship cycle takes its final shape by going through following levels:

- Conceiving the business idea.

- Planning the business or establishing the business strategy.
- Setting up the business.
- Starting the venture.
- Growing the business by making new ties.

IT plays a vital role in the whole process of establishing a business venture. The role of IT in various levels of entrepreneurship development is discussed below:

(a) The prime level of entrepreneurship is to decide the goal of the entrepreneurship that is the product or service the entrepreneur has to launch. The idea of conceiving of business idea itself can be enhanced by IT. The entrepreneur can get new idea for a venture from the Internet or can compare the progress made the entrepreneurs with similar ideas. By going through various forums related to entrepreneurship one can choose a better business idea. Once entrepreneur has chosen a business idea, the future of the idea can be analysed using the IT tools. For example, if one has decided to start a restaurant in an area, using applications like Google maps it is possible to find an ideal place for setting up the business depending upon restaurants already present in the location.

(b) After project idea has been fixed it's time to get to the actual work of getting it off the ground and running. This level deals with the planning of the new business. It consists of developing a business model, financial model and an operating plan of the new business. The entrepreneur can make use of various IT based tools to design the appropriate business model taking into consideration various assets that are available without forgetting the limitations. The performance of the venture along with its financial implications can be well represented with this prototype called the business model. The business strategy can be very well explained with the help of the business model which can be built with the help of computer tools to depict the future business venture more accurately with near to actual figures.

(c) The process of designing a business model can be facilitated by IT tools. Many software are available to help entrepreneurs to design a business model and financial model. Models designed using computer technologies are error free and accurate. The models so made can also be tested and cross checked with actual samples to find out deviations if any. In the same fashion we can build the financial

model which can estimate the cost incurred in the formulation of the project. The financial model aims at finding out the investments that are required to establish the system and make it functional. The design and development of such models is also possible with the help of computer based tools.

(d) We have software packages like Ms. Excel or SPSS that are used to manipulate financial data and produce quick and error free and results. Besides there are various visual and graphical tools that present data in a more cognitive form. The working prototype of the system is depicted by the operating plan which generated a functional model of the project. In this regard we have numerous simulations tools which present the future project as a real working model, CAD/CAM being the most widely used and most recognized.

(e) Once above levels have been completed successfully, the business venture is to be setup. The first step is to make the business legal by registering it and can be carried out online and in a hassle-free manner. Once registered, the entrepreneur can start an official website to create a better relation with other business peers and customers. The computer technology can be used in the business to make things work efficiently and speedily.

(f) The online shopping and delivery of products is a new craze not only for today's youth but also for elderly people. Few years ago, who would have thought that they can earn millions by not even setting up a store/showroom for selling clothes, shoes and other numerous items under one roof? This kind of service has not only benefited the sellers but customers are also satisfied with the ease of shopping.

(g) In the world of cutting-edge technology the entrepreneurs can launch the product locally as well as give it a global market by making use of e-commerce, which helps the entrepreneurs in attracting a larger domain of customers. He just needs to present the service or product on a website where customer can see and place the order. There might not be any outlet at all or it can be anywhere depending upon entrepreneur's convenience and financial stability.

(h) The last level in the entrepreneurship aims at building better business ties by going public to expand the venture. Electronic communication networks and IT bring together buyers and sellers to create virtual market places such as NASDAQ, NYSE, Arca and Globex.

(i) Information technology affected the way business is carried out. Now we have the trend of touch-screens everywhere providing quick business deals and transactions using virtual facilities like web conferencing, online document sharing and online money transaction which have almost eliminated the need for business travel.

(j) IT in business operations does save a great deal of time during the completion of daily tasks. Paperwork is reduced with automation, and financial transactions are automatically calculated. As technology improves, tasks that were formerly performed by human employees are now carried out by computer systems.

2.2 Disadvantages of IT in Entrepreneurship

The benefits of inclusion ofIT in business are innumerable but sadly there are certain disadvantages as well. For one, the startup costs required for implementing any type of IT system can be too expensive and may prove to be costlier than the raw product of the project itself. The user licenses for genuine use of various software and hardware can also prove to be a big-ticket for the entrepreneur. The cost of training employees who are less familiar with technology also requires funding. Expert consultation may also be required for advanced technological setup of the project.

Once the entrepreneur meets the startup expenses, additional costs need to be incurred for system maintenance, engagement of skilled technicians to fix the problems, etc. These expenses are a major disadvantage, particularly businesses using technology for the first time in their ventures. Also, future employment is insecure for specialized youth because of state of art technology which provides better results than humans and takes much lesser time than humans, like for example, automated money withdrawal machines provided by banks have replaced live workers. IT systems are vulnerable to security threats in spite of being faster in pace. The security breaches are possible particularly when systems are accessible to the Internet. If appropriate security is not ensured, malicious individuals may access confidential important data thereby altering or permanently destroying, making it unusable for future and thus creating havoc.

3. CONCLUSION

It can be concluded that entrepreneurship depends largely on technology from scratch. If the establishment of a business venture is smooth daily functioning can be guaranteed with

maximum use of technology. Right from USB flash drives or CD ROMs, tablets, notebooks, PCs to portable-printers, websites and web-based applications, technological innovations have changed the entrepreneurship perception like anything. IT impacts entrepreneurship in both good and negative ways, depending on the objectives a business has, the technological tools it chooses and how well entrepreneurs and their employees make use of new systems. The technology can be brought into best practice if it is used in smart way. The technology should be used with utmost care especially the Internet based transactions, since the latter can prove fatal for the organization if proper security measures are not followed.

REFERENCES

1. Howard (2007). The role of technology in entrepreneurship.http://wibi.us/1b0ek0Y
2. Hussain, Mohammad Farooq *et al* (2011). Impact of innovation, technology and economic growth on entrepreneurship.*American International Journal of Contemporary Research*, **1**(1).

BIBILOGRAPHY

1. Howard,George (2007).The role of technology in entrepreneurship. http://wibi.us/1b0ek0Y
2. Kia, M., Shayan. E. and Ghotb, F (2000). The importance of IT in port terminal operations.*International Journal of Physical Distribution & Logistics Management*. **30**(3/4), 331-344.
3. Singh, D.K. and Nazim, Mohammad. Impact of IT and role of libraries in the age of information and knowledge societies. International CALIBER-2008
4. U.S. Department of State/Bureau of International Information Programs. Principles ofentrepreneurship.http://www.ait.org.tw/infousa/zhtw/docs/enterp.pdf
5. Espanola, Ma Eula (2012).The role of IT in the society: A term paper.http://rifestuff.blogspot.in/ 2012/05/role-of-information-technology-in.html
6. Hussain, Mohammad Farooq, Afzal, Asad, Ahmad, Naveed and Rao, Muhammad Bilal (2011). Impact of innovation, technology and economic growth on entrepreneurship.*American International Journal of Contemporary Research.***1**(1).
7. Silver, Milton. A PowerPoint presentation on stages of entrepreneurship. http://www.pages.drexel. edu/~silverm/Stages%20of%20 Entrepreneurship.ppt
8. Powell, Thomas C. and Dent-Micallef, Anne (1997).IT as competitive advantage: The tale of human, business, and technology resources.*Strategic Management Journal*.**18**(5), 375-405.

9. Lester, Donald L. and Tran, Thuhang T (2008). IT capabilities: Suggestions for SME growth. Institute of Behavioral and Applied Management-2008

10. Per Davidsson, Johan Wiklund (2007).Levels of analysis in entrepreneurship research: Current research practice and suggestions for the future. Springer, Entrepreneurship, pp 245-265.

11. Baumol, W.J (1990).Entrepreneurship: Productive, unproductive and destructive.*Journal of Political Economy*, **98**(5), 893–921.

12. Reynolds, Roger(1983).Information technology.*Environmentalist,***3**(2), 131-136.

Open Access

Scholarly Communication & Intellectual Property Rights

SCIPR-2014: Paper presented in the National Conference, pp. 55-64

Role of Library Professionals in Open Access Scholarly Communication

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ABSTRACT

The role of library professionals is more challenging in new publication models especially in the open access scholarly communication model. There are lot of issues and challenges surrendering scholarly communication in the present environment. Examining the role of library professionals in this context is pivotal for library professionals to transform the challenges into opportunities. This article reviews and explores the role of library professionals in the open access scholarly communication.

Keywords: Scholarly Communication, Open Access, Library Professionals, Open Access Literature.

1. INTRODUCTION

Scholarly communication is the foundation of higher education especially for research institutions. New methods for creating, evaluating, disseminating, and preserving scholarly output have been emerged since the last 20 years (Wright, 2013). Development of Information and Communication Technology (ICT) paved way for transformation in scholarly communication process. The traditional role of library professionals in the scholarly communication process was to organise and provide access to physical scholarly materials of the library. Now library professionals working in libraries are facing tremendous challenges in disseminating scholarly literature emanating from the institutions and also in providing access to the literature from web. They have to equip with various tools and techniques to become stakeholders in the scholarly communication process. Open Access (OA) publishing and open standards are giving significant opportunity to the library professionals in ensuring scholarly literature to the research community.

2. THE PROCESS OF SCHOLARLY COMMUNICATION

Research community shares its research results through the process of scholarly communication. University College of London (n.d) defines scholarly communication as the

method and route by which academic information is passed from author to the reader via various intermediaries and publishers. The entire process of scholarly communication includes creation, evaluation, dissemination and preservation of scholarly literature. Researchers generally prefer peer reviewed journals for consulting for advancing their research. Research papers are subject to peer review by experts before accepting for publication. When the editing process is complete, it is accepted and published in the journal concerned.

2.1 Transition in Scholarly Communication

Traditional system for disseminating scholarship is in crisis because of many limitations. This crisis also called 'serial crisis'. So there is an urge for utilising present day systems and tapping the present opportunities for research (Carnegie Mellon University).The impact of ICTs as well as increasing journal prices paved way to think of alternative scholarly publishing systems to achieve a wider distribution of scholarly material. This system is supposed to be capable of protecting from copyright restrictions and increase in the price of the journals (Bjork, 2004).The result was the emergence of scholarly communication model known as Open Access. According to Keith Webster OA is the key component of the drive towards open science which is fundamental towards solving problems facing the world. The OA model and its new methods of creating tasks of scholarly communication process are more and economically sustainable (Wright, 2013).

3. OA SCHOLARLY COMMUNICATION

Open access is the free online availability of digital content, especially of peer-reviewed scientific and scholarly journal articles and grey literature such as Electronic Thesis and Dissertations (ETDs), technical reports, project reports, etc(Ghosh,2009). OA resources mean that information content is also accessible through network in digital format and free from most copyright restrictions. An OA article has limited copyright and licensing restrictions which means anyone, anywhere, with access to the Internet may read, download, copy, and distribute that article. (UC Berkeley, n.d). OA resources include the information materials that reside in Institutional Repositories (IRs), ETDs, digital archives, journals, databases, directories DOAJ, Open DOAR, and similar other resources, gateways and portals. OA resources and OA literature are used most often synonymously.

3.1 Benefits of Open Access

The Scholarly Publishing and Academic Resources Coalition (SPARC, n.d.), an international alliance of academic and research libraries working to create more open system for scholarly communication, listed the following benefits of OA in its documentation.

3.1.1 For Researchers

- Increases readers ability to find, use relevant literature
- Increases the visibility, readership and impact of author's works
- Creates new avenues for discovery in digital environment
- Enhances interdisciplinary research
- Accelerates the pace of research, discovery and innovation

3.1.2 For Educational Institutions

- Contributes to core mission of advancing knowledge
- Democratizes access across all institutions regardless of size or budget
- Provides previously unattainable access to community colleges.
- Provides access to crucial science, technology, engineering and medicine materials
- Increases competitiveness of academic institutions

3.1.3 For Students

- Enriches the quality of their education
- Ensures access to all that students need to know, rather what they (or their school) can afford
- Contributes to a better-educated workforce

3.1.4 For Businesses

- Encourages innovation thru access to cutting-edge research
- Stimulates new ideas, new services, new products
- Creates new opportunities for job creation

3.1.5 For Public

- Provides access to previously unavailable materials relating to health, energy, environment, and other areas of broad interest
- Creates better educated populace
- Encourages support of scientific enterprise and engagement in citizen science

3.1.6 For Research Funders

- Leverages return on research investment
- Creates tool to manage research portfolio
- Avoids funding duplicative research
- Creates transparency
- Encourages greater interaction with results of funded research

4. AVENUES OF OA

The informal mode of scholarly communication is almost open, flexible and responsive. Wikis, blogs and other web2.0 tools enable this environment. Predominant OAvenues are OA archives/ IRs and OA journals.

OA Archive/Institutional Repository: IR collects and preserves institution's intellectual output of the students, researchers and faculty in digital form and make available to the end users. The materials may include post-prints, pre-prints, journals article, theses and dissertations.

OA Journals: OA journals are those journals which provide access tofull text articles published in that journals and accessing that article may not have any financial charges. The OA journals are author paid or financed by voluntary organisations.

4.1 OA and its Impact on Libraries

The impact of OA publishing in a time of serial crisis is remarkable. Wasike (2013) analysed the status of university libraries in Kenya in the implementation of OA. He analysed the respondents' attitude towards OA resources in their respective universities. He found that OA is not embraced fully by the universities and felt need of collaboration, standardization,

copyright considerations, user education and training of university library staff and users OA and use. Hu, Luo and Liu (2012) reported that the traditional scholarly communication model has changed with the introduction of free scholarly communication model. It made impact on libraries in all aspects of academic libraries including role, services, technologies and collection in China. Koehler (2006) studied the impact of OA on technical services of the library. He submitted that the impact is imminent and library should cop up with handling this kind of scholarly materials.

5. ROLE OF LIBRARY PROFESSIONALS

In an academic environment the stake holders of OA scholarly communication include authors, librarians and users. Library professionals should take proactive role in introducing OA initiatives for OA scholarly communication. Reinsfelder and Anderson (2013) described the role and decision making influence of various stake holders in OA initiatives focusing on academic administrators and library professionals. Library professionals are instrumental in helping to develop new method of scholarship. Ghosh (2009) explained the role of library professionals in the OA era. According to him new dimension of information landscape include self-arching in OA repositories, meta-data harvesting, electronic document management, interoperability in searching. He also stressed the need of collaboration with IT staff. Cryer (2011) provided inputs into how librarians can incorporate OA concepts in to existing system by way of familiarising government funding initiatives, OA publishing models, institutional OA funds, IRs and activating access to an OA journal or creating an informative web guide etc.

Correia and Teixeira (2005) analysed the impact of OA movement especially OAI-Protocol for Meta data Harvesting (OAI-PMH) which provided interoperability between repositories. The study focused on the role of information managers in handling the emerging issues with the introduction of the new platform. It described with regard to the future of self-archiving, particularly in relation to peer-reviewed journals, information managers have a very important role to perform within their organizations. They must:

- Take the initiative to build OA repositories for their institutions: this includes addressing the communication cultures within different disciplines, developing management frameworks that take account of the technical possibilities, and taking

responsibility for the quality of the metadata(enhancing/validating the material provided by authors).

- Ensure archival stability.
- Promote discussion on the advantages of OA deposition among academia and administrators at the highest level.
- Demonstrate to scholars the benefits of wider exposure via OA.
- Introduce and make available innovative performance indicators, such as counting downloads and citations at the article level. This can also be seen as a complementary form of quality assessment.
- Coordinate programmes to advise and support scholars on copyright issues and how best to negotiate the right to self-archive.
- Support potential authors in their electronic publishing activities.

Thomas (2013) after considering survey regarding the scholarly communication in ARL libraries proposed scholarly communication core services. Library professionals should cope up with tools and techniques to provide these services; they should understand a variety of publishing models and that OA helps authors make their works accessible globally with wider visibility. It would be highly beneficial if they have knowledge of copyright and publishing agreement to help patrons use copyrighted materials fairly and legally and to consult authors on their publishing agreements. They also can support research by helping users evaluate OA resources for their literature reviews and help authors of papers to comply with funding mandates. Academic libraries taking care of the academic researchers have new and expanded role in OA scholarly communication. The role of library professionals in OA scholarly communication is vivid and emerging. However specific roles of library professional can be practiced in libraries.

5.1 Awareness and Outreach Programme

It is necessary to create awareness about scholarly communication process like creation, peer review, sharing and using the scholarly information in the ever changing scholarly information environment. At Furman University librarians developed outreach programme to make aware the campus community about various scholarly communication emergent topics like copyright, various scholarly communication models, OA and other relevant

aspects (Wright, 2013).It is very difficult to convince the research community the weakness of traditional scholarly communication models and the benefits of OA. It is also necessary to advise authors on how to make their research OA. Since the subscription-based journals are prestigious journals, the OA journals lack much acclaim. In this context conducting seminars, symposia on this theme is very much needed. George Town University Library successfully conducted scholarly communication outreach programme. Informing the faculty the changing landscape of scholarly communication and the benefit of OA as a vehicle of scholarly communication was found helpful (Bakker and Banks, 2009). Cryer (2011) also stressed the need of creating awareness about OA publishing and author's rights.

5.2 Enriching OPAC with OA Resources

One of the simplest methods of promoting OA is to enhance OA content discovery by incorporating the data into library's online public access catalogue Cryer (2011). Library professionals can find and evaluate the relevant OA resources and add those resources withlibrary's OA catalogue. Library professionals can select, review, evaluate, describe internet resources, create metadata records and develop a web resource navigation system (Hu, Luo and Liu, 2013). Many open source library management systems support the services of integrating OA resources in the OPAC.

5.3 Creation and Managing Institutional Repository

Library professionals can create IR to show case the intellectual creativity of the institution. It is the best mean to support OA scholarly communication. Okafor and Ukwoma (2011) in their study recommended hosting and managing digital content, by way of building and managing IRs. The publications digitised and uploaded in IRs can be easily accessible to other desired users.

5.4 Assisting in Copyright Issues

Library professionals can help readers and authors in copyright uncertainties. Authors most often prefer to protect their intellectual material from copyright infringement. In the OA environment the chances of copyright infringement is very large. Wasike (2013) found in their study the need of university libraries in giving assistance by providing tools and

support to faculties and prospective authors to manage their copyrights and provide OA to their work.

5.5 Advocacy

It is the act of pleading or arguing for a particular cause. As far as OA is concerned the advocacy campaign is much important to gain momentum to the OA cause. Still many researchers and scholars don't consider OA as the standard vehicle of scholarly communication. Financial backup is required for established OA platform in an institution. In this context advocacy should be given due importance among the prospective audience. Library professionals keep track with OA movement through setting up of IR and advocacy campaign in their institution will make significant impact in its promotion (Woodward, 2010).

5.6 Research Data Management

Research data management concerns the organisation of data, from its entry to the research cycle through to the dissemination and archiving of valuable results. It aims to ensure reliable verification of results, and permits new and innovative research built on existing information (http://www.dcc.ac.uk/resources/briefing-papers/making-case-rdm# sthash.RuobvT6S.dpuf). As the volume of research data increases library professionals can help researchers in handling it by managing, selecting, retaining and storing it through the use of OA platforms.

5.7 Publishing Services

In contrast to the traditional model, in OA publishing model academic libraries have lot of expanded role. In the OA environment academic library can play the role of publisher of scholarly literature by taking measures to initiate economic alternative to traditional publishing. OA publishing is viable alternative to it. Some of the OA publishing outlets have created direct competition to subscription based economic model. Library professionals can initiate this kind of journals publishing in their institutions for supporting OA scholarly communication. SPARC,s working to create an open system of scholarly communication. Public Library of Science (PLoS) and BioMed Central are the two publishers successfully established new outlets to publish peer-reviewed journal content without payment from users; but the authors and grant-awarding bodies have to meet these charges. Wellcome Trust act as grant awarding body that support the OA by making payment to authors in the

form of grant to facilitate OA publication. A directory of peer-reviewed OA journals can be found at www.doaj.org.

6. CONCLUSION

Library professionals have prominent role to play in shaping the future of scholarly communication. They have to be aware of the changes taking place in scholarly communication and try to influence it for the benefit of research community and the organisation at large. Scholarly communication services will become the core service of academic libraries in the coming days. Academic library professionals can take measures to support and improve scholarly communication by way of various initiatives. They must cope up with the use of new applications and new opportunities created by the OA scholarly literature. Participation and commitment of library professionals is essential for flourishing OA initiatives in the complex information environment.

REFERENCES

1. Bakker, T.A. and Banks, M.A. (2009). Scholarly communication initiatives at Georgetown University: Lessons learned. *OCLC Systems & Services*, **25**(1), 60–66. doi:10.1108/10650750910931931

2. Bjork, B.C. (2004). Open access to scientific publications - an analysis of the barriers to change? *Information Research*, **9**(2). doi:10.1016/S0098-7913(03)00041-8

3. Carnegie Mellon University (n.d.). Scholarly communications. Retrieved on 21 October 2013 from http://www.cmu.edu/scholarly-communications/

4. Correia, A.M.R. and Teixeira, J.C. (2005). Reforming scholarly publishing and knowledge communication: From the advent of the scholarly journal to the challenges of open access. *Online Information Review*, **29**(4), 349–364. doi:10.1108/14684520510617802

5. Cryer, E. (2011). Incorporating open access into libraries. *Serials Review*, **37**(2), 103–107. doi:10.1016/j.serrev.2011.03.002

6. Ghosh, M. (2009). Information professionals in the open access era: The competencies, challenges and new roles. *Information Development*, **25**(1), 33–42. doi:10.1177/0266666908098075

7. Hu, D., Luo, A. and Liu, H. (2013). Open access in China and its effect on academic libraries. *The Journal of Academic Librarianship*, **39**(1), 110–112. doi:10.1016/j.acalib.2012.11.009

8. Koehler, A.E.C. (2006). Some thoughts on the meaning of open access for university library technical services. *Serials Review*, **32**(1), 17–21. doi:10.1016/j.serrev.2005.12.003

9. Okafor, N. V. and Ukwoma, S.C. (2011). Scholarly communication of academics in science and engineering in Nigerian university libraries. *International Journal of Library and Information Science*, **3**(3), 58–67.

10. Reinsfelder, T.L. and Anderson, J.A. (2013). Observations and perceptions of academic administrator influence on open access Initiatives. *The Journal of Academic Librarianship*. doi:10.1016/j.acalib.2013.08.014

11. SPARC (n.d). Why open access?http://www.sparc.arl.org/ resources/open-access/why-oa

12. Thomas, W. J. (2013). The structure of scholarly communications within academic libraries. *Serials Review*, *39*(3), 167–171. doi:10.1016/j.serrev.2013.07.003

13. UC Berkeley (n.d.). Open accessscholarly communication - library collections. Retrieved 20 January 2014 from http://www.lib.berkeley.edu/scholarlycommunication/open_access.html

14. UCL Library Services -- Scholarly Communications. (n.d.). Retrieved January 20, 2014, from http://www.ucl.ac.uk/Library/scholarly-communication/

15. Wasike, J. M. (2013). An assessment of the status of open access resources in Kenyan university libraries. *Library Hi Tech News*, **30**(6), 17–21. doi:10.1108/LHTN-12-2012-0074

16. Woodward, H. (2010). Dissemination Models in scholarly communication. *New Review of Academic Librarianship*, 16(sup1), 1–3. doi:10.1080/13614533.2010.514763

17. Wright, A. (2013). Starting scholarly conversations: A scholarly communication outreach program. *Journal of Librarianship and Scholarly Communication,* 2(1). doi:http://dx.doi.org/10.7710/2162-3309.1096.

SCIPR-2014: Paper presented in the National Conference, pp. 65-73

Open Access System in India and Abroad

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ABSTRACT

Open Access (OA) system, a gateway of immense knowledge is at a rampaging demand in this era of technology. The feature ofeasier availability and free accessibility on public domain has made it popular among its users. History reveals that there are over 15 entire disciplines where the average prices for one journal is over $1000 per year. But with the inception of OA system the scenario has totally transformed.In August 2013, a study carried out for the European Commission reported that 50% of a random sample of all articles published in 2011 as indexed by Scopus were freely accessible online by the end of 2012.The prime agenda in developing nations like India is the problem of availability of necessary capital for OA system. Access denied to certain information to the scholars, professionals, researchers and students tend to downturn their outstanding potential. It prevents them from contributing entirely to world class research. Paid articles, papers and journals pertains a no return policy and the user often faces the dilemma of relevancy of the matter with their use. The paper focuses on the comparative trend analysis of the OA system at global and Indian context. It highlights the existing loopholes in the system in abroad and India. The paper further encapsulates suggestive measures to overcome the hurdles in the system to make it more user friendly and cost effective for the executors and the users. Science spreads and increases best when there are no restrictions to access.

Keywords: Open Access, Accessibility, Information, Journals, Availability.

1. OPEN ACCESS SYSTEM

With the escalating pace of development in technology and with the emergence of internet, Open Access (OA) system serves right to the crisis of data sharing and distribution. A free online access to scholarly research, papers, journals, magazines, articles, etc. has made it easier for large domain of users. The emergence of OA system can be attributed to the phenomenon of public access to the World Wide Web in late 1990s and in early 2000s as technology scaled up it became widespread. Its main idea originated when researchers started distributing their work online by self-archiving. The initial concept refers to the unrestricted online access to scholarly research primarily intended for scholarly journal articles(http://en.wikipedia.org/wiki/Open_access).The term open access was coined in

2002 in a meeting conducted by Open Society Institute in Budapest. This was followed with the formulation of repositories. There are two prime strategies for OA, firstly by self-archiving in the repositories which is referred as green OA and secondly by publishing in an OA journal termed as gold OA.It lays down primarily two provisions viz. first one is free to read and second free to reuse with some rights.

1.1 Merits of Open Access

It provides a new hemisphere to students, teachers, researchers and scientists to excel, explore, innovate and cultivate new ideas in their fields. With the help of OA users can search, download, copy and circulate scientific readings. The OA system has provided a new vision in providing access to resources in the course of research and development. Its feature of easier availability and free accessibility in public domain has made it popular among its users. It has not only managed the problem of availability of scientific publications but it is also cost-efficient and time saving. It provides a platform for new innovations where various concepts can be related to build upon new relationships. Availability of equal opportunities to all helps in assessing individual's potential for public good. Digital publications have reduced the cost as compared to the paper publications and are faster to circulate. Publishers are adequately compensated for their work by the authors. OA system has efficiently combated with the issue of plagiarism.

2. OA SYSTEM IN ABROAD

World Wide Web has proven its worth in determining the competency of the OA around the globe. This integrated information system can be solely imputed to the advancement in technology. The scale of development of OA varies from country to country depending upon the awareness and policies. A prevalent surveillance shows that developing countries lag behind the developed nations in terms of participation. The Directory of OA Journals published regularly is one of the mainstream global directories which covers 9721 stable journals. USA stands first followed by Brazil and UK with 14.08%, 9.33% and 6.35% of global share of OA journals respectively. Several emerging economies like Brazil, Russia, India, Canada and South Africa are actively contributing to the system. They all account for about 17.31% in OA journal publishing (Das, 2013).

Table 1 OA journal publishing countries in DOAJ

Rank	Country	Journals
1	Unites States	1396
2	Brazil	907
3	United Kingdom	617
4	India	593
5	Spain	494
6	Egypt	398
7	Germany	312
8	Romania	289
9	Canada	276
10	Italy	274
11	World share by this group of countries	56.87%

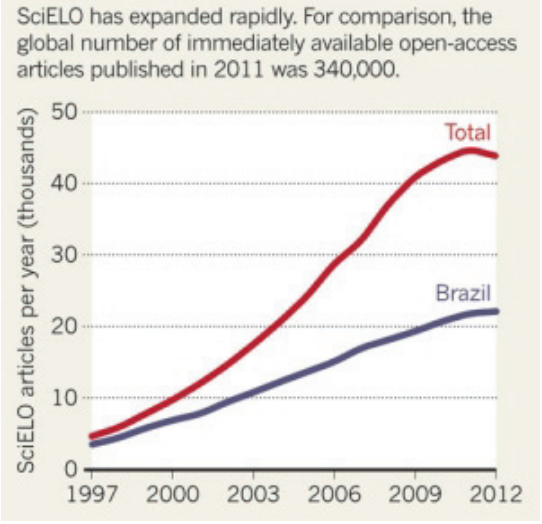
Source: DOAJ.org, accessed on 23/05/2014

Global OA Portal (GOAP) is a substantial initiative launched in 2011 by UNESCO. It highlights country-wise analysis of 148 countries, status of OA and draws attention towards the critical factor that led to the success of OA system in various nations. It serves right in providing assistance to other nations regarding the working of system and policies.

2.1 Case of Brazil

Brazil through its concrete reforms has emerged as a pioneer in OA movement. The development of OA in Brazil can be accounted to SCIELO (Scientific Electronic Library Online) which was established in 1997 (Fig. 1). It is now ranked number one 100% web-based scientific data repository in the world. It gets around 450 million hits per year.The portal charges very less for publishing as funding is being supported by government for infrastructure and software. Effect of such initiatives can be seen by the visibility across the world to the portal. In year 2011 Brazilian research was the most open in the world, around 43% of the Brazilian articles were free to read in public domain as compared to US wit 6%(von Noorden, 2013).All the scientific readings on the portal suffer no language barriers which tend to ensure the feasibility to users. The publications are available in variable formats which are well documented. The portal maintains online manuscript processing and consistently makes effort to improve upon the quality of journals and articles through its panel. Currently 11 countries participate to the portal and several interventions are being

made to enhance the global network to the portal. The policy makers try to safeguard the interest of all the stakeholders in the system; they even proposed a bill for a national mandatory policy for their country. The major issues that the country faces are primarily to enhance the global participation and to tackle the publishers entering the market for commercial gains.



Source SciELO

Figure 1

3. OPEN ACCESS SCENARIO IN INDIA

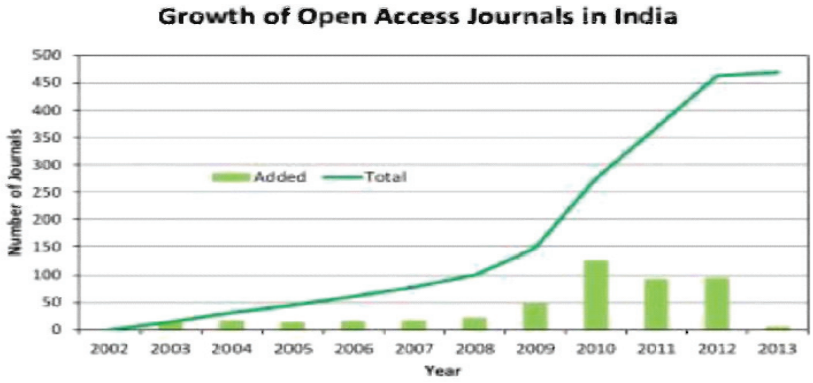
At global level, OA is gathering momentum at great pace but it is a special matter of concern in developing nations which have less money to fund or publish research and are incapable of buying the major research published elsewhere. Countries like India, have an immense opportunity for developing a wide hemisphere in OA publishing. India has a unique position in scholarly publishing scenario. Although it has managed to secure 12th position for overall number of journals among top 25 publishing countries, it falls down to 18th position for journals with online content (Haider,2005).

In the list of OA journals, India ranks fifth; but what makes India do so well in the list of OA journals is almost 50% (48 out of 103) of the online journals from India are OA (see Haider, 2005). A large percentage of electronic journals in India are providing OA without

even charging the author or author's institution for publication of the articles. When it comes to Registry of OA Repositories, India ranks 11th in the list of interoperable archives.

3.1 OA Initiatives and Publishing in India

The growth of OA journals in India can be analyzed; after Budapest OA Initiative (2002), the Indian Academy of Sciences made all its journals accessible openly. Till the year 2005, only medical journals could be accessed in DOAJ, India but from 2006 other subject journals likes social science, chemistry, mathematics, defence, library science etc. were added to the list in the directory. The growth of OA journals in India can very well understood by Fig. 2.Directory of OA Journals lists 593 journals from India and the Registry of OA Repositories has 39 repositories from India. The World health Organization and Indian Council for Medical Research are working together on National Health Information Collaboration. The following examples highlight OA initiatives in India.



Source- ICRISAT

Figure 2 Growth of OA journals in India

Indian National Science Academy: It was established in 1935 and publishes 4 journals.

Indian Academy of Sciences: It was established in 1934 and is a well-known publisher at global level with its 11 science journals reporting research work both in India and abroad.

Indian Institute of Science: The E-print archives of the Indian Institute of Science acts as an online digital repository of research papers, including preprints and post-prints, technical reports, unpublished findings, and journal articles written by the faculty. It was set

up using eprint.org open-source software, and is registered in the e-prints registry. Eprints@iisc has now become a part of the worldwide institutional e-print archives.

- **Bioline International:** It provides access to 14 Indian journals on their primary site.
- **MedKnow Publications:** It caters publishing services to over 30 biomedical journals.
- **National Chemical Laboratory:** It provides free access to their data, including data from the National Collection of Industrial Micro-organisms and the National Centre for Biodiversity Informatics.
- **National Aerospace Laboratory:** It provides an aerospace virtual library.

A great number of journals published from India belong to learned associations and societies and are published without any involvement of commercial publishers. The members of the societies receive the print copies of the journals without paying any recurring or annual fee. For source of income, they depend on non-member subscription, which are limited and are restricted to the Indian universities and colleges, on advertisements in print editions.

4. ISSUES RELATED TO OA IN INDIA

- There are several programs like, HINARI and AGORA in which journal publishers contribute electronic subscriptions to developing countries whose per capita is less than $1000. These programs mitigate the access crisis but do not solve it. Even having GDP per capita being less than $500, India is surprisingly excluded due to low impact factor (Suber and Arunachalam; 2005).
- Low Budget: Indian Institute of Sciences, Bangalore has the best funded research library in India, but its annual budget is just Rs100 million (about $2.2 million).
- Lack of Infrastructure: India with the largest number of IT professionals fails to build e-archives for institutions and moreover the existing archives are nearly vacant and are not filling up.

4.1 Issues Related to Publishing

- Low Impact Factor: Scientists always prefer their work to be published in high impact journals. Until recently, India had no journal with impact factor of more than 1.0,

consequently the best science from India is rarely published in the Indian journals (Sahu,2006).

- Limited Visibility: Most of the Indian journals undergo from low circulation-low visibility syndrome. These journals have limited visibility and restricted mainly to the members of the association. These journals are cited less frequently than their western corresponding periodicals with this limited visibility.

5. CHALLENGES

The existing system faces vivid challenges from the users and executors point of view. The OA system tends to ignore the funding criteria for researchers but what if poor researchers want to publish their work? Several publishers have entered the market with no experience and expertise. Adequate resource mobilization serves right to their business models irrespective of the quality and acceptance bar is often low for journals. Developing nations mainly face two major difficulties: first the lack of awareness and secondly lack of capital. Governments are unable to provide the adequate infrastructure and software for research and often libraries cannot afford prime journals due to their high subscription costs. Some journals in order to maintain their prestige in market often deny OA which makes science an elite affair. Users presume quality of work to the journals name. But minimal circulation only ensures low social recognition. For example, a 2006 study in PLoS Biology found that articles published as immediate OA in PNAS were three times more likely to be cited than non-OA papers (Eysenbach, 2006). There yet exists the problem of relevancy of matter. Users are always in dilemma whether the paid journal will serve their purpose or not as they follow a no return policy. Holistically, the OA system across the globe fails to encounter the guidance policy and it lacks international codes that are generalized for all. Is this system rightful and how we define the boundaries of system? Can it be made universal guiding a universal policy? Are these restrictions defining the limits to our development?

6. INTEGRATED SOLUTIONS

- **Institutional Repositories:** Institutions like IISC, IITs, NITs and other prestigious institutions that are categorized amongst the best foundations at global level. They should support OA and update their scholarly material, such as thesis, presentations, videos, teaching material on their respective portal services. It will not only support

the research works but also publicize an institute's research strength, providing maximum research investment.

- **Awareness Programs:** The main issue is unawareness about OA amongst the users. To enhance the knowledge about the benefits of OA Journals and archives, conferences and seminar can be executed which can be also considered as another source of income. For creating an OA to publicly funded research in India as well as in Abroad, a platform on Social Networking Sites can be formed for advocating OA and development of community e-infrastructure capacity building and OA policy framework. Primarily, this means educating scientists about the benefits of OA and persuading funding agencies, universities, libraries and governments to adopt OA-friendly policies.
- **Self-Archiving:** The Scientists need to make their high quality research work published in toll based journals that are freely accessible through self-archiving. A provision of universal author id can be helpful in this regard.
- **Guidelines:** Standard guidelines for OA can be provided on national or international basis and necessary policy reforms can be suggested to the nations.
- **Relativity in Charging Fee:** Relational attributes can be given to the quality of work and the fee charged for publishing. For this purpose rating the work can be done through a panel within the country.

7. CONCLUSION

Open access acts as a seizing opportunity not only for greater visibility and impact but also for enabling better management and assessment of research in India as well as in abroad. OA helps researchers directly, authors and readers. It enhances research productivity and accelerates the pace of discovery; it helps everyone who benefits from research advances. It is a beautiful solution to a serious problem (Suber and Arunachalam, 2005). Pondering upon the challenges faced by developing as well as by developed nations, improvised OA system will overcome the hurdles and will lead to a different dimension of research and definitely refine the field of not only sciences and technology but also other domains like defence research, environment, space, energy, agricultural research, industrial research,

ecology, medicine and ocean development. As rightly said, science spreads and increases best when there are no restrictions to access.

REFERNCES

1. Das, Anup Kumar (2013). Situation analysis and capacity building for OA, *prepared for Commonwealth Educational Media Centre for Asia (CEMCA) and UNESCO (*25 May 2014)
2. Budapest OA Initiative, FAQ. Earlham.edu (13 May 2014).
3. Eysenbach, G. (2006). Citation advantage of OA articles. *PLoS Biology***4**(5): e157. doi:10.1371/journal.pbio.004015 accessed on 23/05/2014.
4. Green or Gold: *Open Data Access Policy*(n.d.). Retrieved from http://www.scienceforbrazil. com/green-or-gold-open-data-access-policy/
5. Jeffery, Keith G. (2006). OA: An Introduction. *Ercim News*, **64**, January 2006
6. Rajshekhar, T.B, OA initiatives in India.*OA and the public domain in digital data and information for science, **34**(pp. 154-157)*
7. Richard van Noorden. (2013).Brazil fêtes open-access site. *Nature,***502**(418), 24 October 2013. doi:10.1038/502418a
8. Sahu, D.K. , Parmar, C. (2006) OA in India ,*Chapter no. 19*
9. Registry of OA Repositories (ROAR).http://roarmag.org/ Retrieved on 27 May 2014.
10. Directory of OA Journals DOAJ.*http://doaj.org* Retrieved on 24 May 2014.
11. Suber, P. (2012).*OA* .The MIT Press Essential Knowledge Series
12. Suber, Peter andArunachalam, S. (2005). OA to science in the developing world.*World-Information City.*
13. Swan, Alma {2005). OA self-archiving: An introduction. Eprints.ecs.soton.ac.uk. Retrieved on 25 May 2014.
14. Veeranjaneyulu, K. OA initiatives in India with reference to agriculture. *ICRISAT*

SCIPR-2014: Paper presented in the National Conference, pp. 74-85

Prospects of Social Networking in Academic Libraries

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ABSTRACT

The goal of this article is to examine the use of the major social networking tools in academic libraries in the United States. Since college students are heavy users of social networking, Such efforts provide academic libraries without reach possibilities to students who do not use this. The paper summarizes findings from articles published since 2006 found in the Library Literature and Information Full Text database. The first author also examined librarian blogs and library accounts in various social networking sites. Social networking can be an effective method of student outreach in academic libraries if libraries take care to respect student privacy and to provide equal coverage for all subject areas. Most information about social networking is anecdotal with very little statistical analysis of its effectiveness. The popularity of various social networking sites can change quickly. Academic libraries should consider using social networking as an outreach effort but take care to avoid the potential negative consequences. This article provides a snapshot on the use of social networking in academic libraries through a review of available literature and an examination of the libraries' presence on the most popular social networking sites. It also provides help for academic libraries wishing to implement social networking.

Keywords: Social Networking, Academic Libraries, Student Outreach, FaceBook, Second Life, Blogs.

1. INTRODUCTION

Facebook, My Space, Twitter, Second Life, Delicious, Blogs, Wikis; these are just a few of the social networking options available on the Internet today. The varied social networking tools are increasingly used by individuals of all ages but are especially popular among young people and college students. Due to high use among these two groups, many academic librarians advocate using these new social web platforms to reach out to student populations (Farkas, 2007a; Farkas, 2007b; Mathews, 2006, Mathews, 2007a; Milstein, 2009).Online social networking by academic libraries is not, however, without controversy. While some maintain that social networking efforts are a successful and innovative method of student outreach, others argue that social networking by academic librarians is an in effective use of librarian's time and effort (Sekyere, 2009).A review of recent literature

shows that social networking by academic librarians provides a potentially effective method of student outreach as long as librarians take into account the possible issues that may arise.

1.1 Social Network

The Oxford English Dictionary defines social networking as the use or establishment of social networks or connections; (now especially) the use of websites which enable users to interact with one another, find and contact people with common interests, etc. (Social Networking, 2010). A social network or online community is a web based service that focuses on building online communities of people who share interests and / or activities by a variety of ways. It is a social structure made of nodes (which are generally individuals or organizations) that are tied by one or more specific types of interdependency, such as values, visions, ideas, financial exchange, friendship, sexual relationships, kinship, dislike, conflict or trade, etc. Few social networks currently charge money for membership to run the site. Companies such as MySpace and Facebook sell online advertising on their site for the same purpose.There are generally two types of social networks. These are:

Internal Social Networks**,** a closed / private community that consists of a group people within a company, association, society, education provider and organization or even an invite only group created by a user.

External Social Networks, an open / public and available to all web users to communicate and is designed to attract advertisers, for example MySpace, Facebook, Twitter and Bebo.

1.2 Characteristics

Social network service provides the following ways for the users to interact with others:

- My profile: Set up and customization facility for profile;
- Search: Can search for friends and others;
- Making friends: One can invite others as friend. In most social networking services, both users must confirm that they are friends before they are linked. Some social networking sites have a *favorites* feature that does not need approval from the other user.
- E-mail: Can send or receive e-mail from others.

- Instant messaging services (Chat): Can send chat message to online friends.
- Scrapbook: Can append short message in the profiles of the friends/network members.
- Calendars (Events): Can create calendars or events.
- Articles: Can upload, download and share write-up.
- Notes: Can create and view the notes created by others.
- Blogs: Can post personal write up.
- Groups: Can create groups and join other group, post replied to, and so on.
- Forums: Can create forum and join forum created by other people, post replies to, and so on.
- Music: Listen, download and upload music.
- Photos: Download, view and upload photos.
- Videos: Download, view and upload personal videos.
- Games: Play online games, sometimes even can download.
- Social Apps or gadgets: Facility to incorporate others online social apps and gadgets.
- Notifications on websites: Social networks generally send notifications to users when they are removed from a person's friends list, someone comments on their profile page, send email and for such other things.
- Privacy settings: Helps in finding regular control of who sees what. Ability to block an unwanted member, and so on.

2. METHODOLOGY

To analyze the use of social networking tools for outreach in academic libraries, the first author conducted a review of the recent literature. In order to analyze how academic libraries utilize social networking tools, a search was conducted in Library Literature and Information Full Text database for articles about social networking, library 2.0andeachof the social networking tools. Other databases were utilized as necessary to retrieve relevant articles located through a bibliography search of each article found during initial research. Due to the dynamic nature of social networking tools, only articles and books published during 2006-2009, were considered. A search of the library catalog at Wayne State

University was also conducted regarding these topics. In order to gain a broader understanding of the issue, librarian blogs and library accounts in the various social networking sites were examined for effective practices. The sheer number of social networking sites available today can be overwhelming for any librarian. As a result, only major social networking services, such as Facebook, Twitter, and Delicious, were analyzed as useful forms of student outreach within an academic library.

3. EMERGENCE OF SOCIAL NETWORKING AND ITS IMPACT ON OUTREACH

The rise of online social networking tools is rooted in the emergence of Web 2.0, loosely defined as the evolution to a social and interactive web that gives everyone a chance to participate… (Kroski,2007b). The web is no longer the domain of those who possess computer programming skills. Average Internet users are creating knowledge repositories on Wikis, developing bibliographies through social book marking sites, building historical and cultural collections through media sharing applications, and forming relationships with like-minded individuals in social networking communities (Kroski, 2007b). With the enormous popularity of Web 2.0'ssocial networking platforms, libraries of all types have embraced them as a method of promoting themselves within their communities. This new method of providing library services is referred to as Library 2.0.Academic library outreach is not a new phenomenon. Thus, the use of social networking is only the latest example of academic library outreach to students. Student-based outreach is encouraged because college students today are less dependent upon the traditional library.

3.1 Major Social Networking Websites

Though an array of comprehensive social networking websites exists, the most common sites are Facebook and MySpace, the latter with approximately 70 million users in the United States but has recently experienced a decline in the number of users compared to Facebook (Arango, 2009). According to comScore marketing data, Facebook saw 100 million US users during November 2009, a record for the website (Lipsman, 2009).Although MySpace was originally the most popular social networking site, Facebook started with college students at Harvard and originally permitted only users with a college email address to register (Chu and Meulemans, 2008).Past estimates have placed Facebook with an 85 percent market share among college students (Mathews, 2007b). As a result of its strong

user base among college students, Facebook appears to be the most logical social networking website to be used by an academic library. Most recent discussions about social networking focus on Facebook rather than MySpace. This is also evident from the higher number of social networking articles (95)on Facebook in the Library Literature and Information Full Text database in November 2009 compared to 50 articles on MySpace. For these reasons, discussion will focus on Facebook rather than MySpace.

Discussions by academic librarians highlight several uses of Facebook for academic library outreach. One of the primary uses of Facebook by academic libraries is to market the library with a library fan page. Libraries advertise hours, location, and website information. By linking to the library's website, the Facebook page acts as a portal to the library (Farkas, 2007a). Since students frequently use outside search engines for academic research, even abasic Facebookpage can serve as a reminder to use the resources available at an academic library (Farkas, 2007a).

Libraries also create event invitations for programs as an additional forum to promote library activities (Chu and Meulemans, 2008).Essentially, Facebook pages provide a marketing tool for the services available to students at their academic library. Additionally, academic libraries are experimenting with embedding library services within the Facebook page itself for a true outreach program. Using Facebook applications, some academic libraries embed the library catalog to allow students to access the contents of the library catalog without actually visiting the library's website (Farkas, 2007b). Another option for libraries usingLibGuides is to embed subject guides within the Facebook page through a LibGuides application (iLibrarian, 2007).

Some academic libraries are also embedding the ask-a-librarian feature within the Facebook page to provide reference services through the social networking medium and to expand the chat and message function available through Facebook itself. For example, the Harlan Hatcher Graduate Library at the University of Michigan has created a Facebook page incorporating a catalog search function, ask-a-librarian, LibGuides, a World Cat search, and links to all essential library web pages. Essentially, the goal of creating a Facebook page is to provide customized library services within Facebook itself rather than merely redirecting users to the official Website

Examples: Out of the following list of social network, we recommend you to have a look on Facebook, LinkedIn, MySpace, Ning, Orkut, Twitter, and YouTube. They are grabbing the world of social network with their special features.

- Bebo (http://www.bebo.com/)
- Climateculture(http://www.climateculture.com/)
- Cyworld (http://us.cyworld.com/)
- dol2day(http://www.dol2day.com/)
- Facebook(http://www.facebook.com/)
- Friendster(http://www.friendster.com/)
- Hi5 (http://hi5.com/)
- LinkedIn (http://www.linkedin.com/)
- Multiply(http://multiply.com/)
- MySpace (http://www.myspace.com/)
- Nexopia (http://www.nexopia.com/)
- Ning (http://www.ning.com/)
- Orkut (http://www.orkut.co.in/)
- Skyrock (http://www.skyrock.com/)
- Tagged (http://www.tagged.com/)
- Twitter (http://twitter.com/)
- Wretch (http://www.wretch.cc/)
- Xiaonei (http://www.xiaonei.com)
- XING (http://www.xing.com/)
- YouTube (http://www.youtube.com/)

3.2 Blogs and Wikis

Blogs and Wikis offer another social platform to reach university students. Blogs are web pages consisting of user-supplied content in chronological order (Boxen, 2008).Wikis are open web pages that allow approved users to add and alter a page's content (Boxen, 2008).Many students have their own blogs and most have encountered wikis at some time.

Thus, most students are familiar with both Web formats. Blogs and wikis encourage interaction and collaboration among users, an important component for a new outreach tool. Blogs have several potential uses by academic libraries. Blogs encourage user interaction through their comment feature, which allows students to provide feedback regarding the information provided and the library itself. In one form, librarian scan post news about the library as well as events occurring at the library.Blogs are also used to create subject guides as they can be easily updated to reflect the most current sources for a particular class or department. Libraries embarking on large projects, such as renovations, can also create a blog detailing the progress for students. Blogs allow students to comment on the information included in the blog by inviting user feedback regarding the library. However, traditional blogs still require the student to come to it rather than the library going to the users.In contrast to blogs, wikis are collaborative web pages allowing for higher user participation. Wikis allow users to create web pages and documents as a collaborative community. Unlike most web pages, wiki user scan edit the content as they read. Within academic libraries, wikis are primarily used for the creation of collaborative subject guides. Academic libraries can create subject wikis with links to resources on a chosen topic or for a particular class, including information regarding relevant databases and search tips tailored to that subject (Kroski, 2007b). Students conducting research on a topic can use the resources provided as well as edit the Wiki to include additional information. Thus, a wiki-based subject guide allows for collaboration between academic librarians and the students. For example, Ohio University created a Biz Wiki of business resources for students in the department. A study of wiki use among academic librarians revealed that private wikis allowing only authorized users to edit and read the content were the most common and represented 50%ofthe wikis created by academic libraries using the new technology. These were followed at 31.8% by semi-private wikis, which allow anyone to read the content but only authorized users to edit the page (Chu, 2009).Based on this information, it can be inferred that, though academic librarians are receptive to the idea of wikis, they are still cautious about the highly collaborative form at of Wikis and seek to maintain some level of control.

3.3 Social Media and Gaming

An assortment of social media websites has appeared in recent years to encourage users to share multimedia objects from photographs to videos. These sites also encourage users

to comment on items posted by fellow users. Users can also tag the content of the media, essentially creating a new classification system within the website itself. YouTube, Flickr, and Second Life are a few of the most popular social media websites. YouTube allows individuals and organizations to post original videos. The site also enables users to embed their videos onto other websites, including other tools such as Facebook, blogs, Wikis, or the library website. Academic libraries currently post videos of library tours as well as bibliographic instruction videos for students. Bibliographic instruction video scan also be shown during in-classroom library instruction, as described by librarians at the University of South Florida who created a video for students demonstrating how to use a database (A riew, 2008). Though it may be time-consuming to create the videos, they can be versatile in their use. Flickr allows users to post photographs and to create discussion groups. While Flickr is known largely as a photo sharing website, it also allows users to post videos as well. Academic librarians post photos of the library and its staff to provide a virtual tour of the library itself while simultaneously putting a human face to the building. Academic libraries can also post material from special collections on a Flickr account, though a general search of Flickr reveals that most academic libraries use Flickr to post pictures of the library building and its staff (Farkas, 2007b).

In addition to multimedia websites, there are also social games that can be used in student outreach. Second Life is an online reality game that allows libraries to set up virtual libraries and to provide library services, particularly reference services. Academic librarian Brian Mathews (2007a, p. 10)states that the digital libraries provide a3D environment with the potential to include video tutorials, audio players, subject guides, database and catalog searching, live assistance, instructional sessions, meeting areas, and other features. Libraries can also collaborate with other academic libraries to provide continuous service. Virtual games allow academic libraries to move traditional library services to an entirely new platform. Ultimately, social media sites enable librarians to create multimedia profiles with the goal of encouraging interaction between library staff and students.

3.4 Social Bookmarking

Social book marking websites have also emerged to encourage users to store their Internet bookmarks and to interact with users bookmarking similar websites. Social bookmarking is a form of link management that lets users to collect and label information resources for both their own use and for sharing with other users (Gilmour and Strickland, 2009, p.234). The

book mark scan be accessed from any computer or browser. After bookmarking, users tag their links with keywords that describe the webpage's content so that a tag cloud of related website scan be viewed and so that the user can view what other sources users tagged have with the same keyword.

This process is known as folksonomy (Gilmour and Strickland, 2009).The most popular social bookmarking website is Delicious. The site allows users to friend other users to see what they tag and to view other websites tagged with a particular keyword. Academic librarians can use social bookmarking to create resource lists for different departments and classes that can be viewed by students. Class reading lists and bibliographies can be created easily by tagging the resources with the department and class number (Kroski, 2007b). Some libraries add the content and tags from their Delicious account to the library catalog in order to create access points for materials that are not adequately described by the existing Library of Congress Subject Headings. Such access was provided for film classes at Ithaca College (Gilmour and Strickland, 2009).

3.5 Effective Practices

Overall, social networking should not be avoided in academic libraries looking to reach out to their students. The ultimate goal of librarians is to make library resources available to students. If social networking helps to achieve that goal, it should be actively pursued. However, social networking outreach must factor in the concerns discussed above to effectively use this new technology. Any outreach via social networking must consider the individual user base to determine which sites are most used by students as well as how students would use library resources on a social networking platform. Chu and Meulemans caution that given the dynamic natures of MySpace/Facebook, as with all new technology, libraries should proceed in adoption appropriate to their campus after analysis of the user population and consideration of overall objectives (2008,p.83).

Libraries must continuously monitor how their social networking attempts are working among their users and make any necessary adjustments to their platforms that could make the new service more effective. Ultimately, there no single model for social networking within academic libraries as no student population is the same as another. Additionally, academic libraries must advertise so that students are able to find them on various social networking websites (Mathews, 2007b).This could be on the official library website, on

bulletin boards around campus, in the student newspaper, during bibliographic instruction classes, or within the physical library itself. One account about the effectiveness of the Rutgers University library's Facebook page indicated that its proximity to the student newspaper and the library's relationship with the newspaper editor resulted in increased stories about library services as well as the newspaper's publicizing the existence of the Facebook account (Glazer, 2009).

The campus community must be aware of the library's presence in social networking platforms for them to be an effective tool and this includes in-person networking with other campus departments. Social networking by academic libraries has the potential to reap great results, but librarians must consider the most effective methods for their particular library and student population.

3.5 Importance

Social network is daily used by billions of people. It is a spontaneous movement of people using online tools to connect, take charge of their own experience, and get what they need - information, support, ideas, products, and bargaining power--from each other. It can also be used to build personal / institutional network and as a means of e-learning and social capital. The importance of social network can be seen in regards to:

Advertisement: Formation and displaying profile page information that's publicly available can be used as advertisement. In this way one can find and be introduced to potential clients, business opportunities, service providers, and subject experts and find potential partners. According to Jody Nimetz, author of Marketing Jive, there are five major uses for businesses and social media: to create brand awareness, as an online reputation management tool, for recruiting, to learn about new technologies and competitors, and as a lead gen tool to intercept potential prospects. The companies in this way will be able to drive traffic to their own online sites while encouraging their consumers and clients to have discussions on how to improve or change products or services.

Communication: Through social network one can create projects, post and distribute institutional information. Many social networks also have the facility to incorporate self-description pages (profile) including hobbies and interests rather than developing website for that.

Sharing Information Data, Files: Social networks extend the possibility for sharing information and knowledge with one another. In this way one will be able to increase both their learning and their flexibility in ways that would not be possible within a self-contained hierarchical organization.

Collaboration: Can build collaboration in different kind of projects. Participants can talk online.

Problem Solving: Can be used to gain new insights from discussions with likeminded professionals.

Connects People: It is a means to connect with people who share similar interest (classmates, friends, families, business people and co-workers, people looking for long lost friends). Also it can be used as matrimonial site

4. CONCLUSION

Social networking websites area new technology offering promising new outreach options for academic librarians. They provide a new platform for reaching students beyond the traditional library building and Website by allowing students to access librarians and the library's resources without leaving the comfort of the Websites they use the most. Though this discussion only examines a select few of the social networking tools available to librarians, the ideas for how best to use social networking tools are widely applicable.

However, student outreach attempts using social networking are less likely to be effective if they are not based upon targeted, well-thought out Programs. Concerns still exist regarding the effectiveness of social networking by academic libraries, but librarians should not be scared off entirely by these concerns. Rather, academic librarians must thoughtfully address the issues associated with social networking as they seek new avenues to reach their students outside the library walls. Lastly, there needs to be quantitative and qualitative research about the use of social networking tools as a form of student outreach to determine its effectiveness within academic libraries so that academic librarians do not rely only on anecdotal evidence when considering implementing social networking programs within their own libraries.

REFERENCES

1. Arango, T. (2009, June 16). MySpace set to lay off 400 workers. *The New York Times*.Retrieved from http://www.nytimes.com

2. Boxen,J. (2008).Library 2.0: A review of the literature. *The Reference Librarian*, **49**(1), 21-34. Retrieved 8 November 2009,from Inform a World

3. Charnigo, L., and Barnett-Ellis, P. (2007). Checking out Facebook.com: The impact of a digital trend on academic libraries. *Information Technology and Libraries*, **26**(1), 23-34. Retrieved 7 November 2009, from Library Literature and Information FullText database.

4. Farkas, M. (2007a). Going where patrons are. *American Libraries*, **38**(4), 27. Retrieved7 November 2009,from Library Literature and Information Full Text database.

5. Gilmour, R., and Stickland, J. (2009). Social book marking for library services: Bibliographic access through Delicious. *College and Research Libraries News*, **70**(4), 234-7. Retrieved 10 November 2009,from Library Literature and Information FullText database.

6. Harlan Hatcher Graduate Library / University of Michigan (n.d). Retrieved from http://www.facebook.com/pages/Ann-Arbor-MI/Harlan-Hatcher-Graduate-

7. iLibrarian (2007, August 1). Top ten Facebook apps for librarians – part one. Message posted to http://oedb.org/blogs/ilibrarian

8. Kroski, E. (2007a). Folk sonomies and user-based tagging. *In* Courtney, N. (Ed), Library 2.0andbeyond: Innovative technologies and tomorrow's user (pp.91-104).Westport, Conn: Libraries Unlimited.

9. Lipsman, A. (2009). Facebook surpasses 100 million U.S. visitors in November! Message posted to http://blog.comscore.com/2009/12/facebook_100 million_ visitors.html

10. Mack,D., Behler, A., Roberts, B., and Rimland, E. (2007). Reaching students with Facebook: Data and best practices. *E-JASL: The Electronic Journal of Academic and Special Librarianship*, **8**(2). Retrieved 7 November 2009,from www.doaj.org.

11. Social Networking (2010).Oxford English Dictionary online. Retrieved from http://www.dictionary.oed.com.

12. TimesTopics: Facebook (2009). *The New York Times*, 27 May. Retrieved from http://www.nytimes.com.

SCIPR-2014: Paper presented in the National Conference, pp. 86-95

Access to Architecture Open Educational Resources and Scholarly Communication on Public Domain

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ABSTRACT

The domain of open educational resources and scholarly communication is undergoing rapid change. Change has been instigated by the OA systems such as digital libraries, institutional repositories and OA journals. Access to OER and OA scholarly communication is of interest to many academic libraries and their users. Library and information science (LIS) Professionals are especially interested in guiding and providing access to such information to their library users; even though they are often depend on traditional subscription based library resources, moving away from the paid ones and replacing with OA scholarly resources. The paper is to describe the some key concepts of literature relating to the open educational resources (OER) and highlights the Architecture Open educational resources and scholarly communication on public domain as a new media of learning worldwide.

Keywords: Open Access, Architecture OER, Architecture OA Repositories, OA Journals in Architecture, Architecture OA Databases.

1. INTRODUCTION

OA (OA) is simply the free online availability of digital contents, scholarly journal articles, research results which authors publish without any financial benefit and is based on an ethical augment that research projects funded by the government should be available to the public. American Library Association defined OA as scholarly communication is the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use. Most of the primary scholarly communication is disseminated through journals and monographs. Publishers are always pricing their publications (whether it is book or journal) so high that the libraries end-up with paid subscriptions and purchase of expensive books. Scholars and authors always prefer to publish and disseminate their research output or findings in peer-reviewed journals with little or no monetary benefit. Majority of authors lack awareness and clear cut policies about the advantages OA publications. Users still have doubts regarding the authenticity and value of OA resources due to its access is free. Many of these users feel that they may not be scholarly and authentic.

2. OPEN ACCESS MOVEMENT

The first major international statement on OA was the Budapest Open Access initiative (BOAI) in February 2002, launched by the Open Society Institute. This provided the first definition of OA, and has a growing list of signatories. Two further statements followed: the Bethesda Statement on OA Publishing in June 2003 and the Berlin Declaration on OA to Knowledge in the Sciences and Humanities in October 2003.

2.1 Bethesda Statement on Open Access Publishing

According to the Statement issued at the Bethesda meeting on OA publishing held on 11 April 2003, OA publication is one that meets the following two conditions:

- The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicity and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship, as well as the right to make small numbers of printed copies for their personal use.
- A complete version of the work and all supplemental material, including a copy of the permission as stated above, in a suitable standard electronic format is deposited immediately upon initial publication in at least one online repository that is supported by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable OA, unrestricted distribution, interoperability, and long term archiving.

2.2 Berlin Conference

With the spirit of the Declaration of the BOAI, the ECHO Character and the Bethesda Statement on OA Publishing, in the Conference on OA to Knowledge in the Sciences and Humanities held in Berlin during 20-22 October 2003, the Berlin Declaration was made to promote the Internet as a functional instrument for global scientific knowledge base and human reflections, and to specify measures which research policy makers, research institutions, funding agencies, libraries, archives and museums need to consider.

In September 2012, ten years after the BOAI, scientists, foundations, libraries, universities, and advocates united and issued new recommendations to make research

freely available to all online. It included the development of OA policies in institutions of higher education and in funding agencies, the open licensing of scholarly works, the development of infrastructure such as OA repositories and creating standards of professional conduct for OA publishing. The recommendations also establish a new goal of achieving OA as the default method for distributing new peer reviewed research in every field and in every country within ten years' time.

3. FORMS OF OA RESOURCES

There are two modes of providing OA to research articles viz. through OA journals, and OA repositories. The main distinction between two is that OA journals conduct peer reviews and OA repositories do not. OA to scholarly literature is generally available in the form of OA journals and OA institutional achieves/repositories or digital libraries, and OA courseware.

3.1 OA Journals

Open access journals also known as Gold OA, are characterized by conducting peer reviews, published by not-for-profit publishers (e.g. Public Library of Science, PLOS) or for profit publishers (e.g. BioMed Central), publishing in digital form using quality control mechanisms like those of conventional journals, and are freely available; they allow authors to retain their copyright and use creative commons or similar licenses.

3.2 OA Institutional Achieves / Repositories or Digital Libraries

These do not conduct peer reviews, archives contain pre-prints, post prints or both and also include e-print theses and dissertations, course materials, learning objects, data files, audio and video files, institutional records, or any other kind of digital file. Repositories contain e-prints by authors in a single academic unit or an institution. Institutional archives are more stable and permanent than disciplinary achieves as they are associates with institutions and typically feature author submission, metadata creation, screening an review of submitted content by moderators and usually comply with standards like Open Access Initiative Protocol for Metadata Harvesting (OAI-PMH) for interoperability with other archives / repositories of the same nature. Typically, these are maintained by institutions, associations, small groups or even sometimes by individuals hosted using open source software like e-prints, D-space, GSDL, etc.

3.3 OA Courseware

Open Courseware or Open Educational Resources (OER) refers to free and open digital publication of high quality educational materials, organized as courses (Vladoiu, 2011) and are best examples of OA courseware. OER started as a movement by educators worldwide. During the last two decades, the advancement of information and communication technologies and web applications brought the OER into limelight. The global advances have brought changes in higher education field. Architecture technical education is not an exemption for OER development in terms of its role in developing architects. OERs are understood to be important means of leveraging educational practices, teaching aids and methods that help equip academia and staff with the competencies, knowledge and skills to participate successfully in the knowledge-based society. OERs have been extensively used by some educational institutions which have recognized that educational resources could be freely available for students and teachers to use, reproduce and distribute. Hence, OERs appear to be one of the key solutions for creating dynamic educational resources (OPAL, 2011).

3.4 OA Resources in Architecture

The benefits of OA reaped by many such as authors, readers, teachers, students, libraries, journals publishers, funding agencies, government, policy makers and citizens. OA journals provide free access to scholarly content with reduced costs. The following are the several well-known architectural OA courseware, institutional repositories, image databases, and journals:

3.4.1 Open Courseware

- **MIT OpenCourseWare** (http://ocw.mit.edu) of Massachusetts Institute of Technology (MIT), provides a class room lectures and snapshot of courses taught at a particular time. It offers lecture notes, problem sets, reading lists, syllabi tools and simulations as well as video and audio lectures.
- **OpenLearn Initiative** (http://openlearn.open.ac.uk) of UK Open University (http://ocw .usu.edu) is organized in two ways: the LearningSpace which offers 5500 learning hours of materials for learning and a LabSpace where content can be downloaded, re-mixed, adapted and reused.

- **EduCommons** of Utah State University allows institutions to easily publish OCW content via an instant software package designed for efficient production of course materials.
- **Connexions** (http://cnx.org/) of Rice University, attempts to bring the content, communities and software together in one intuitive for dynamic teaching and learning environment.
- **Open Learning Initiative** (http://www.cmu.edu/oli/) by Carnegie Mellon University creates online learning environment such as intelligent tutoring systems, virtual laboratories, group experiments and simulations and frequent opportunities for assessment and feedback.
- **Multimedia Educational Resources for Learning and Online Teaching**, MERLOT (http://www.merlot.org/merlot/index.htm) of California State University Centre for Distributed Learning is a user-centred, searchable collection of peer reviewed, online learning materials, catalogued by registered members and a set of faculty development support services.

3.4.2 OA Audio-Visual and Image Resources

- **On Architecture** (http://www.onarchitecture.com/OnArchitecture): It is an online audio-visual service providing a synthetic, deep and detailed panorama of the world's main authors, works, experiences and videos on building.
- **Online Video Lectures** (http://videolectures.net/Top/Architecture/Video_lectures_online): This is an extensive and heavily illustrated lecture notes covering Cairo from the time of Alexander until the twentieth century.
- **Gothic Past Site** (http://www.gothicpast.com/)**:** The archive contains images of Irish medieval architecture and sculpture.
- **Gottscho-Schleisner Collection** (http://www.loc.gov/pictures/collection/gsc/): Comprises of over 29,000 images primarily of architectural subjects, including interiors and exteriors of homes, stores, offices, factories, historic buildings, and other structures.
- **Digital archive of American architecture** (http://www.bc.edu): It covers architecture in America from the seventeenth century to the present. It consists of approximately

1,500 digitized images of American architecture (280 buildings) plus explanatory material was originally constructed.

- **Ordnance Survey OpenData** (Digital Map Data)**:** (http://www.ordnancesurvey.co.uk/business-and-government/): This provides access to a selection of mapping datasets available for Great Britain. It offers 12 quality assured, regularly updated products that enable to analyse our data, build interactive websites and create stunning visuals - and they're all free.
- **Google Earth** (http://www.google.com/earth/): With Google Earth's rich, geographical content, we are able to experience a more realistic view of the world. It allows travel the world through a virtual globe and view satellite imagery, maps, terrain, 3D buildings, and much more.
- **Scran** (http://www.scran.ac.uk/)**:** It is a charity & online learning resource base with over 370,000 images & media from museums, galleries, and archives. Search the whole resource base for free and buy downloadable images at publishing quality.

3.4.3 *OA Databases and Repositories in Architecture*

Some of the databases and repositories in the field of Architecture include: American Landscape and Architectural Design 1850-1920 (http://memory.loc.gov); OpenTheses.org (http://www.opentheses.org/) It is a free repository; Architec tour (http://architectour.net/); Archivsystem Ask23 (http://www.ask23.de/archivsystem/information.html**);** ArchNet (www.archnet.org); FAMENA (Faculty of Mechanical engineering and Naval. Architecture, University of Zagreb) PhD Collection; AHO's OA repository-Architecture and Design Open Research Archive, ADORA (http://www.aho.no); Research Art Design Architecture Repository, RADAR) (http://radar.gsa.ac.uk/); OpenBuildings (http://openbuildings.com/); Digital Library and Archives (http://www.lib.vt.edu/); Religious Architecture and Islamic Cultures; (http://ocw.mit. edu); Bergen Open Research Archive (BORA) (https://bora.uib.no/discover); Planning Architecture Design Database Ireland (PADDI) (http://www.paddi.net/); UN-HABITAT E-Resources (http://mirror.unhabitat.org); Research in Architecture, Design and Conservation**,** READ **(**http://www.re-ad.dk/en/); Great Buildings (http://www.greatbuildings.com/); Database of Houses (http://www. dicamillocompanion.com/Houses_database.html); Style park (http://www. stylepark.com/);

CABE (http://www.cabe.org.uk/home); and CIC Historic Campus Architecture Project (HCAP) (http://puka.cs.waikato.ac.nz/cgi-bin/cic/library).

3.4.4 OA Journals in Architecture

Some of the journals that allow open access to their content are:

- Buildings (http://www.mdpi.com/journal/buildings/)
- Land (http://www.mdpi.com/journal/land/)
- Field (http://www.field-journal.org/index.html)
- Journal of Architectural Engineering Technology
- Frontiers of Architectural Research (http://www.journals.elsevier.com/frontiers-of architectural-research)
- Enquiry(ARCC journal of Architectural Research) (http://www.arcc-journal.org/)
- International Journal of Architectural Research (http://www.archnetijaronline.org/)
- Archnet (http://archnet.org/#resources)
- Architecture and the Built Environment (http://abe.tudelft.nl/)
- PLAN (http://sap.mit.edu/resources/publications/)
- Journal of Architecture and Built Environment (Dimensi) (http://puslit2.petra.ac.id/ ejournal/index.php/ars/index)
- FootPrint (http://www.footprintjournal.org/issues/current)
- Architectural Histories (http://journal.eahn.org/)
- Architecture Research (http://www.sapub.org)
- DesignCurial (http://www.designcurial.com/folksonomy/blueprint/)
- Science Journal of Civil Engineering & Architecture (http://www.sjpub.org/sjcea.html)
- International Journal of Designs (http://www.ijdesign.org/ojs/index.php/IJDesign/)
- International Journal of Architecture, Engineering and Construction (http://www. iasdm.org/journals/index.php/ijaec/index)
- Journal of Asian Architecture and Building Engineering (http://www.aij.or.jp/eng/jaabe/)

- International Journal of Architecture and Urban Development **(**http://ijaud.srbiau.ac.ir/**)**
- Landscape Review (http://journals.lincoln.ac.nz/index.php/lr)
- Places: Forum of Design for the Public Realm (http://places.designobserver.com/ journalarchive.html)
- American Journal of Civil Engineering and Architecture (http://www.sciepub.com/journal/ ajcea)
- Journal of Civil Engineering and Architecture (http://www.davidpublishing.com)
- ActaTechnicaNapocensis: Civil Engineering & Architecture (http://constructii.utcluj.ro/ ActaCivilEng/)
- The Built & Human Environment Review(http://www.tbher.org/index.php/tbher)
- Journal of Technology for Architecture and Environment (http://www.fupress.net/index. php/techne)
- METU Journal of the Faculty of Architecture (http://jfa.arch.metu.edu.tr/content/view/12/1/)
- Architecture media politics society (http://architecturemps.com/)
- Architecture Australia (http://architecturemedia.com/magazines/architecture-australia/? view=backissues)
- Civil Engineering and Architecture (http://www.hrpub.org/journals/jour_info.php?id=48)
- Focus: Journal of the City and Regional Planning Department (http://digitalcommons. calpoly.edu/focus/)
- City, Territory and Architecture (http://www.cityterritoryarchitecture.com/)
- Open Urban Studies Journal (http://www.benthamscience.com/open/tousj/)

4. CONCLUSION

Like other OA resources, architecture OA resources come in a variety of designs, formats, and content. Each of these resources has both strengths and weaknesses; it is important to remember that these resources are all valuable in that they provide a free and simple way to access authoritative information. There are a growing number of architecture OA

educational resources and more institutions are sharing their digital learning resources over internet freely and for the benefit of institutions, educators and certainly learners. In fact, architecture OA resources on public domain are a powerful tool to bridge the gap between formal education and industry. Furthermore, these resources are ideal to meet a range of different learners' requirements, thus encouraging a more inclusive in architecture education. Finally it should be noted that OER is still in its infancy, practices and technologies are rapidly changing. Education institutes and professional organizations should focus more on OA as well as flexible online educational resources in order to able to develop a knowledge society.

REFERENCES

1. American Library Association. http://www.ala.org/acrl/publications/whitepapers/principles, accessed on 07 July 2014.
2. BOAI (2002). Budapest Open Access Initiative. Open Society Institute. Budapest. Retrieved from www.soros.org/openaccess/, accessed 8 June 2014.
3. Hanley, G. (2005). Enabling open education with MERLOT. Open Education Conference. Retrieved from http://cosl.usu.edu/media/presentations/opened2005/OpenEd2005-Hanley .ppt accessed 12 June 2014.
4. Lynch, C. (2003). Institutional Repositories: Essential infrastructure for scholarship in the digital age. ARL Bimonthly Report 226. Retrieved from www.arl.org/newsltr/226/ir.html (accessed 14 June 2014).
5. Open DOAR (2010). Directory of OA Repositories. Retrieved from www.opendoar.org accessed 12 June 2014.
6. OPAL (2011). Guidelines for open educational practices in organizations-OEP guide. Open Educational Quality Initiative.
7. Vladoiu, Monica (2011). State-of-the-art in open courseware initiatives worldwide. *Informatics in Education*, **10**(2), 271–294.

BIBLIOGRAPHY

1. Abelson, H. (2008). The creation of OpenCourseWare at MIT. *Journal of Science Education and Technology,* **17**(2), 164-174.
2. Anderson, T. (2009). Are we ready for open educational resources? *In* International Council for Open and Distance Education 23rd World Conference. Retrieved from http://www.slideshare.net/terrya/icde-disruptive-o-e-rs

3. Butcher, N. (2011).A basic guide to open educational resources (OER). *In* A. Kanwar & S.Uvali´c-Trumbi´c (Eds.). Vancouver and Paris: COL and UNESCO. Retrieved from http://www.col.org/oerbasicguide

4. Downes, S. (2007). Models for sustainable open educational resources. *Interdisciplinary Journal of Knowledge & Learning Object*, **3**, 29-44. Retrieved from http://ijklo.org/Volume3 /IJKLOv3p029-044Downes accessed 8 June 2014.

5. Frandsen, T. F. (2008). The integration of OA journals in the scholarly communication system: three science fields. *Information Processing & Management*, **45**(1), 131-141.

6. Smith, M. and Casserly, C. (2006).The promise of open educational resources. *The Magazine of Higher Learning*, **38**(5), 8-17.

7. Wiley, D. (2006). Open sources, openness, and higher education. *Innovate*, **3**(1), http://innovateonline.info/pdf/vol3_issue1/Open_Source,_Openness,_and_Higher_Education.pdf accessed 16 June 2014.

SCIPR-2014: Paper presented in the National Conference, pp. 96-100

Plan for Setting up Institutional Repository at Mahatma Gandhi *Antarrashtriya* Hindi *Vishwavidyalaya*, Wardha

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ABSTRACT

This paper focuses on plan for setting up an Institutional Repository (IR) at MPRS Central Library, Mahatma Gandhi *Antarrashtriya* Hindi *Vishwavidyalaya*, Wardha. Diverse issues, advantages and complexities involved in creation and development of IR. Administrative policies, funding for hardware and software, technical possibilities, legal and copyright obligations played major role to encourage, preserve and protect intellectual research output of the university.

1. INTRODUCTION

Academic libraries are cross roads. Shrinking of library budget and inflation of periodical publications prices make management of the libraries costlier. Hence, libraries need to encourage alternative efforts and to promote scholarly communication and its best usage of scholarly journals communication and publication. To meet the mission, majority of libraries have been started modernisation and attract new technology not only to enrich the system but also make their resources and services effectively and available openly. In order to encounter the challenges, central library of Mahatma Gandhi *Antarrashtriya* Hindi *Vishwavidyalaya* (MGAHV), Wardha plans to initiate IR for not only to capture and preserve local resources of its own but also make a platform for accessing resources openly. Hence, IR is one of the proper and useful technologies that libraries adopt for managing and showcasing institutional research output openly. "IR provides ways of sharing knowledge and new opportunities for institutions to use their intellectual capital as a more effective indicator of academic quality (Vishala and Bhandi, 2007)." The main objectives of the paper are as follows:

- To advocate local resources especially Hindi literature and access them openly.

- To utilize and preserve resources effectively and perpetually.
- To increase university visibility.
- To reduce university operational costs.

2. CENTRAL LIBRARY OF MGAHV – BRIEF HISTORY

MGAHV or Mahatma Gandhi International Hindi University (A Central University), Wardha, Maharashtra was established to fulfil a dream of Mahatma Gandhi, the father of the nation. It was created by an Act passed by the Indian Parliament in 1997. Section-3 of the Act mandates special and unique responsibility to the University to enrich Hindi language and literature by teaching and research and make it capable of becoming a World language in the real sense of the term. The university has excellent campus facilities to create academic and research environment.

MGAHV has a central library and holding 1,17,770 books, 70 number of print journals both national and international. It provides electronic resources to all its users. It is an active member of UGC Infonet consortium to share e-journals mainly in the field of social sciences, literature and linguistics. The library plans to procure e-books of various kinds to meet academic and research interest. Library has also in the process of digitising some of rare books, manuscripts and institutional research output of faculty, researcher and staff. The university has already MoU with INFLIBNET for digitisation process and digital library development program as well as ETD development.

3. INSTITUTIONAL REPOSITORY

The term IR is a warehouse of an academic institute that captures and preserve and disseminate intellectual research output of the faculty, researchers and students. Many academic libraries are actively involved in building IR to digitise and publicise their own collections such as books, papers, theses, and other works and make it public available. “IR is created for the purpose of managing and disseminating of digital materials access to members of the university community (Lynch, 2003)”. However, with limited constrains, IR become popular in not only communicating science but also its coverage of various disciplines such as arXiv- physics, mathematics etc., EconPapers-economics, LingBuzz-English, CogPrints- literature on Psychology, OAOB (Open Access to Oriya books) etc.

According to Jones (2006) IR is one of the best choices for minimizing cost involved in subscribing and renewing scholarly journals.

In India, various organisations like University Grants Commission (UGC, 2005) has developed a policy document on building university level IR. National Knowledge Commission (NKC, 2007) strongly advocates Open Access (OA) to public-funded research literature and recently has taken initiative for building nationwide IR. Bangalore declaration (2006) drafted a model National OA Policy for Developing Countries which also supports this view and advocates OAIR. Some professional associations and societies like DELNET and INFLIBNET are also involved in modernization of libraries, training and setting up the IRs.

As suggest by the many organisations, to setting up IR at university level is very much essential for showcasing institutional output openly. The following are the recommendations for setting up IR at university level.

4. RECOMMENDATION FOR SOFTWARE AND HARDWARE

Usage of software and hardware is one of the major concerns that library professionals need to pay attention to expose themselves and narrow gap of digital divide. Some of the important software and hardware recommended for setting up IR at central library of MGAHV, Wardha.

4.1 Software

Selection of software is one of the crucial decisions to manage and operate IR. Dspace, Eprints and Fedora and ETD-db are globally tested and recommended open source software for creating and managing IR effectively. These are open source, user-friendly and allow interoperable simultaneously. Various other software and databases like Java, MySQL, Apache and mod Perl etc. are essential for setting up IR. These open source software also allow access to different kind of collections, communities and for different purpose such as storage, preservation, accessibility and sharing digital content.

4.2 Hardware

A minimum configuration is required for IR computer server with at least a capacity of 200GB hard disk for storage. Linux platform is preferable choice for running OS and

creating IR, however, windows XP is also reliable and user friendly. A reasonable network with internet and high-speed bandwidth is to be needed to implement IR at university level. UPS for power back-up supply. Selection of hardware is purely relying on its efficiency and quality that increases durability and managing IR server nicely.

5. TECHNICAL AND ADMINISTRATIVE ISSUES

There are issues involved technically in creating and managing IR mainly metadata, interoperability, OAI-compliant**,** digital formats (postscript, pdf, ppt. html etc.), digital objective identifiers for reference to the digital objects, handling number system for archiving etc. Policies, procedures for creating, capturing digital content, self-archiving, hosting content on internet/intranet platform, submission of author version of pre-print and post-print, mandate issues, restrictions etc. are important decision making issues to be considered. A platform for searching and retrieving content is also major concern. According to Bergman (2001) “electronic prints are hard to find through a search engine because they may be ‘hidden in the deep web’ and therefore they cannot be found”. Advocacy, promotion and copyright are also crucial issues for proliferating and protecting scholarly content.

5.1 Advantages

- Research finding available publicly.
- Capturing and digital preservation of documents for longevity.
- Self-arching easily.
- Increase visibility and reputation of both institution and authors.
- Customisation of the software easily.
- Compatible and Interoperable easily.
- Unique interface and searching user-friendly.

5.2 Disadvantages

- Hardware is costlier and its maintenance annually.
- Skilled and trained staff for handling servers and software.
- Quality of paper peer-review system.

- Copyright options.
- Security and hacking.

6. CONCLUSIONS

As recommended by UGC, IR at university level makes a change for capturing, preserving and showcasing intellectual research output. It is not only reducing the university investments towards purchase of print and electronic resources of the library but also increasing reputation, prestige, visibility of the university and global recognition of authors as well. Hence, setting up IR at central library of MGAHV is one of the viable and useful options for accessing rare collections in Hindi Literature, manuscripts and other relevant documents.

REFERENCES

1. Bergman, K.M. (2001). The Deep web: Surfacing hidden value', *Journal of electronic Publishing*, vol. 7, no. 1, http://www.press.umich.edu/jep/07-01/bergman.html (Accessed 22 April 2006)
2. Jones, Rea (2006) *The Institutional Repository*, and Oxford: Chandos Publishing
3. Lynch, C. (2003). Institutional repositories: essential infrastructure for scholarship in the digital age. ARL Bimonthly Report, 226. Available at: http://www.arl.org/newsltr/226/ir.html (accessed on 20 June 2014).
4. UGC (2005). Electronic Thesis Online (India): UGC (Submission of Metadata and Full-text of Doctoral Theses in Electronic Format) Regulations, 2005.
5. Vishala, B K and Bhandi, M K (2007). Building Institutional Repository (Ir): Role of the Library. 5th International CALIBER -2007, Panjab University, Chandigarh, 08-10 February, 2007 © INFLIBNET Centre, Ahmedabad pp. 631-640.

Intellectual Property Rights

Scholarly Communication & Intellectual Property Rights

SCIPR-2014: Paper presented in the National Conference, pp. 103-120

Invited Paper

Copyright in Open Access Era: Dealing with Plagiarism

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ABSTRACT

This paper briefly discusses about the copyright law and the monopoly of commercial publishers on controlling the intellectual property of authors, with examples, for reaping profits. It discusses efforts of scientific community in sphere heading Open Access (OA) movement, its successful growth, the efforts of commercial publishers in hijacking OA by joining it, and the efforts of R&D institutions in mandating OA to indigenous research. The paper dwells at length on plagiarism and the reasons, growth of digital information, impact of Internet and loss of revenues due to piracy. It discusses important plagiarism cases including films in international and national levels. The paper suggests remedies to contain the plagiarism in academic and research institutions including provision of plagiarism checking software.

1. COPYRIGHT

Copyright is intended to reward the creators of intellectual property rights (IPRs) through exploitation of their creations and encourage and motivate them to make efforts to further pursue intellectual works. For this purpose Copyright Law was passed by the Indian Parliament in 1957. As India is a signatory to the Berne Convention, Universal Copyright Convention and many agreements like Madrid, The Hague, etc, India has to honour the publications copyrighted in the Member countries of these conventions. Taking note of international developments (read GATT, TRIPS and WIPO) and to counter the impact of information and communication technology and Internet, the Indian Copyright Law was amended from time to time, the latest amendment being in 2012. Some salient features of the Amendment are given in the following paragraphs (see Moorthy, 2011a, for a detailed discussion on intellectual property rights in digital environment).

But with the commercial publishers stepping in to communicate the new ideas and laboratory successes through research articles, copyright became an instrument in their hands to exploit the authors (of their intellectual output), institutions (from the infrastructure

facilities they created spending huge budgets), Government (from liberal grants extended for research) libraries (of their budgets) and common public (tax payers). The publishers exploit the institutions by constantly increasing prices of the printed and digital information and reap benefits from the sale of these materials in the form of books, journals, databases, monographs and so on. There was an increase of 15% in the number of printed journals in the field of biological and agricultural sciences during 2007-2011 while in the field of medicine/health science this increase is 19%. Ironically, during the same period, the average subscription costs were escalated by 26 and 23% for biology and medical journals, respectively (National Institute of Health, 2012). Outsell Marketing Forecast (Outsellinc.com, 2011) estimated that the S&T journal market will grow by 3.3% (from the current 3%) and medical journals will have a growth rate of6.3% (from 4.5%). The scenario of journals in other fields is similar.There is no uniformity in pricing of journals across various subject fields. For example, in 2012, the annual subscription cost of *Tetrahedron*, a chemistry journal is around US$20,269, and that of the *Journal of Mathematical Sciences* is around US$2010 (Academic publishing: open sesame, 2012).

As per the Association of American Publishers (2010), about 25,000 peer-reviewed journals in the field of Science, Technology and Medicine (STM) fromabout 2000 publishing housespublish more than 1.5mn articles annually. Publishers do not spend anything on R&D.The business of selling results of scientific community and researchers, submitted free of charge by authors and vetted for nothing by experts in the field by way of peer review, is immensely profitable for the publishers.To increase profit margins commercial publishers resort to bundling of subscriptions (Big Deal); it may be bundling of print with online or bundling of many titles together as a package or adding new titles in the package whether they are needed by the subscribers or not (Young, 2009). Libraries are discouraged to select individual titles due to pricing differential. Elsevier, Springer and Wiley, three major publishers, monopolise the STM journal market withElsevier having three times the market share of its closest competitor(Young, 2009). National Science Foundation in 2006 estimated the revenues of scholarly publishers as US$10bn (approx) per year; in contrast the governments spend US$ 1,000bn (approx) per year (NSF, 2006).For instance, the pre-tax profit of Elsevier Science, a Scientific publisher of periodicals, for the year 2003, is US$2bn or about Rs. 9500 Crore (Balasubramanian, 2004).In 2010, Elsevier made a £724mn ($1.16bn) profit on revenues; in 2011 it has made

a profit of$786mn on revenues of US$2.1bn, a margin of 36%, because of the huge difference in the costs incurred in publishing and the subscription cost of the journals (Academic publishing: open sesame, 2012). In 2012, Elsevier had a margin of 38% on revenues of £2.1bn ($3.2bn) while Springer, the second-biggest journal publisher, made 36% on sales of €875m ($1.1bn) in 2011).

The copyright regimes are publisher-friendly who have best resources to *buy* Senators in USA (remember Mark Twain!) and find ways and means to think new legislations. It is always a win-win situation for the publishers. This is the situation rightly visualized by Walt Crawford (1998) who observed that in an all-digital age, things would be different and I see no likelihood that the differences would favour libraries. What an irony!

In 2010 DESIDOC tried to create DRDO Knowledge Repository; it collected over 300 research papers published in various R&D periodicals. After analysing the titles where these papers were published, about a dozen Publishers were approached for obtaining permission to digitize (scan) and host on the DRDO web site. DESIDOC did not receive any replies from half of them; those replied demanded royalties—one went further by asking payment for as many copies as DESIDOC makes, thinking that photocopies are made. Ultimately after 18 months of *negotiations* the project was shelved. The same was repeated recently with the Raman Research Institute (RRI), Bengaluru. The RRIis creating Institutional Repository (IR) at RRI and intended to host the research papers ofProf C.V. Raman in the IR. These papers are old and some are published a few decades ago. The Librarian wrote to publisherseeking permission to deposit the full texts of research papers of Prof C.V. Raman published in some of their journals. The publisher refused permission for uploading papers written several decades ago! When RRI requested the publisher again and also publicised the incident through many electronic discussion groups, the publisher gave permission to RRI to upload those papers (personal mail received through lis-forum).Although the publisher had the legal right to deny permission due to copyright transfer resorted to before publishing, denying permission to decades old papers sans logic and shows the stranglehold of publishers on research papers.

In the case of digital or electronic publications, the library does not own it but is permitted to use the e-publication; ownership is deliberately expensive and less economical. Many groups (for example, Association of American Universities) are demanding Copyright exemption of digital versions of scholarly journals; maps, newsletter

archives and some databases. Their argument is that these materials are valuable mostly for their facts and so are not copyrightable. But we know the *big brother* attitude of USA, which one side was supporting OA, but tried to curtail the use of information with Bills like Research Works Act, Protection of IP Act, and Stop Online Piracy Act, which were shelved or withdrawn due to the concerted movements against them by the academic and intellectual fraternity.

All the foregoing shows that publishers have effectively a monopoly over the distribution of scientific research, since authors transfer copyright to them and libraries have little choice but to subscribe to the journals. *If at a later date, authors who want to use their own research data, even a figure or a table, in future publications, they must obtain permission to do so, unless they had negotiated this right in the original publication agreement*. If not previously negotiated and retain copyright, academic faculty also must request permission to include copies of their own papers in the curricula of courses or syllabi. Surely publishers are in control!

2. OPEN ACCESS

Intellectuals and intelligent people created platforms to get rid of the shackles of copyright, perpetual dependency, digital rights and other monopolistic policies of publishers and software companies through the Open Access (OA) and Open Source Software movements. The primary objective of OA is to remove barriers like high cost, monopoly, permissions, and controls that are prevalent in traditional subscription based models, and allow open access to scholarly literature. Those with Internet connectivity can freely to download, copy, share, and distribute the OA resources without any restrictions. Although OA initially meant to cover peer-reviewed journal articles, with the passage of time, other scholarly content like books, data, and teaching resources were also taken under its broader definition. It is a well-established fact that OA publications are more visible and get cited more (Harnad, 2004; Moorthy, 2011b; Xia and Nakanishi, 2012 and various authors).

Starting from *Nucleic Acids Journal* which switched from subscription based to open access in 2004, nearly 90% of high energy physics field will be accessible from over a dozen journals.The Sponsoring Consortium for Open Access Publishing in Particle Physics (SCoAP3) has negotiated deal with journals and coordinating with institutions and countries that publish papers in high energy physics. Research Councils in UK have amended their

rules for research funding; they changed the rules from April 2013 to the effect that the results of studies funded by them are to be published in journals that make them available free—preferably immediately, but certainly within a year (*The Economist,* 2013). Similarly in USA the government-financed research requires to be freely accessible after six months of publication. No research paper written by a scientist on the payroll of the US Government (NASA, NIH labs, etc.) is copyrightable. The European Union is moving in the same direction (Economist, 2013) and by other countries and funding agencies. While 75% of compliance of NIH grants allow OA to around 90,000 papers each year, in India, in 2009, nearly 16% of papers by researchers were published in OA journals more than global average of 8.5-10% (*TheHindu,* 03 Nov 2012*)*. Open access has come a long way from Budapest OA Initiative of 2001.

In our country, most of the R&D carried out—be it in universities, R&D institutions or others, is with government funding, with more than 35% coming from Defence R&D Organization followed by departments of S&T, Atomic Energy, Space, Biotechnology and CSIR, UGC, ICAR, ICMR, etc. Why the government mandate all these research to be published in OA journals? Such legislation is needed for India. However, authors and their institutions should be free to choose the journal where they want to publish their papers.

The National Institute of Technology, Rourkela is the first academic institution in India that mandated OA to all its publications including research papers. Among organisations CSIR and ICMR mandated OA; all CSIR journals published by NISCAIR and the *Indian Journal of Medical Research* of ICMR are available in OA; CSIR scientists will neither publish their research in nor join as reviewers or editorial board members of journals from the publishers having non-transparent business model (oa.csirexplorations.com). Now DST and DBT are on the way towards espousing OA Policy. Many academic and R&D institutions have established IRs hosting their intellectual and knowledge capital providing open and free access to all. There is a need that the Govtas well as the private funding agencies mandate publishing the outcome of funded R&D in OA journals. Library professionals also conduct awareness programmes, explain the advantages of OA research including increased visibility and citations, and encourage authors to publish in peer-reviewed OA journals, retain copyright for self- or institutional-archiving, and take efforts to createIRs in their institutions. This would ensure wider access to the scientific

research and further accelerates researchthereby facilitating creation of intellectual capital for the institution and knowledge base for the country.

As per the estimates of Outsell, OA journals generated US$172m in 2012; up by 34% from 2011 and is expected to reach US$336m in 2015. As soon as they sensed that the OA research is also profitable, many commercial publishers jumped in to the band wagon by setting up OA subsidiaries. The biggest is BioMed Central, part of Springer which in 2013 published its 150,000th paper and also launched its 250th periodical. Nature Publishing Group (NPG) that owns 81 journals besides *Nature,* launched *Scientific Reports* as a fully OA journal while *Nature Communications* (online-only) as a partly OA journal. NPG also bought a majority stake in Frontiers, a Swiss OA platform with 30 titles in 14 scientific fields. In combination, NPG and Frontiers publish 46 open-access journals, and 7,300 freepapers a year.In the past year Elsevier has more than doubled the number of OA journals to 39 Elsevier journals like *Cell* and the *Lancet* that usually charge readers pay a publication fee, makes a paper available free immediately(*The Economist*, 2013). The Taylor & Francis' iOpen Access, now known as Open Select, covers around 500 journals in diverse subject fields. Springer through its Springer Open covers all disciplines based on author pay model and publishes articles under Creative Commons attribution license (Springer, 2012).

There are nearly three million articles available in PubMed Central database. Besides papers arising out of NIH-funded and Wellcome Trust-funded research each year, more than100,000 papers are deposited voluntarily by the publishers. It has been reported by American Association of Publishers (AAP) that the PubMed Central database and others such resources are being misused, especially in India and China. It also stated thatUS publishers collected evidence of unauthorized practices by some Indian and Chinese companies for mass downloading of articles and are reselling and re-distributing them. This is highly unfair and also against the tenets of OA and needs to be prohibited and discouraged. There are predatory OA publishers, who for their own profit unethically exploit the Author Pays model to publish articles in OA (Beall, 2011). They send spam mails via professional email lists, accept low quality articles with dubious or no peer review system.These journals from predatory publishers are to be avoided by authors and users as well.

3. PIRACY AND PLAGIARISM

3.1 Growth of Digital Content and Plagiarism

Internet has triggered the communication across the globe in unbelievably short time. According to an estimate, 20bndevices will be connected to Internet by 2020.Indian Internet economy contribution to GDP is set to grow from 30bn to 100bnby 2015. India Internet economy is larger than service sectors like hospitality, utility, etc. India has the third longest Internet base in the world with 120mn users; by 2015 it may reach 3030 to 370mn users. Globally 15-20% use wireless technology to access Internet in India it is 55%(USTR Special Super 301Report 2014 quoting McKinsey report).It is estimated that the digital information created and replicated in 2011 across the world may reach 1.8 Zetabytes (EMC Corporation, 2011). It has been predicted that in terms of quantity, the information created from the dawn of human language till 2003 was created in every 48 hours in 2010 and the same volume of information will be generated in every 60 minutes by 2020 (Freeland, 2011).

There is a clear link between the digital information growth in leaps and bounds and the increased incidence of Plagiarism in recent days. About 8 papers submitted for this Conference were returned to the authors due to the usage of cut and paste (or lifting and fitting???) technology; they just copied from Internet and made the papers. Earlier plagiarists need to rewrite or retype the paper being plagiarised. Now Internet provides easy access to articles, e-books, reports and other texts, all in digital form. Every time we use, borrow or copy a phrase or paragraph, it is our responsibility to give credit to the original author and work by properly citing sources.

3.2 Revenue Loss due to Piracy

The annual loss world over from piracy of books, music, films and software runs to billions of dollars. The International Federation of the Phonographic Industry (IFPI) has released a latest report (for 2011) which says that one among four internet users download music illegally by resorting to piracy. Spain and Brazil were reported to have the highest rate of Internet users getting their music from illegal sites (45%). Internet users across the globe resort to illegal downloads from unauthorized websites. Half among these use peer-to-peer (P2P) networks.A study concluded by International Chamber of Commerce and the Federation of Indian Chambers of Commerce and Industry published in 2013 observed that

rights holders in 2012 suffered loss of sales in India amounting to 21.7% or approximately $11.9 bndue to counterfeiting and piracyproblems. According to the study collectively, the Indian government's economic loss tied to these illicit activities totalled approximately $4.26 bn.

In 2009 the commercial value of software theft exceeded US$51bn which accounts that for every $100 worth of legitimate software sold in 2009, an additional $75 worth of unlicensed software was also deployed in the market.As per a report the software piracy losses in 2010 was US$59bn with emerging economies including China, Russia, India and Brazil account for more than half of the money lost to piracy. A new Microsoft-commissioned study also highlights dangers for those that use counterfeit software that, the chances of infection by unexpected malware are one in three for consumers and three in 10 for businesses (Microsoft, 2013).

According to a book piracy study by Bailey (2010)online book piracy costs US publishers nearly $3bn. Using a well-established US government model and the latest copyright piracy figures, another study by IP Institute (2012) concludes that, each year, copyright piracy from motion pictures, soundrecordings, business and entertainment software and video games costs the US economy $58bn in total output, costs American workers 373,375 jobs and $16.3bn in earnings, and costs federal, state, and local governments $2.6bnin tax revenue. The major US motion picture studios lost $6.1bnin 2005 to piracy worldwide (with 80% from overseas and 20% from U.S).

3.3 Plagiarism

Science and technology progress through research which in turn uses the findings of other researchers who have published their results as journal articles, reports, books, conference papers/proceedings, patents, etc. It is cumulative in nature. As a mason uses bricks and mortar to make a house, a researcher uses references to build evidence in defence of hypothesis or theory to support (or negate in some cases) the final results. By citing references in the text the researchers are paying their intellectual debts to the authors of earlier works that are being used in research (see Moorthy and Karisiddappa, 1997 for a detailed discussion).Many times one comes across large portions of published (copyrighted) material are used with impunity without acknowledging its authors. This is known as plagiarism and can be defined as intentional or unintentional copying or using of

other copyrighted works whether published or unpublished, without acknowledging the original work. The term is derived from *Plagiarius*, a Latin word meaning a kidnapper.

3.4 Plagiarism: Foreign Scenario

A Google search on 11 July 2014 on *scientific fraud* resulted inabout 90,00,000results manifesting the seriousness of the issue. During the 1980s, a trend better known as publish or perish syndrome, there was a rat race for publishing research papers to get project funding, new projects, appointments and promotions. A number of cases of professional misconduct and academic dishonesty made headlines; these include the case of John Darsee who was responsible for data fabrication as well as errors/discrepancies on 16 of 18 full-length research articles, and an unknown number of over 100 additional abstracts and book chapters (Wikipedia). He was eexposed as his data did not agree with those from other centres. He published 171 papers in 6 years with non- existing patients,co-authors; 'invented' data in top journals with incredible observations! There was Congressional hearing; he was exonerated. There is a case of an Iranian doctor who plagiarised over 40 papers, mainly of research papers published in languages other than English in the corners of world. There are many instances where researchers have resorted to unethical means like reproducing papers presented in less known languages or journals by changing names of research institutes, and falsifying data.

In recent times many plagiarism scandals broke out that resulted face loss to people who were holding high offices. These include Karl-Theodor zu Guttenberg, Farid Zakaria, Annette Schavan, Pal Schmidt, and Victor Ponta, and C.N.R Rao in India. The most publicized plagiarism case involved former German Defence Minister Karl-Theodor zu Guttenberg**.** His PhD was revoked in 2011 for the 197 direct translations in his 215-page thesis and also as more than one-fifth of it was copied from other sources without proper attribution or credit to them. He resigned as Defence Minister in 2011. More than a fifth of the text was plagiarized. Pal Schmidt**,** the then President of Hungary was accused that 180 of the 215 pages of his 1992 doctoral thesis, titled An analysis of the programme of the modern Olympics, had been lifted from a 1987 manuscript by Bulgarian sports researcher Nikolay Georgiev. After a formal investigation, based on the report of a five-member fact finding Committee, the University Senate withdrew PhD and on 2 April2012 resigned as President (Wiki).A panel of Bucharest University academics said July 2012 that Romanian Prime Minister Victor Ponta plagiarized much of his doctoral thesis of 2003 on International

Criminal Court at the Bucharest Faculty of Law. Ponta said his that his only error was to list sources in his bibliography rather than give credit in footnotes.(*TheHindu,*20 August2012).

Farid Zakaria is an international affairs expert, regular column contributor to *Time Magazine, Washington Post,* who delivers lectures at World Forums and Harvard. He was suspended after it was found that hereproduced in verbatim an essay on gun control for *New Yorker* by a Harvard University Professor without attributing to the original source. After apologies his suspension was revoked by *Time & CNN*.It is dishonesty trying to succeed by cutting corners may be due to lack of time, knowledge or articulation powers (*The Hindu* (20 October 2012). Another case of Farid Zakaria delivering identical addresses at a graduating ceremony in Harvard and a commencement event at Duke University also came after *Time* scandal.The latter is known as self-plagiarism or multiple publication of the same content with different titles and/or in different journals is sometimes also considered misconduct. Now scientific journals explicitly ask authors not to do this. It is also referred to as *salami* (i.e. many identical slices). This also includes publishing the same article in a different language.

Internet users and bloggers are seeing the plagiarism as fraud. People trying to spot instances of plagiarism published questionable passages from prominent figures' dissertations online. The passages in question generally involved unattributed quotations that could be found in other works. Although mild cases might be chalked up to citation errors, people were looking for evidence that theft of intellectual property had occurred. In 2012, a blogger alleged plagiarism in the PhD thesis *Character and conscience — Studies on the conditions, necessities, and demands on the development of conscience in the present day* by Annette Schavan, former Education Minister of Germany. The Investigators of Heinrich Heine University, Düsseldorf, her Alma Mater, found over 60 instances in the dissertation without citing the source (i.e., used other people's text to a significant degree, without citing sources).On 5 February 2013, the University revoked her doctorate degree and on 9 February 2013, Annette Schavan had resigned as minister (*The Hindu,*10 February2013).

Besides these, a number of high value law suits were filed in various countries. Apple and SamSung are in legal battle with 50 law suits spread over 10 countries over alleged patent infringements. Apple filed against SamSung in British High Court on copyright infringement of its designs. Apple lost tablet copyright appeal against SamSung. The Court

ruled that despite some similarities, SamSung did not infringe Apple iPad design (TOI, 2012). In USA, Apple fileda law suit on SamSung saying it copied iPhone's front, back and home screen styles. It won the suit and was awarded $1bnin damages for infringement of 6 of 7 Apple iPhone, iPad patents and banned the Samsung mobile (*The Hindu,*26 August2012).Later the US Appeals Court lifted ban on SamSung Galaxy as no evidence that sales are driven by features copied from iPhone.Apple used a clock (clock face with short seconds hand with red ball) of Swiss Federal Railways in iPads and iPhone models; itsettled the dispute (out of court) with Swiss rail firm which (*The Hindu,* 13 October 2012).

As currently as July 2014, Sage Publications, publisher ofa scientific journal *The Journal of Vibration and Control ,* has retracted 60 papers linked to a researcher in Taiwan, accusing him *ofperverting the peer-review process* by creating fraudulent online accounts to judge the papers favourably and help get them published.The 60 papers appeared over the last four years, said the researcher, Chen-Yuan Chen who had established a *peer-review and citation ring*consisting of fake scientists as well as real ones whose identities he had assumed. It said that in at least one case, Mr. Peter Chen reviewed his own paper using one of the aliases.Chen, an associate professor of computer science who resigned in February from the National Pingtung University of Education amid an investigation, appears to have created 130 email accounts that were used in reviewing the papers. Sage is not the only publisher. Of Many papers are withdrawn, by journals like *Nature, Science, British Medical Journal,* etc.

3.5 Plagiarism: The Indian Scenario

Plagiarism is a universal phenomenon and India is no exception to it. In fact due to the lack of or availability of mediocre infrastructure and facilities some researchers would resort to scientific misconduct.Dr V.J. Gupta, Punjab University Geologist, reported fossils of marine animals in the Himalayas in 1964 in *Nature.* In 1984 John Talent, Marquire University, New South Wales accused him that the fossils were stolen from Wales Museum and planted at different sites causes international uproar. After the *great Himalayan blunder,* an article is published in *Nature* (14 April 1984)has painted a bleak picture of Indian R&D that it is all repetitive, of poor quality and plagiarized. A report was submitted in 1995 confirming scientific dishonesty and fraud; no action is taken on him, rather he was promoted!!

One of the authors (ALM), as Editor (and later as Editor-in-Chief) of *Defence Science Journal (DSJ)*, a quarterly primary research periodical of DRDO and *DESIDOC Journal of Library and Information Technology (DJLIT)* has encountered many instances of plagiarism. Two papers in fluid dynamics submitted for DSJ were plagiarized; one was the verbatim reproduction of a paper published by Prof N Rudraiah, Vice Chancellor, Gulbarga University (he was one of the referees for the paper), in *Fluid Dynamics* in 1966 (Moorthy, 1992); the author from a university from Tirupati took the trouble of changing mathematical symbols. In one case the plagiarism check gave 88 instances of verbatim reproduction. These and many such pale before a paper on ontologies submitted to DJLIT from a university in Maharashtra; the paper published in the International Journal of Ontology was verbatim copied—with the exception of the authors' names and affiliation!! Authors first tried to convince that the paper was their own, but accepted and apologized when we threatened to take it with university authorities. The Society for Scientific Valuestakes up investigations of plagiarism and scientific misconduct in India.A number of cases are listed in the website (www.scientificvalues.org/cases.html).

Examples in LIS include the number of PhDs awarded with Information Seeking Behaviour in different subject fields. After the first one registered in the area of Space Sciences, at least a score of PhDs are awarded. One PhD deals with Information Seeking behaviour of Medical Practitioners in a small Tow. In DRDO two PhDs were awarded (by two universities, of course) to two scholars during the same period (within one year gap) with similar topics and same population. The topics are: Information Seeking Behaviour of DRDO Scientists, and the other Information Gathering Habits of Defence Scientists. Only their guides should know the difference between Seeking behaviour and gathering habits. In recent days, papers are written by surveying population in a certain region (e.g: Impact of Internet or Usage of e-resources in Engineering Colleges in a certain region, district etc). The author even received a PhD Thesis for evaluation which contained all downloaded information from the website (the scholar has no time even to rewrite the information). I wish that if a rule is made to award PhDs for all plagiarized theses to solve the problems of *busy research scholars!*

Celebrated writer and poetess Amrita Pritam has won a Court Case in 2010 (after 26 years) regarding using the word *Zindaginama* in the title of her novel *Hardattka Zindaginama.* Krishna Sobti, the grand dame of Hindi Literature had filed a suit against

Amrita Pritam in 1984, alleging that the title of Amrita Pritam's book was adopted from her Hindi Novel *Zindaginama* and terming it book piracy she sought damages of Rs1.5 lakh and demanded that the word *Zindaginama* be deleted from Amrita Pritam's *Hardattka Zindaginama.* However, Amrita Pritam, denied the allegation and said she knew about the word right from her childhood.

In November 2011, C.N.R. Rao, eminent scientist and Scientific Adviser to the Prime Minister and one of the four authors of a paper published in *Advanced Materials*, apologised for the reproduction *of text* from another paper that appeared in *Applied Physics Letters*. Another paper published in *Applied Physics Express* in 2010*has* seven lines in the introduction. The editors cited a following paragraph, as an example of an almost verbatim overlap (*The Hindu,* 9 March 2012). Three more instances of plagiarism committed by C.N.R. Rao and S.B. Krupanidhi, Professor, IISc, Bengaluru have been reported (*The Hindu,* 9 March 2013). Nearly one-third of the introduction section (approximately 20 lines) of a paper published by them with another author in December 2011 issue of the *Journal of Luminescence* has been lifted almost verbatim from two papers published in the June 2009 issue of *Nanotechnology* and January 2006 issue of *Advanced Materials*. The PTI reported that 12 lines were lifted almost verbatim from the 22 April 2010 paper from *Applied Physics Letters* in a July 2011 paper published in *Advanced Materials* by the authors with Chitra as first author. It also contains a few lines taken from a 2005 book *Fundamentals of semiconductors: Physics and materials properties* (*The Hindu,* 9 March 2012). Another classic case is that of Prof VS Rajput, former Vice Chancellor of Kumaon University.

More recently on 11 December 2012 the IP Teachers' Association of Guru Gobind Singh University complained to the Vice Chancellor that Saroj Sharma, Dean, University School of Education, and Suman Gupta, Dean, University School of Law and Legal Studies have plagiarized. An article written by article written by an eminent scholar Parth J. Shah has been plagiarized verbatim and published by Prof Sharma in the January 2013 issue of *U-Focus*, edited by Prof Anu Singh Lather. The Association in its second complaint on 2 January 2012 to the Vice Chancellor cited instances of plagiarism in the article by Prof Gupta. In her paper TRIPS Agreement: Enforcement Provisions for Intellectual Property Protection published in the *National Capital Law Journal,* volume 9, several portions are reproduced verbatim from chapters II and XI from a book TRIPS Agreement: Enforcement Provisions for Intellectual Property Protection Intellectual Property Rights in the WTO and

Developing Countries by J Watal published by Oxford University Press in 2001. A Committee is looking in to the complaints(Mishra and Agarwal, 2013).

The copyright violations are numerous in the film world. A couple of instances are detailed here. The Disputes Settlement Committee of the Film Writer's Association gave its verdict that the story of G*uzaarish*, by Sanjay Leela Bhansali, is apparently lifted from and based upon the script titled *Goonj Uthi Shehnai* by Taabish Romani. Sanjay Leela Bhansali has been directed to pay Taabish Romani INR 10 Lacs in compensation and to give credit to the writer in his film for the writer's concept and script. The controversies and settlement by Aamir Khan for his films 3 Idiots (with Chetan Bhagat) and Ghazni (with A Murugadass) are well known. In *Lawaaris*-Housefull Controversy Case, Calcutta High Court passed the order saying that SaReGaMa India Ltd has the right to grant license to Nadiadwala's grandsons of the Lyrics of the song *Apni Toh Jaise Taise* (Author of the lyrics was Prakash Mehra) from film *Lawaaris* for using in the film Housefull. According to this judgment, there is no prima facie infringement of the moral rights and that all the rights in the literary, dramatic and musical and artistic work and the soundtrack and recording of the songs vest with Saregama Ltd.

Bollywood has been criticised for its blatantcopying of Hollywood storylines.India has been extending copyright protection to foreign works inaccordance with the principles of national treatment. In 2009 Warner Bros issued a notice after press reports alleging similarities between the storylines of *The Curious Case of Benjamin Button* and the Bollywood film *Action Replay*; later it was claimed that *Action Replay* has actually borrowed the storyline of *Back to the Future*. Soon after this incident, Twentieth Century Fox sued a Bollywood studio for allegedly making a movie with a script and storyline that was virtually identical to that of *My Cousin Vinny*. Fox sought damages worth INR 70,000,000 (over US$1 million) but eventually accepted INR 10,000,000 (approximately US$150,000) in a settlement (Banerjee, 2010). In the first ever time a Bollywood studio had been forced to pay out for borrowing from Hollywood,20th Century Fox accepted from BR Films, creators of *Banda Yeh Bindaas Hai*, an amount ofUS$200,000 (£120,000) settlement from the Bollywood film producer it says copied its movie *My Cousin Vinny*, after taking the case to Mumbai's High Court (BBC, 2009).

4. WHAT IS REQUIRED

Due to the peer pressures, university students are under stress to perform or publish certain number of papers in limited time. The new UGC regulations of API (Author Productivity Index) and stipulation of publishing/presenting papers in journals/conferences with ISSN/ISBN, made academic professionals to increase output ignoring originality and quality. The API calculated giving weightage for authors (single versus multiple) plays a vital role in recruitments and promotions in academic institutions. In such circumstances some of the professionals and scholars resort to plagiarism. The main issue is that the students do not think that plagiarism is a serious matter. Many studies on the subject found that plagiarism is resorted to complete mandatory publications and their scant regard (and ignorance) to the plagiarism. Lack of stringent action or punishments makes them search for the easy methods of lifting and fitting or cu-paste technologies. Each year many cases of scientific fraud, misconduct, plagiarism and retraction of papers are reported regularly by scholarly periodicals like *Nature, Science, ACM Communications* and some dedicated websites on these subjects. Many whistle blowers are in the scientific community who fearlessly disclose such acts. It is estimated that of the 1.3mn papers published yearly in peer-reviewed journals, about 500 get retracted (http://www.vox.com/ 2014/7/10/) on allegations of scientific misconduct, dishonesty and plagiarism. There will be many more which are not pursued upon or ignored.

Academics quite often face the problem of lifting reports directly from the Internet and submitting them without acknowledging the sources. Chapters of PhD theses are just copied and submitted to unsuspecting professors by students all the time for their school project reports. There are remedies for containing this disease including tools to detect plagiarism. These allow copying textfrom the paper to be checked in the text field provided; the software will search the web to find out if the text is copied an already published work. As a first step, each academic institution should have a Committee to evaluate the intrinsic value of the proposed publication. All the papers being sent out for publication or presenting in a conference, seminar, etc should be vetted by this Committee. The university or institution should provide the Committee access to plagiarism checking software like Turnitin, the world's leading online plagiarism prevention resource *(www.turnitin.com),* iThenticate, a web-based tool that gives publishers, corporations, and academia the power to check the originality of documents and manuscripts instantly (*http://www.*

ithenticate.com), Plagiaritinfo (*http://www.plagiarism.org*), Copyscape, also known as Copysentry (www.copyscape.com). Even a simple Google check will show plagiarism to a satisfactory extent.

At the second level, Editors of journals or conference volumes should check these for any lapse in the first level. Refereeing should be stringent with at least two or three impeccable impartial referees chosen from outside the knowledge of the author or Research Guide for refereeing. Some editors ask authors to suggest referees, this should be done away with. All the theses and dissertations submitted to the PhD awarding institutions should be made available on Internet for helping the research community to help avoid copying and plagiarism.The Electronic Theses and Dissertations project should be supported and submission of electronic copies of all theses be made mandatory. Above all the heads of institutions including the all- powerful autonomous vice chancellors should severely punish the defaulters without any favour. Then only meaningful research will come out of our institutions and academia.

REFERENCES

1. Association of American Publishers. (2010). *Report by Association of American Publishers submitted to House Committee on Oversight and Govt. Reforms, U.S.* Retrieved May 4, 2012 from http://oversight house.gov/wpcontent/uploads/ 2012/01/20100729Adler.pdf

2. Bailey, Jonatah (2010). A book piracy study with surprising results. Accessed on 11 July 2014 from http://www.plagiarismtoday.com/2010/01/19/a-book-piracy-study-with-surprising-results/

3. Banerjee, Arpan (2010). How Hollywood can sue Bollywood for copyright infringement and save Indian cinema. *European Intellectual Property Review,* **32**(10), 498-505.

4. Bass, Dina (2011). Software piracy losses jump to $59bn in 2010, report says. Accessed on 11 July 2014 from http://www.bloomberg.com/news/2011-05-12/software-piracy-losses-jump-to-59-billion-in-2010-report-says.html

5. BBC (2009). Studio sues over Bollywood copy on BBC*, 5* May 2009. Accessed on 12 July 2014 from *http://news.bbc.co.uk/2/hi/entertainment/8033669.stm*

6. Beall, Jeffrey. (2011, December 1). *Beall's List of Predatory, Open-Access Publishers*. Retrieved May 7, 2012 from http://metadata. posterous.com/83235355

7. Bill would blunt public access to scholarly publishing. *Information Outlook*, **16**(01), 6

8. CSIR Open Access Mandate. Council of Scientific and Industrial Research. Retrieved May 4, 2012 from http://oa.csirexplorations.com/mandate.pdf

9. EMC Corporation. Digital Universe.Retrieved 22 April 2012, from http://www.emc.com/ leadership/ programs/digital-universe.htm

10. Fountain, Henry (2014). Science journal pulls 60 papers in peer-review fraud. *The New York Times,* 10 July. Accessed on 11 July 2014 from http://www.nytimes.com/2014/07/11/ science/science-journal-pulls-60-papers-in-peer-review-fraud.html?_r=0

11. Harnad, Steven and Brody, Tim (2004). Comparing the impact of open access vs. non-OA articles in the same journals. *D-Lib Magazine*, **10**(6). Retrieved May 11, 2012 from http://www.dlib.org/ dlib/june04/harnad/06harnad.html

12. IIPA (2014). USTR special super 301 report . Accessed on 11 July 2014 from www.iipa.com.

13. IP Institute (2012). Copyright piracy. Accessed on 11 July 2014 from http://www.ipi.org/ docLib/20120515_CopyrightPiracy.pdf

14. LakshmanaMoorthy, A. (1992). Quality of research in published papers. *Defence Science Journa*l, 1992, **42**(1), 3-4. (editorial)

15. Microsoft (2013). Software piracy costs billions in time, money for consumers and businesses. Accessed on 11 July 2014 from http://www.microsoft.com/news/ipcrimes.

16. Mishra, Harsh and Agarwal, Gargi (2013).Top academics at Indraprastha University accused of plagiarism.*Mail Today,* 1 February 2013.

17. Moorthy, A.L. (2011a). Intellectual property rights in digital environment. Thirteenth Prof S Dasgupta Memorial Lecture delivered on 10 March 2011at the RanganathanBhavan, Delhi Library Association, Delhi.

18. Moorthy, A.L. (2011b). Open access and scholarly communication. Dr PSG Kumar Oration Paper. Oration delivered at the RTM Nagpur University, 21 January 2011.

19. Moorthy, A.L. andKarisiddappa, C.R. (1997). On citations, references and intellectual debts.*In* Library Science and Its Facets, Vol. 1.HR Chopra, Umesh C Sharma & MK Srivastava (Eds).New Delhi, EssEss Publishers. pp. 264-271.

20. Moorthy, A.L. and Pant, Ankur (2012).Digital rights, publishers' monopoly and digital content:Need for a level playing field for librarians. Paper presented at the International Conference on Trends in Knowledge and Information Dynamics (ICTK-2012), 10-13 July 2012, edited by Devika P Madalli, *et al.* Bengaluru, Documentation Research and Training Centre/ISI, 2012. Vol.1, pp.497-510.

21. National Institute of Health. (2012). The NIH public access policy. Retrieved 7 May 2012 from http://publicaccess.nih.gov/communi cations.htm

22. Outsell Inc. (2011). Market forecast update: scientific, technical and medical information.Retrieved May 7, 2012 from http://www. outsellinc.com

23. Springer (2012). Retrieved 4 May 2012 from http://www.springer.com/open+access?SGWID=0-169302-0-0-0

24. Taylor & Francis. (2011). Taylor & Francis open. Retrieved 4 May 2012 from http://journalauthors.tandf.co.uk/ preparation/OpenAccess .asp

25. The Economist (2013). Academic publishing: Free-for-all open-access scientific publishing is gaining ground. *The Economist*, 4-10 May.

26. The Economist (2012). Academic publishing: Open sesame. *The Economist*, 14-20 April, 17.

27. The Hindu (2012).This column is not plagiarised. *The Hindu,*20 October; also *TheHindu,* 20 August,26 August and 13 October 2012; and 10 February 2013.

28. The major U.S motion picture studios lost $6.1bnin 2005 to piracy worldwide. Accessed on 11 July 2014 from http://austg.com/include/downloads/PirateProfile.pdf

29. TOI (2012).Apple loses tablet Copyright appeal against SamSung. *The Times of India,* 19 October.

30. Wiki (n.d). Wikipedia. Accessed on 12 July 2014 from http://en.wikipedia.org/wiki/

31. Young, Philip. (2009). The serials crisis and open access: a white paper for the Virginia Tech Commission on Research. University Libraries, Virginia Tech.

32. Xia, J., & Nakanishi, K. (2012). Self-selection and the citation advantage of open access articles. *Online Information Review*, **36**(1), 40-51.

SCIPR-2014: Paper presented in the National Conference, pp. 121-134

Intellectual Property Rights in India: Significance of Patents

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ABSTRACT

This paper highlights an overview of Intellectual Property Rights (IPRs) in India and their trends. Importantly, patents have played a key role in changing national and global innovation landscape.The IPR trends during 2003-13, the approved rate of designs (87.38%) and trademarks registrations (65.54%) were significantly higher than the granted patents (22.06%) in India. Though, the patents (63.26%) have generated huge revenues than the designs, trademarks and GIs over last decade.Total number of patent grantsoverthe last 10 years was 69,745 out of which 21.71% were granted to Indians and 78.29% wereto foreign applicants. Maharashtra, Delhi and Southern states are leading in filing patents. Streams like chemical and mechanical engineering have produced highest number of patents whereas bio-technology and foods field were at the low preference.

This paper also deals with the patent grants in Asian countries.On an average, the percentage of patent grants in Japan, Korea and Taiwan was 43.08, 43.95 and 45.88 respectively. China has shown massive interest in patent filing in recent years and the overall percentage of patent grantsover last dozen years was 32.99%. When compared withAsian countries, India was least innovative nation among them in terms of patent filing witha granting percentage of23.07. It indicates, India is conscious about its IPR polices with higher rejection of filed patents. It has also shown considerable increase in its research and innovation capabilities. Over the last 10 years, India managed to produce 2.84 lac research publications. In the 2012, India ranked 9th in scientific publications at a global share of 3.5%. Inthe global innovation index over the last 5 years,on an average,Indian inputsub-index ranking was 74.6% and output sub-index ranking was 45.8%.Besides, India was often ranked at No. 01in the region of Central and Southern Asia for the last 5 years. India has been consistently ranked in the top ten when it compared to lower-middle-income (LMI) economies worldwide. However, IPR culture in India is anything but satisfactory. It demands effective strategies for encouraging and building IPR activities and explore scientific and industrial research and innovationin India.

Keywords: Intellectual Property Rights; Patents; Indian Patent Office; Copyright; Global Innovation Index

1. INTRODUCTION

Developed countries are recognized today mainly by their advancement of intellectual creativity and innovation. Knowledge is the key driver for transforming a nationrich and innovative. A kind of new knowledge (creations) derived from human mind (human capital) is often called Intellectual Property (IP) and it has beendefined as original creative work

manifested in a tangible form that can be legally protected (WIPO, 2008). Intellectual Property Rights (IPRs) are statutory rights that allow originators exploit their inventions or innovations exclusively for a particular period of time. Factually, theIPR laws bring stable, safe and sustainable eco-system over intellectual products, processes and services for the sole benefit of the society. Besides, the property has its own uniqueness, exclusiveness or monopoly that allows inventors or licensors to exploit commercially. In fact, there are two branches of IPR: one is industrial property (*first recognized in Paris Convention in 1883*) and second one is copyright (*first recognized in Berne Convention, 1886*). Industrial property consists of patents, trademarks, geographical indications, and industrial designs etc. that are territorial in nature. Filing and registration with a particular territory and for a particular period of time is essential. After 2009, patents filings grew by 7.6% in 2010, 8.1% in 2011 and 9.2% in 2012 (2.35 million applications filed) while industrial design filings grew by 17% and trademark filings by 6.0% in 2012 world-wide(WIPO, 2013).Among the industrial property, patents play a keyrole in changing national and global innovation landscape.The main purpose of the patent is to promote innovation, competitiveness, economic growth, and visibility.Historically, Venetian law of 1474 made the first systematic attempt to protect inventions by a form of patent, which granted an exclusive right to an individual for the first time (Lucchi, 2007).Copyright (consists of literary, dramatic, musical artistic works including architectural works etc.) is an intangible property for a specific term. In India it is 60 years.Without the invention of the printing press by Johann Gutenberg around 1448, book publishing and its copyright consequences would not have come to limelight and marketed today. Copyright is not a perpetual right (Majmudar & Co) and ideas cannot be copyrighted, protected and even patented. Majority of research findings published in peer-reviewed journals remain under copyright. Over 90% journals are now online and about 1.5 million STM articles are produced in a year. Average growth rate ratio per year for journals titles, articles and researchers was 3.5:3:3 over the last two centuries (Ware & Mabe, 2009). In fact, copyright is automatic, no need to register across for its protection. Hence, significance of IPRcommunication and dissemination has greater impact on society for not only safeguarding the nation's intellectual creations but also generating revenue to build knowledge-based economy.

This paper aims to present an overview of IPRs, their trends and revenue generated in India; significance of patents in India by region and stream; evaluation of patent grants in Asia and India's ranking in global innovation index. It also provides strategies for patenting.

The source data over the last 10 yearswere extracted from annual reports of Controller General of Patents, Designs & Trade Marks (CGPDTM), India (*www.ipindia.nic.in/*) and focusing mainly on patents, trademarks, industrial designs and GI applications filing and grants/registrations.Data on Indian IPR revenue generation were also collected and presented (Table 2) to present the economic value of IP over last 10 years.Besides, data from European Patent Office (EPO) have been considered for evaluation of patent filing and grants in Asia during 2001 to 2012. World Intellectual Property Organization (WIPO) estimates on IP and the ranking of Global Innovation Index (GII) were also considered for this study for pressing the value of Indian research and innovation.

2. IPR IN INDIA: AN OVERVIEW

India is a huge country with a population of more than 1.2 billion with an aspiration to build intellectual, inclusiveand sustainable knowledge based innovative society. Over centuries, India is known for colossal history of science demonstration, swashbuckling cultureand heritage of traditional knowledge. Zero was invented by India along with the decimal system of numerals that is called Arabic. By the fifth century, an Indian had discovered the earth's axial rotation (Stevens, 1982). Stylish and superior quality of articles such as fine fabrics of cotton and silk, embroidery, painted and enamelled wares, swords and knives and gold and silver jewellery were produced in India(INSA, 2001). But the nation did not exploit these in commercial ways and so failed in this aspect.The culture of IP in India roots from centuries; the efforts to stimulate a change in the society for meeting both domestic and overseas needs are to be sustained vigorously. India signed theTrade-Related Aspects of Intellectual Property Rights (TRIPS) agreement on 15 April 1994 to set up minimal standards, procedures and remedies to protect IPRs. TRIPS agreement also allows a great deal of lawful pluralism among WTO members about standards of patentability and about key flexibilities, including both patentable subject matter and grounds for compulsory licences (CLs) (Jishnu, 2014). Besides, India has a similar pact with the EPO. Under this agreement, on 2 February 2009 the Indian government granted access to its Traditional Knowledge Digital Library (TKDL), a unique database that houses the country's traditional

medical wisdom, to examiners at the EPO for reference before grant of patents (EPO, 2009).Ultimately the IPR protection can reap rewards in terms of greater domestic innovation and increased technology diffusion in developing countries (Falvey and Foster, 2006). In fact, there are seven categories of IPR Acts in India (Fig. 1) representing the rights for protecting the nation's intellectual creations or innovations of human mind. The office of the Controller General of Patents, Designs & Trade Marks (CGPDTM) also called as IP Office is responsible for the administration of all acts through its IP Offices located at Mumbai, Delhi, Kolkata, Chennai and Ahmedabad.

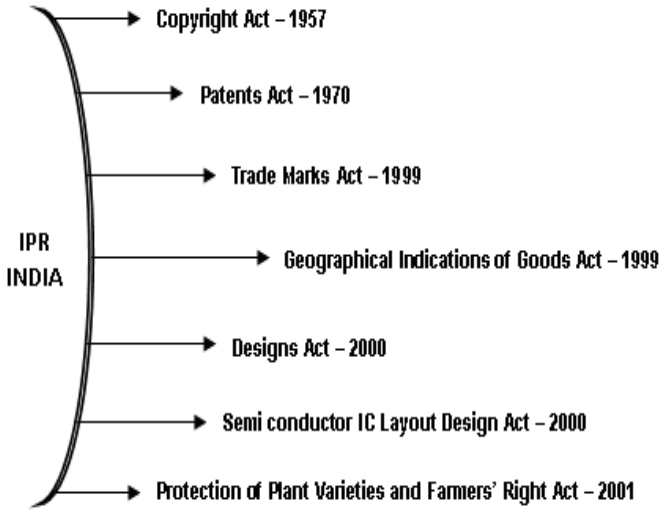


Figure 1: IPR Acts in India

3. COMPARISON OF IPR TRENDS

Office of the CGPDTM follows its own norms and procedures in receiving, examining IPR applications and granting them in due course of time.Initially, the IPR in India focused mainly on patent, designs, and trademarks. ButGeographical Indications (GI) Act – 1999 was brought into force on 15th September 2003. Before the TRIPs agreement,GI was not protected in India (Kumari and Reddy, 2006). Similarly, semiconductor IC (integrated circuits) layout design and plant variety and farmers' rights have been protected under the respective acts mentioned in Fig. 1.

Table 1 Comparative trends of IPRs granted/registered for the last 10 years

Year	Patents			Designs			Trade Marks		
	Filed	*Granted*	*% granted*	*Filed*	*Registered*	*% Registered*	*Filed*	*Regi-stered*	*% Regi-stered*
2003-2004	12613	2469	19.58	3357	2547	75.87	92251	39762	43.10
2004-2005	17466	1911	10.94	4017	3728	92.81	78996	45015	56.98
2005-2006	24505	4320	17.63	4949	4175	84.36	85699	184325	215.08
2006-2007	28940	7539	26.05	5521	4250	76.98	103419	109361	105.75
2007-2008	35218	15261	43.33	6402	4928	76.98	123514	100857	81.66
2008-2009	36812	16061	43.63	6557	4772	72.78	130172	102257	78.56
2009-2010	34287	6168	17.99	6092	6025	98.90	141943	67490	47.55
2010-2011	39400	7509	19.06	7589	9206	121.31	179317	115472	64.40
2011-2012	43197	4381	10.14	8373	6590	78.71	183588	51735	28.18
2012-2013	43674	4126	9.45	8337	7252	86.99	194216	44361	22.84
Total	**316112**	**69745**	**22.06**	**61194**	**53473**	**87.38**	**1313115**	**860635**	**65.54**

Source: Annual Reports of IPR

Table 1 indicates the trends in applications filed and granted/registered for different types of IPRs in India over the last ten years. With respect to patents, the total number of applications filed were 3,16,112 of which 69,745 (22.06%) were granted. The percentage of registered designs (87.38) and trade marks (65.54) were considerably higher(as compared to patent grants). The GIs registry has received 404 applications till 31 March 2013.

3.1 Comparison of IPR Revenue Generation

Table 2 shows the revenue generated by the PTO in India has been gradually increasing over a decade. During the financial years 2003- 2013, the total revenue earned over IPR was 1865.18 Crore, in which 63.26% was generated from patents and 36.16% from trademarks. While designs, GIR and PIS/IPTI generated It is also seen that the revenue with 0.52%, 0.04% and 0.02% respectively. However, the revenue over the IPR has been increased substantially for the last 10 years except in when it decreased over the previous year.

Table 2 Comparison of the revenue generated for the last 10 years (Rs)

Year	Patents	Designs	Trademarks	GIR	PIS/IPTI	Total
2003-2004	16,53,66,982	53,01,165	27,06,75,959	45,000	0	44,13,89,106
2004-2005	40,72,54,457	64,59,282	37,94,85,262	1,10,000	0	79,33,09,001
2005-2006	93,64,28,079	75,60,563	49,75,09,410	2,18,090	1,02,911	144,18,19,053
2006-2007	1,06,34,17,330	1,00,80,300	55,79,28,069	3,47,370	1,56,338	163,19,29,407
2007-2008	1,30,24,08,136	1,00,23,450	63,00,36,633	4,18,960	2,78,542	194,31,65,721
2008-2009	1,56,14,63,824	1,23,66,048	69,15,02,297	4,63,360	5,05,510	226,63,01,039
2009-2010	1,42,61,73,541	91,45,030	71,61,25,436	4,89,440	5,98,954	215,25,32,401
2010-2011	1,58,78,10,509	1,06,26,985	86,15,00,000	2,75,706	5,39,585	246,07,52,785
2011-2012	1,64,40,23,224	1,26,11,650	1,03,53,00,000	48,08,265	6,43,000	269,73,86,139
2012-2013	1,70,47,84,657	1,29,32,740	1,10,45,00,000	8,77,750	1,45,712	282,32,40,859
Total	**1179,91,30,739**	**9,71,07,213**	**674,45,63,066**	**80,53,941**	**29,70,552**	1865,18,25,511

Source: Annual Reports of IPR

4. SIGNIFICANCE OF PATENTS IN INDIA

Patents are becoming centre stage for nation'sscientific, industrial and economic growth and development. Indian Patent Law defined inventionas a new product or process involving an inventive step and capable of industrial application (sec. 2(1) (J), CGPDTM, 2008). In India, the Patents Act, 1970 has come into force and aimed to encourage and protect the inventions that are new, non-obvious, and commercially applicable and thus enabling the innovators to appropriate the returns on their innovative activities. One hand the Act is protecting the patents and the other hand ensuring the technology transfer, public interest and specific needs of the country. The Act has been amended many times in compliance with the provision of TRIPS in 1972 (included Patent Rules), 1999 (for administering Patent Office), 2002 to meet with the second set of obligations (term of Patent etc.), 2003 (Rules amended) and 2005 (Patent (Amendment) Rules) respectively. Patent rights are territorial and can be filed in each countrytoprotect them in foreign countries through a Patent Cooperation Treaty (PCT).In India, the patent is valid for 20 years and can be transmitted or assigned but it cannot be renewed. The patent grant also excludes others from making, using, selling, importing, and offering an invention for up to 20 years. Sir Jagadish Chandra Bose was the first Indian who owns a US patent on *"Detector for electrical disturbances" (US 755840* and filed on Sept. 30, 1901) granted on 29 March 1904.In general, Soini and Others (2008) emphasized that the life span of a patent right may be divided into three category of acts - constitutive (filing, examination and

granting), consequential (exploitation of rights and protection against infringements as well as capability to grant licences acts), and terminating (expiration after 20 years, revocation for example due to unpaid fees or successful opposition). For the last two decades, the patent laws have been strengthened and modified for meeting both domestic and global needs.

5. PATENTS GRANTED IN VARIOUS FIELDS

Research and development of today is purely multi-disciplinary and collaborative. Patents reflect nation's economic growth through scientific and technological advances in multiple disciplines. Figure 2 shows number of patents granted in various fields of innovation during the last 10 years. During 2003 to 2007, the ratio of domestic and foreign innovations granted was about 1:2; from 2007 to 2009, there was an accidental growth in granting patents as compared to 2009-2013. However, total number of patents granted for the last 10 years was 69,745 out of which 15,139 were granted to Indian and 54,606 were to foreign applicants. Streams like chemical (16,534) and mechanical (15,518) engineering have produced more patents, while bio-technology (2,749) and food (960) fields were at low priority of innovation.

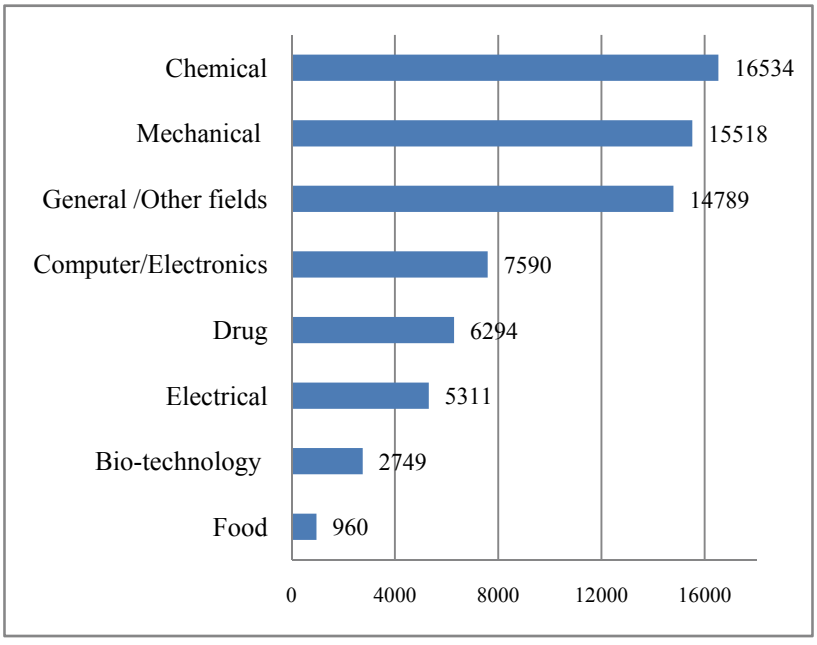


Figure 2: Number patents granted during 2003-2013 in various fields.

6. PATENT FILING IN INDIA

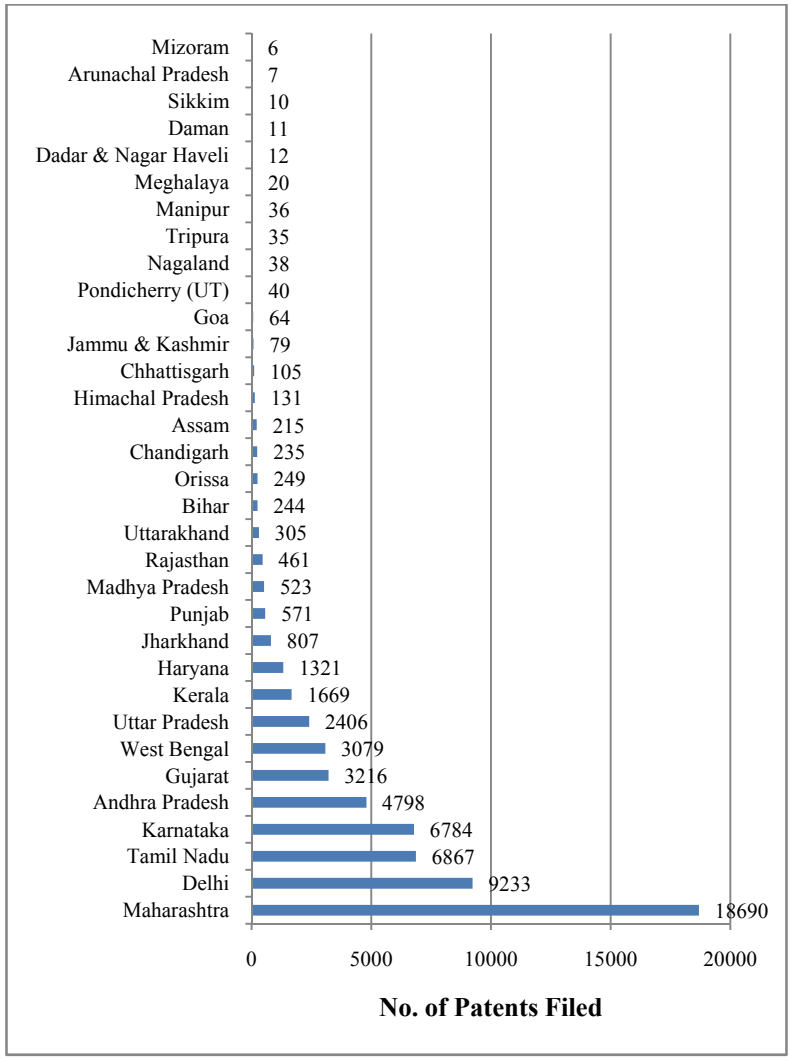


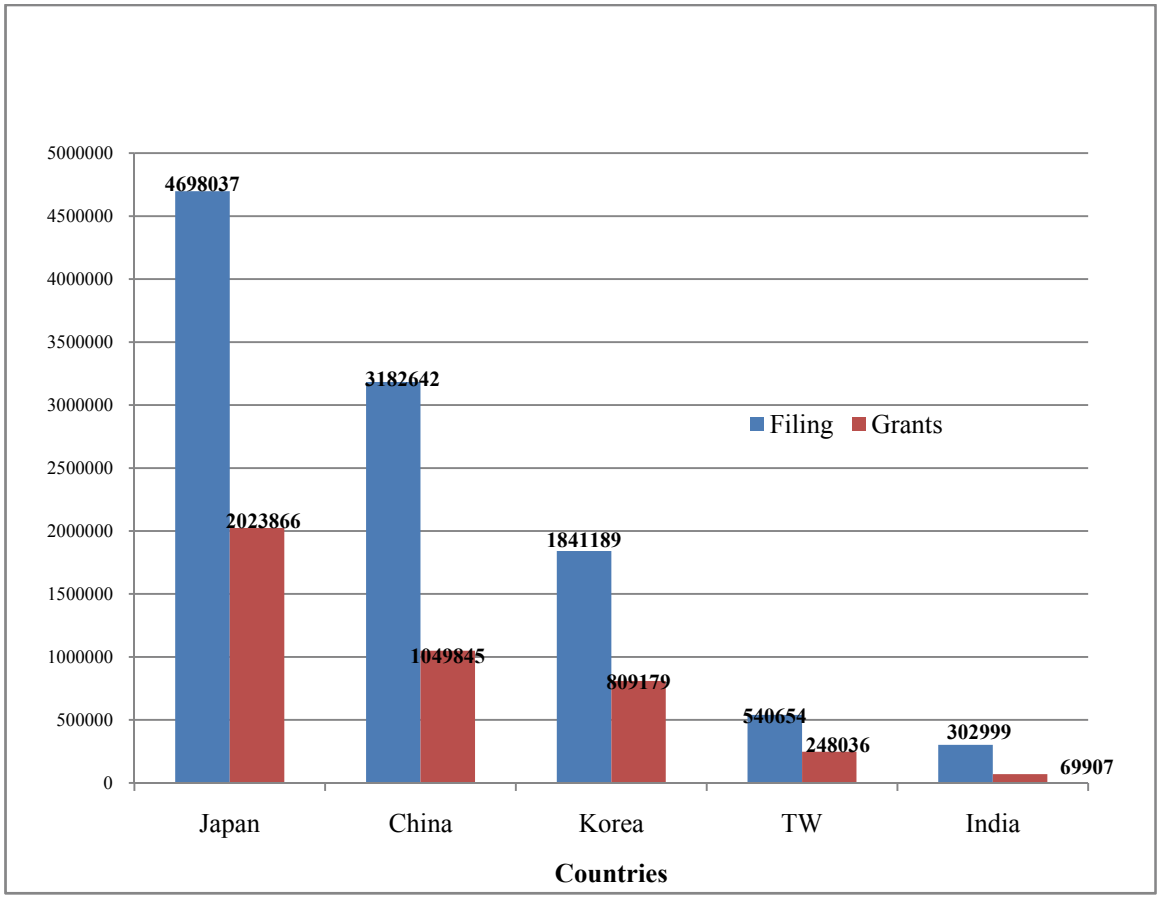
Figure 3: State and UT-wise patent filing during 2003-2013.

Patent filing is purely territorial.IP offices have been located at various regions to administer all IPR activities in India. Patent filing is region wise and it provides a clear communication of research and development in the states and union territories in the respective regions.

From Fig.3, it is clearly understandable that the total number of patents filing in states and union territories in India was 62267during the period. The patents filed in 2003 were3218 and in 2013 it has increased to 9604, a 10.25% growth rate. Maharashtra has recorded the highest number (18,690) of patent filings; Delhi (9,233) at distant second

followed by Tamil Nadu (6,867), Karnataka (6,784), Andhra Pradesh (4,798) and so on. Kshitij and Joshi (2012) opined that, Maharashtra is the hub of many industries units as well as academic institutions and they also indicate that the states housing Patents Offices are among the top rankers as well, with West Bengal being an exception. North-eastern states such as Arunachal Pradesh (7) and Mizoram (6) are at the bottom in filing patents.

7. PATENT FILING AND GRANTS IN ASIAN COUNTRIES DURING2001-12



Source: European Patent Office website

Figure 4: Patents filed and granted in Asia in 2001-12.

Figure 4 shows the patent filing and grants in Asia.Japan has filed highest number of patents with a grantingpercentage of43.08 over the last dozen years. It reveals that Japan's patent filing is consistently high from 2001 to 2005 while granting was on an average growth rate of 28.8%. After 2006, Japan filingsreduced graduallybut percentage of the

grants has increased to55.90. It shows the quantity of patents in Japanhas been on the increase. With respect to China's innovation, there was a massiveexplosion in patent filing whichcrossed Japan in recent years. Overall, China's patent grant percentage increased to 32.99 over dozen years. As. Prud'homme (2012) observed, the reason behind patents growth is a variety ofsocioeconomic factors (e.g. rise in the educated workforce) and economic competition have likelyled to the growing capacity and drive of Chinese entities to file patents. But, a few indicating factors (lower average life-span, lower percentage of patents in-force**,** higher rates of utility model invalidationsandpoor scores in terms of patent citations) suggest that such polices have resulted in a huge amount of junk patents (Giacopello, 2012)**.** The Figure also indicates the granting percentage of patents by Korea and Taiwan as43.95 and 45.88 respectively.In contrast, India was among the least innovative nationsamong Asiancountries in terms of patent grants over the last 12 yearswitha low percentage of 23.07.However, India is conscious about its IPRpolices and thestrong enforcement system in producing patents.

8. INDIAN RESEARCH AND INNOVATION

Indeed, India has shown considerable increase in learning and improving itsscience research and innovation capabilities. According to Thomson Reuters (2011), India managed to produce 2,83,664 research publicationsfor the last 10 years. In 2012, India ranks 9th scientific publications with a global share of 3.5%, predominantly chemistry publications which forms the largest share (6.5%) of world research output. Innovation is defined asthe application of knowledge in a novel way, primarily for economic benefit (Economist, 2009).In the Global Innovation Index (GII),India ranks at No. 1in the region of Central and Southern Asia; it has been consistently ranked among thetop ten in the category of lower-middle-income economies over last 5 years.

Table 3 GII ranking of India

Index	**2009**	**2010**	**2011**	**2012**	**2013**	**Average Ranking**
Global Innovation Index	41	56	62	64	66	57.8
Innovation Input Sub-index	49	54	87	96	87	74.6
Innovation Output Sub-index	34	69	44	40	42	45.8

Table 3 shows Indian innovation in the global context during 2009-13. TheGII consists of input (institutions, human capital and research, infrastructure, market sophistication and business sophistication) and output sub-indices (knowledge and technology and creative outputs). The global ranking of India was a simple average of the input and output sub-indices. On an average Indian input sub-index ranking was 74.6 whereas output sub-index rank was 45.8 in the world over last five years.

9. STRATEGIES FOR PATENTING

Inventors and investors are often busy in producing patents that are unique, valuable and worldwidemarketable. But for the promotion and protection of the patents, and to enhance patenting system in India and abroada few strategies are needed. These include

- An amicable eco-system (academic and research culture, resources, infrastructure, incentives, collaboration, expertise, discourses etc.) for creativity and innovation.
- Prior art search, an important element to reveal/review existing research literature.
- Creating awareness of traditional and publicly available knowledge which cannot be patented.
- Patent filing or provisionalpatent filing.
- Drafting claims (defined precisely based on scope, characteristics and structure) or disclosures that help others to exploit invention.
- Ensuring patent proliferation, policies and protection to avoid confrontation and infringement by the patent trolls
- Evaluation of quality of patents to avoid in patent absurdity and piling of inconsequential patents
- Assured economic viability and societal value of the patent
- Collaboration among individuals, institutes, and industries in creation of innovative spirit and promotion of patents
- Encouragement of open innovation
- Reverse innovation (Dartmouth) to encourage low-cost goods.

However, the culture of patenting in India is slowly growing and needs to be speeded up. It needs a strong IPR mandate for building patenting system in India for the creation and generation of products, employment, income and wealth.

10. CONCLUSION

Over centuries, India is known for rich history, culture and heritage of scientific and traditional knowledge. In recent days, Indiahas played a key role in stimulating research and innovation capabilities in multiple sectors andencouraging the IPR activities. No doubt, India earns huge revenues through IPR but also follows stringent rules protect creativity or innovation. As a result, total number of patents granted in India was 69,745 over the last 10 years with a rejection rate of77.94% of patent applications which is high when compared to China, Japan, Korea and Twain. It indicates that India has stringent patenting system, policies and enforcement system to protect IPR laws. States where Patent Offices are located, industries, academic and research institutes have shown considerable role in producing patents. Over last decade, streams like chemical and mechanical engineering were given high priority in producing patents than the fields of bio-technology and food. However, India has shown considerable increase in learning and improving science research and innovation capabilities at domestic and global levels.Further, creativity and innovation act as a business discipline in the Indian educational system to generate sustainable growth and development.

REFERENCES

1. CGPDTM (2008). Manual of patent practice and procedure the patent office, India. Controller General of Patents, Designs & Trade Marks, India. Retrieved from http://ipindia.nic.in/ipr/ patent/Patent_Manual_Feedback/WO_Ga_34_China.pdf

2. Cornell University, INSEAD & WIPO (2013). Global Innovation Index (GII): the local dynamics of innovation. Author. Retrieved from http://www.wipo.int/econ_stat/ en/economics/gii/

3. Economist Intelligence Unit Limited (2009).A new ranking of the world's most innovative countries. Retrieved from http://graphics.eiu.com/PDF/Cisco_Innovation _Methodology.pdf

4. EPO (2009). India's Traditional Knowledge Digital Library (TKDL): A powerful tool for patent examiners. European Patent Office. Author. Retrieved fromhttp://www.tkdl.res.in/tkdl/TKDL_CSIR/pressrelease/press%20images/www.epo.org _topics_issues_traditional.html.pdf

5. European Patent Office (EPO). Author. Retrieved from http://www.epo.org/searching/ asian/trends.html

6. Falvey, Rod and Foster, Neil (2006). The role of intellectual property rights in technology transfer and economic growth: theory and evidence, Vienna: UNIDO. Retrieved from

http://www.unido.org/fileadmin/user_media/Publications/Pub_free/Role_of_intellectual_property_rights_in_technology_transfer_and_economic_growth.pdf

7. Giacopello, Fabio (2012). Rise in quantity, fall in quality: Assessing China's patent filings. Intellectual Property Magazine, 63-64. Retrieved from http://www.hfgip.com/downloads/ 201212001.pdf

8. Govt. of India. Annual Report of Controller General of Patents, Designs & Trade Marks (CGPDTM). Author. Retrieved from http://www.ipindia.nic.in/

9. Hoorebeek, Mark Van (2005). Law, libraries and technology, Oxford, OX: Chandos Publishing (p. 83)

10. INSA (2001). Engineering and technical education. In. Pursuit and promotion of science (pp). New Delhi: Indian National Science Academy. http://www.iisc.ernet.in/insa/

11. Jishnu, Latha (2014 March 16-28). Patently absurd: patently hollow claims of the US. Down to Earth, 51.

12. Kshitij, Avinash& Joshi, Kirti (2012 January25).Patent portfolio in terms of geographic distribution. Current Science, 102(2), 157.

13. Kumari, S. &Raghunatha Reddy, D. (2006). Intellectual Property Rights Management and Its Growing Importance in Diversified Field of Technology in Context of Developing Countries. The Chartered Accountant. 725-732. Retrieved from http://www.icaiejournal.org/Journal/1353_ 2006_11.pdf

14. Lucchi, Nicola (2005). Intellectual property rights in digital media: a comparative analysis of legal protection, technological measures, and new business models under EU and U.S. law.Buffalo Law Review, 53(4),102-183.

15. Prud'homme, Dan (2012). A statistical analysis of China's patent quality situation and larger innovation ecosystem. Munich Personal RePEc Archive (MPRA), (Paper No. 51619). Retrieved from http://mpra.ub.uni-muenchen.de/51619/

16. Soini, S., Ayme S., &Matthijs, G. (2008).Patenting and licensing in genetic testing: ethical, legal and social issues. Eur J Hum Genet, 16, S10–S50.

17. Stevens, William K.(1982, November 9). India, once a giant in science, tries to rekindle the creative fire. The New York Times.http://www.nytimes.com/ 982/11/09/ science/india-once-a-giant-in-science-tries-to-rekindle-the-creative-fire.html?pagewanted=1

18. Thomson Reuters (2011)Evidence report of Thomson Reuters2011. Retrieved from http://thomsonreuters.com/

19. Ware, Mark & Michael Mabe (2009). The STM report: An overview of scientific and scholarly journal publishing,Oxford, OX: STM: International Association of Scientific, Technical and Medical Publishers. Retrieved 21 February 2014, from http://www.stm-assoc.org/ 2009_10_13_MWC_STM_Report.pdf

20. WIPO (2013). 2013 World Intellectual Property Indicators. WIPO Economics & Statistics Series. (Publication No. 941E/2013). Geneva: WIPO Publication. WIPO. Retrieved from http://www. wipo.int/ipstats/en/wipi/index.html

21. World Intellectual Property Organization. (2008). The concept of intellectual property. In W. I.P Organization, WIPO Intellectual Property Handbook: Policy, Law and Use (2nd Edition ed., pp. 3-6). Geneva: WIPO Publication.

SCIPR-2014: Paper presented in the National Conference, pp. 135-139

Intellectual Property and Path to Commercialization

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1. INTRODUCTION

Humans as a species were able to reach the pinnacle of civilization by their ability to think. A thought which materializes as an obscure concept will reach its potential as a tangible tool to be utilized only when due process of execution is implemented.Progress in civilization is accomplished by this thought which ultimately ends up as an innovation. Be it a discovery or an invention, if they are not disclosed properly and due credit be given to the person who invented or discovered it, then innovation ends in chaos. An appropriate recognition of innovation results in intellectual property, and protection of this idea and innovation by laws results in a patent. The ultimate goal of any innovation is to translate it into a product. An idea has to go through several intricate steps, where all fields of sciences as well as humanities merge to chart out a clear path to commercialization. In this review we present a brief introduction to translating an idea by an inventor into a product for commercialization.

1.1 Idea

Within the past century, we have experienced the emergence of a knowledge based economy where ideas and creativity have stimulated innovation and economic growth. When a problem with no apparent solution arises, or a solution that exists cannot be used because of cost or certain disadvantages, an idea is formed that most of the time, is patentable. These ideas are insights into a problem and often times are stimulated by abstract contemplation by the “idea generator.”

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The idea generators are one of Roberts and Fusfeld's five "critical behavioral roles" (Roberts 1988). These are people who are "contributors of new insights that both initiate projects and contribute to problem solutions." Further broken down within the idea generators are the idea-havers, who come up with the idea, and the idea exploiters, who do something with the ideas that they have generated. Forming an idea is the first step on the journey to patenting the intellectual property.

1.2 Invention and Inventor

A novel idea is devised by a single person or group of people, known as the inventor(s) (also the idea generator(s)). While exploring a problem, the inventor is often looking for a solution that is patentable; an idea that is new and original and not obvious (Mosher 2014). Once this idea is formed, an inventor should write down a description of the problem and the solution while also noting the date that this idea came into being. When this idea is shared with others, this record is now called a disclosure of invention (Mosher 2014).

One must note that there is a slight difference between an invention and an innovation. An invention is marked by discovery or a state of new existence, usually at the lab or bench while an innovation is marked by first use, in manufacturing or in a market (Roberts 1988).Innovation is composed of (1) the generation of an idea or invention, and (2) the conversion of that invention into a business or other useful application. As Roberts (1988) states that Innovation = Invention (1) + Exploitation (2). Once the inventor has formulated their idea and can state that they have an invention, it is critical that they legally protect their intellectual property, almost always through obtaining a patent.

2. INTELLECTUAL PROPERTY

Article 21 of the Universal Declaration of Human Rights outlines the right to benefit from the protection of moral and material interests resulting from authorship of scientific, literary or artistic productions (World Intellectual Property Organization). The World Intellectual Property Organization (WIPO), an international organization established in 1970, Defines Intellectual Property (IP) as the creation of the mind, such as inventions; literary and artistic works; designs; symbols, names and images used in commerce (World Intellectual Property Organization). Intellectual property is protected in law through the use of patents, copyrights, trademarks, and trade secrets (Legal Information Institute).

The IP system allows the creators, or owners of intellectual material, the opportunity to earn different levels of recognition. The process rewards creativity and human endeavor by regulating the public's use of the property that benefits both the inventor and the greater good of civilization (Legal Information Institute). The promotion and protection of intellectual property spurs economic growth, encourages the commitment of additional resources for further innovation, and allows humanity to progress in a capacity that allows those to create and invent new technology (World Intellectual Property Organization).

2.1 Patents

Patents are exclusive rights granted for an invention, defined by WIPO as a product or process that provides a new way of doing something, or that offers a new technical solution to a problem. Patent protection means an invention cannot be commercially made, used, distributed or sold without the patent owner's consent. The protection is generally granted for 20 years and enforced in courts that have the authority to stop patent infringement. Courts that have such jurisdiction also have the authority to declare a patent invalid upon a successful challenge by a third party. Despite the limited period of time, patents are important because they provide incentives to individuals by offering the possibility of material rewards for their inventions.Patent owners are also given the choice of deciding who is allowed to use their patented material during the period in which it is patented. The owner can choose to sell the patent while they still hold the rights to it. When the patent expires, the protection ends and the invention is entered into the public domain (World Intellectual Property Organization).

2.2 Product

Great ideas for a product often come from the need for a solution, which current products cannot solve. This leads to the need for urgent development of a new product. A great product is often minimal in its building cost, very simple to use and understand, and can perform a task that other products cannot. When a new product is developed, acquiring a patent provides protection of theIP and ensures that the technology cannot be used or copied without the permission of the inventor. Filing a patent can be a long and frustrating process; however, it is in the innovators best interest to do so.

The developed product needs to be tested, built and validated to confirm that it satisfies ones needs. Extensive analytics are often run to determine the market need for the

product. Before a product can be displayed for potential licensing, a working prototype must be made that demonstrates that it is cost effective and has the potential for profitability (Grantstrand, 1999). When a great product or idea comes along, it is always important to assess the potential impact of the product. Many questions have to be asked with regard to the cost to produce the product: can it be simplified for the general public, what kind of target market is out there and can the product be profitable. If the product is cost effective and has a ledge market, then the potential to make money is great and this leads to the commercialization of the patent.

3. COMMERCIALIZATION OF PATENTS

For various companies and individuals located across the world, patents have become a valuable tool and commodity for people to use. When authorship of a patent is granted, it comes with many opportunities for monetization and financial growth. The decision to license the patent to another company or not comes from one's own means. If the inventor has the means to build large numbers of the product, mass advertise it, and distribute and market the product, then licensing to another company may not be necessary. If not, licensing the patent can bring in another party who has the means to mass produce and market it (Bulsara, 2010).From patent monetization to the licensing and sale of the patents, there is potential for lucrative growth. Many people don't have the financial means or network to manufacture and commercialize their product successfully. Therefore inventors may wish to license their ideas to a company who will produce and distribute their products.

Granting a license for the product is the fastest and most effective way of commercialization of a patent. A license is an agreement that grants a company or corporation permission to use your intellectual property for commercial purposes like mass production and sale (Bulsara, 2010). The inventor will always have a large part in licensing the product because both the inventor and the buying company must collaborate together. The license is always subject to terms and conditions that the inventor and the company work together to create. When the company acquires the license of the inventor's property and monetizes it, fair compensation will always be awarded to the inventor based on factors such as the estimated value of the property, the market, and the potential for growth. The goal of licensing is to enter into a long term agreement that is fair and reasonable to both sides and will potentially bring a mutually rewarding relationship.

4. CONCLUSION

Path to commercialization can be summarized into:

- Sometimes it is better to do nothing than something
- Sometimes it is better to do something than nothing
- Many a times it is better to do everything than doing nothing or something

Developing an idea and taking it to the path of commercialization entails hard work, commitment, perseverance, vision and often luck. A successful product has the history of sweat and blood of many a people. A working idea is the hallmark for success so inculcating the spirit of innovation and enterprise in young people can lead to a bright future not only to that particular individual but also to the society in general.

REFERENCES

1. Bulsara, H. P., Gandhi, S., & Porey, P. D. (2010). Commercialization of technology innovations and patents. *Patent Commercialization*, 12.
2. Granstrand, O. (1999). The economics and management of intellectual property towards intellectual capitalism. External organization. Chicago
3. Legal Information Institute (n.d.). Accessed on26 June 2014, from http://www.law.cornell.edu/wex/intellectual property
4. Mosher, S.S. (2014). A guide to securing a patent (part one). *Texas Bar Journal*, 77, 448.
5. Roberts, E.D. (1988).What we have learned—managing invention & innovation. *Research*
6. World Intellectual Property Organization (n.d).Technology management: What is intellectual property? Geneva: WIPO.

SCIPR-2014: Paper presented in the National Conference, pp. 140-149

Copyright-related Issues in Electronic Books

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1. INTRODUCTION

After the introduction of printing technology, printed books had over 500 years old market. The developments in the field of information technology (IT), communication and network technologies have brought about a rapid change in the way people produce, organize and disseminate information. Nowadays, people from geographically distributed locations want to use remote information available on their desktops, laptops, and mobile phones. This was unimaginable before the computer era, when books and journals were available only in the print form. In fact after the emergence of electronic books (eBooks) and electronic journals (e-journals), the library users have become more demanding and expecting information at their fingertips. While this trend is more or less true with library users of many developed countries, however, in India the use of e-journals in libraries is at par with developed countries but the use of eBooks did not pick up that much because of various reasons. Many eBooks are electronic equivalents of printed books, others may be published in e-format only. Older works no longer under copyright restrictions may be freely available on the Internet but many have to be paid before use. EBooks are often purchased as packages of multiple titles from a publisher.

The purpose of copyright is to “promote progress” and to encourage publishing and publications. The method used in this case was to make publishers get permission from authors for using recent works. Till 1980s, general readers had no problem with copyright restricted publications but after introduction of eBooks in 1990s many problems arose from all sides including publishers, libraries and readers. Copyright provides a public benefit, as intended, with little burden on the public. However, after the introduction of computers and networks it became much easier in distributing information. The advantage of digital information technology is that it facilitates copying and manipulating information, including software, musical recordings and books. Networks offered the possibility of unlimited

access to all forms of information. Readers who make use of their computers to share published information were technically copyright infringers.

2. COPYRIGHT IN BOOKS

Copyright is a form of Intellectual Property law protects original works of authorship including literary, dramatic, musical and artistic works such as poetry, novels, movies, songs, computer software and architecture. Copyright is assumed on creation of any literary work in this case publishing a book. Registering the book gives better framework from which one can defend a book against infringer but it is not necessary. In India copyright lasts the life of the author plus 60 years after his or her death and this may vary from country to country. To make the eBook acceptable to authors, publishers, and booksellers, we should have copyright protection similar to printed books to prevent "piracy". This will stop printing and distribution of books by unauthorized person(s) and also stop photocopying and selling a book. To educate the public, UNESCO declared 23 April as the anniversary of the birth or death of a range of well-known writers and observes as the World Book and Copyright Day.

There are a number of specified copyright exceptions for which copying is permitted, for example for use in judicial proceedings or for certain categories of people like for those who are visually impaired. Also exempted for the purposes of non-commercial research or private studies including criticism or review or for the reporting of current events. In these cases, material is allowed to reproduce for fair use and an acknowledgement should be accompanied however, the test is subjective and will depend on the circumstances of each case.

3. COPYRIGHT IN ELECTRONIC BOOKS

With the many advantages of electronic self-publishing over traditional book publishing, and an expanding market for the consumption of eBooks, many authors, publishers and organizations are already and also contemplating becoming eBook publishers. EBook publishers must be aware of several copyright issues relating many things such as cover artwork, tables, maps and charts, and excerpts of works to be included in their eBook. It is important to look at the above items copyright issues along with content when electronically publishing a book (Harris, 2010). EBooks poses many challenges because digital data is

easy to copy and send to any number of people on the network in no time. Presently there is no standard way of protecting copyright for eBooks. All manufacturers of eBook readers (e.g. Kindle, iPhone, Nook, Kobo, Ectaco, etc.) and all electronic publishers (e.g., Hachette, Random House, Penguin, Macmillan, etc.) have come up with their own method of secure distribution and prevention of unauthorized copying. Just as a typical printed book, eBook copyrights provide the sole rights to its author or the creator of the eBook. The law strictly states that it does not provide any rights to any individuals who physically possess the eBook so the purchasing or the downloading of an eBook does not include any rights as well as copyright.

Similar to printed books or works, the “Right of First Sale” and “Fair Use” also applies to eBooks. According to “Right of First Sale”, an individual who purchases and legally get a copyrighted work may sell or give away the original copy of the purchased work. As mentioned earlier, under the “Fair Use” one can grant specific privileges to the purchaser of the material. For example once an individual has finished using the eBook or do not want any more, he/she may sell it or give it away freely to someone. EBooks are encouraged to sell online so that buyer can contact the owner or author and notify them that it is a legal transaction and not a pirated eBook being sold. Industry framed strict guidelines that one has to follow while discarding an eBook: a) Remove any and all traces of the eBook from computers; b) Destroy any electronic or hard copies of the eBook; and c) Remove any data associated with the purchase of the eBook (Atlassian News, 2011). Once they decide to sell their eBook, they should make sure that no copies have been made. After selling a copy of an eBook, if copy is on a computer, it is infringement so no copies can be kept after a sale.

4. THE DIGITAL MILLENNIUM COPYRIGHT ACT VS. EBOOKS

The Digital Millennium Copyright Act (DMCA) is legislation enacted by the United States Congress in October 1998 and made major changes to the US Copyright Act. These changes were necessary in part to bring US copyright law into compliance with the World Intellectual Property Organization (WIPO) Copyright Treaty and the WIPO Performances Phonograms Treaty. The DMCA also strengthened the legal protection of intellectual property rights in the wake of emerging new information communication technologies (ICTs) like Internet (Wherry, 2009). The DMCA is not a new copyright law but an addendum

to the Copyright Revision Act of 1976 that attempts to address the issues of copyright in digital age. There are important items in this law that has a great impact on librarians.

The problems of new technology have been part of copyright law and interpretation. The issues with Napster or YouTube services allowing easy copying of protected materials are known to everyone. Now various groups representing copyright holders, publishers, librarians, educators and readers should come together and continue to prepare and try out guidelines for the sake of use and handling of eBooks in this digital era.

5. DIGITAL RIGHTS MANAGEMENT IN EBOOKS

EBooks are digital publications which uses electronic files instead of paper so they are called as 'electronic books' (eBooks), or 'digital books'. EBooks enjoy certain tools that make the reading easier. These tools allow the reader to find words in the text, highlight phrases, make comments, look up words in the dictionary, and many more other features offered by different publishers. Many times eBooks may have multimedia content like animation, audio and video elements. A web-based eBook may also have links that lead to other books available on the Internet.

In these circumstances, to protect the copyrights of the author of an eBook is a problematic issue. In spite of the existing legislations to protect copyright infringement, to reproduce a work without the writer or publisher permission is impossible. That is why nowadays most of the publishers protected their eBooks and not allowed to print and only allowed to read on a specific portable device or computer. The authors and publishers of a written work are the only ones who can decide whether an eBook can be printed or not. However, classic books whose copyright is expired and available on public domain and other such books can be copied freely. Nowadays reproduction of eBooks is strictly controlled more than printed books. In order to avoid the transmission of written contests on the web, technological tools have been designed to protect the rights of the writers and to authorize and regulate the use of information. In this, wide and safe circulation is assured for the authors of these contents since they have control over the dissemination of their works. These tools are called Digital Rights Management (DRM), a set of tools or technologies which blocks and protect written works and regulate users' rights to gain access to them by means of licenses. The DRM system has the following functions (Boucqueau, 2012):

- It establishes the terms and conditions of a work.
- It enjoys a security and control system to limit the authorized use of the works and to reduce the number illegal copies.
- It allows a safe transmission of texts.
- It protects digital contents since it does not allow the modification of files.
- It allows the registration of the different participants in the editorial process (author, publisher, libraries, etc.) so as to control the work(s) distribution.

Writers and publishers feel that the DRM provide more protection to digital information, so that they safe. In this way, publishers controlled the illegal circulation of eBooks. Publishers feel that by using DRM technologies, they can stop piracy and that boosts their sales. Since there is a demand from authors and copyright owners, to publish their works along with DRM so there is no much choice to readers rather than accepting their rules and regulations. However, we may be able to persuade authors and copyright holders to go for a reasonable DRM which is acceptable to all. Nowadays publishers are blocking the basic rights of the readers so globally it is not acceptable.

6. POPULARITY AND USE OF EBOOKS

During the last decade eBooks became so popular and many people around the world started using. In a study it was found that the reading of eBooks among 16 years and older Americans had gone up from 16 percent to 23 percent; out of those who were reading printed books during the past one year fell down from 72 percent to 67 percent. Also noticed in the same study that this shift is coincided with an increase in ownership of eBook reading devices (e-readers) in the USA. According to the Pew report, the proportion of readers who owned either a tablet computer or an e-reader gone up from 18 percent in late 2011 to 33 percent in late 2012 (Pew Internet and American Life study, 2012). During the year 2012 it is noticed that both tablet computers and e-readers were considered by most of the people as gift to their near and dear. It is estimated that about 970 million eBooks sold in 2011 which is 117% increase from 2010. According to Forester, it is estimated that eBooks sales are expected to reach 9.7 Billion by 2016 (Publishers weekly, 2010).

7. PROBLEMS OF PUBLISHERS

In this democratic world, a law that prohibits a popular, natural, and useful activity is usually relaxed. But the powerful publishers' lobby was determined to prevent the public from taking advantage of the power of their computers, and found copyright a suitable weapon. Under their influence, rather than relaxing copyright governments made it more stricter and imposing harsh penalties on readers caught due to infringement. The majority of publishers make eBooks in the world. During 2012, ALA had a series of meetings with “Big Six” publishers (Hachette, Macmillan, Penguin Group, HarperCollins, Random House, and Simon & Schuster)(American Library Association, 2013). There is increasing demand for which eBooks is transforming the publishing landscape to a great extent. The Chartered Institute of Library and Information Professionals (CILIP) strongly support the development of e-lending across the UK and work with other organisations to advocate for eBook lending in all types of libraries. Over 200 individuals, organisations and politicians have signed up to support the Let Libraries Lend eBooks campaign (CILIP, 2013).

EBooks are the future generations’ requirement therefore, all the libraries should have these collections. Copyright and access issues are to be resolved through legislation and the market. Similarly ownership issues are also to be resolved soon.

8. PROBLEMS OF LIBRARIES

(a) *Usage restrictions on Libraries:* EBooks are protected by copyright law similar to printed publications. On top of that their use is also usually subject to the terms of a licence agreed between the Library and the publisher.

Publishers and copyright owners will determine how much of a particular eBook can be printed, copied, or downloaded and this will vary from one to another. Some eBooks will only display page by page, therefore you will not be able to download and save several pages in one go, again this practice varies depending on the supplier of the eBook. The number of pages you will be able to print or copy may be limited by the publisher using DRM and once these limits are reached, the publisher will not allow the reader to print or copy any more text. If anyone abuses, publishers may withdraw access to an eBook. Information about how much a reader may copy, print, or download from an eBook is given on suppliers' websites.

(b) *Access restrictions on libraries:* eBooks can be accessed and used on desktop computers and laptops, mobile phones, tablet PCs and dedicated eBook readers. The ability to use eBooks on mobile devices, and to what extent, will depend largely on the device and its compatibility with particular digital file formats and third party software applications (apps).

(c) *Off-campus access:* All campus license eBooks are accessible on their campus intranet. Anybody want to access eBooks away out of the campus, one should take permission and setup their computer IP address as specified by the publisher or supplier. If not such eBooks cannot be accessed by readers from their home computer.

(d) *Lending of eBooks to patrons:* One of the legal rights of a copyright holder is the right to control the renting or lending of a work to the public. Copyright in a work is not infringed by lending by an educational establishment, as provided for by s.36(A) of the US Copyright, Designs and Patents Act 1988. However, a restriction on lending might be contained in the content purchase agreement, and make any lending a breach of contract (JISC Legal Information, 2013).

(e) *Copying and communicating of the work:* A copyright holder also has the right to control the copying and communicating of the work to the public. According to UK law (Copyright, Designs and Patents Act 1988), each time a work is downloaded and accessed by an individual, this is likely to be deemed 'copying' for the purposes. Using a copyright work (e.g. copying it) is not an infringement under UK copyright law if it is used fairly and with an acknowledgement for the purpose of non-commercial research, private study, criticism or review. However, multiple copying, even for educational purposes requires permission which is often granted via licences e.g. the CLA licence (Copyright License Agency, 2014).

(f) Lending Kindles preloaded with third party content: According to UK copyright laws if they load third party content/eBooks on Kindle and lend to the users the library or learning centre would breach the current stated Kindle terms and conditions of use. The Kindle terms and conditions state that the digital content is for personal use only and in terms of the accepted definition of personal use in UK copyright law, Amazon have confirmed that this does not extend to personal use of one eBook (purchased by an institution as account holder) by a large group of readers. However, Amazon

separately states that kindle content can be enjoyed on multiple devices (usually up to six) registered to the same Amazon account but the Kindle terms of use regarding digital content would have to be adhered to (JISC Legal Information, 2013).

9. PROBLEMS WITH READERS

While printed copies are in the library, readers used to physically go to the shelf and borrow the book and read and then physically returned to the library. Readers are not allowed to write on the book, tear off the pages and return it in time, if not one has to pay fines. Whereas with eBooks all these are barriers because publishers imposes many controls on content and readers. Due to the various types of restrictions imposed using DRM technologies on the eBooks, the readers had to go to library and read on their systems only and cannot download or send through email or take a print out of the eBook. Thus readers are facing lot of problems with current version of eBooks.

10. CONCLUSION

Electronic Book eXchange (EBX) is an open standard system provides solution that uses public-key cryptography for copyright protection and distribution of eBooks. The EBX Working Group is setup by a company called Glassbook and its members include Adobe Systems, Book Industry Study Group, Coalition for Networked Information, Compaq, HarperCollins, Houghton Mifflin Company, Hewlett Packard, Hitachi, Ingram Lightning Print, J-Stream, Microsoft, RSA Labs, SoftBook Press, Philips Electronics, and Xerox. According to them the advantages are: a) EBX system does not define a specific "content" file format-- it will work with a variety of formats, including OEB and PDF; b) The system will allow for the lending, giving away, and (authorized) reselling of eBooks. This is valuable for libraries, as well as readers, who are long accustomed to these freedoms; and c) The public/private key encryption on which EBX is based is a tested and trusted technology. There are, in fact, a variety of schemes for securing copyrights of digital files (NetRead Software and Services, 2014). Hoping that the problems of protecting digital copyrights will diminish significantly very soon.

If we do not like the copyright law related to eBooks, we should demand for change in all the countries. At the same time, we must remind ourselves that the law we change today may be the law protects in the future. Now educators and librarians live in two copyrights

worlds. Leading and influential publishers in the world are taking advantage of technology and tools and protecting the contents in many ways so that users are unable to use eBooks similar to printed books. It is the right time all groups including readers, educators, librarians, publishers, suppliers, technologists, and government should come together and work out a solution to the present problems. In this case WIPO may take initiative and negotiate with national and international publishers associations and frame rules and regulations that are amicable to both ends. Hope that day is not too far than later.

REFERENCES

1. American Library Association (2013). EBooks and Copyright Issues. http://www.ala.org/news/state-americas-libraries-report-2013/ebooks-and-copyright-issues

2. Atlassian News (2011). How does Copyright Law apply to EBooks? https://wikispaces.psu.edu/ display/IST432SP11Team18/How+does+Copyright+Law+apply+to+EBooks

3. Boucqueau, Jean Marc (2012). Digital Rights Management. http://www.ieee.org/about/technologies/emerging/digital_rights.pdf

4. Chartered Institute of Library and Information Professionals, 2013. EBooks Advocacy & campaigns. http://www.cilip.org.uk/cilip/advocacy-awards-and-projects/advocacy-and-campaigns/ ebooks#sthash.jNeaa4PZ.dpuf

5. Copyright License Agency (2014). CLA Higher Education Licence. http://he.cla.co.uk/your-he-licence/your-he-licence/about-the-cla-higher-education-licence/

6. Harris, Lesley Ellen (2010) EBook Publishing Copyright Issues. http://www.copyrightlaws.com/wp-content/ uploads/2010/07/Column-56-2010-1-EBooks.pdf

7. JISC Legal Information (2013). What are the copyright issues in lending Kindles and ebooks to our students? http://www.jisclegal.ac.uk/ManageContent/ViewDetail/ID/2145/What-are-the-copyright-issues-in-lending-Kindles-and-ebooks-to-our-students-01-May-2013.aspx

8. Lee Rainie and Maeve Duggan (2012). EBook Reading Jumps; Print Book Reading Declines. Pew Internet and American Life study. http://libraries.pewinternet.org/2012/12/27/eBook-reading-jumps-print-book-reading-declines/.

9. Publishers weekly (2010). www.publishersweekly.com/pw/by-topic/digital/content-and-eBooks/ article/44836-eBook-sales-jump-172-in-august.html?utm_source= Publishers+Weekly's+PW+ Daily&utm_campaign=e03bb67

10. NetRead Software and Services (2014). How to Books Copyright Protection, http://www.netread.com/howto/ebooks/index.cfm?article=copyright.cfm

11. Wherry, T.L. *Intellectual Property: everything the digital-age librarian needs to know*. New Delhi: Indiana Publishing, 2009.

SCIPR-2014: Paper presented in the National Conference, pp. 150-156

Copyright, Permission and Fair Use

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ABSTRACT

Copyright is a legal device that provides the creator the right to be the entity which determines who may publish, copy and distribute a piece of writing, artwork, music, photograph or any work of authorship aiming to advance the progress of knowledge by giving the author an economic stimulus to create new works. The fair use doctrine in intellectual property law permits one party to make use of another party's protected intellectual property under narrowly defined circumstances. Permission is required when intending to use the materials for commercial or non-educational purposes, to use materials repeatedly or when one wants to use a work in its entirety.

Keywords: Copyright, Permission, Fair Use, Works, Intellectual Property Rights.

1. INTRODUCTION

In the digital age, Intellectual Property Rights (IPRs) have become instrumental in regulating intellectual creations in modern societies that are products of someone's intellect possessing commercial value. In addition, they are an important means to securing economic returns to the creators of new technologies. The central role which they now occupy is the product of a definite process of evolution, which has emanated from country to country over time, with laws lax in some and stringent in others, depending upon their need with respect to utilisation and exploitation of works. Copyrights, fair use and permission are few such laws that hold substantial importance in both the formation and protection of intellectual works.

2. COPYRIGHT

Copyright is a right given by the law to creators of literary, dramatic, musical and artistic works and producers of cinematograph films and sound recordings. It is a bundle of rights including, rights of reproduction, communication to the public, adaptation and translation of the work. There could be slight variations in the composition of the rights depending on the work. Copyright ensures certain minimum safeguards of the rights of authors over their

creations, thereby protecting and rewarding creativity. The protection provided by copyright to the efforts of writers, artists, designers, dramatists, musicians, architects and producers creates an atmosphere conducive to creativity, which induces them to create more and motivates others to create.

2.1 Copyright Law

Copyright law is one of the segments of the IPRs. Intellectual property can be divided into two groups: (i) Intellectual property which includes inventions (patents), trademarks, industrial designs and geographical indications; (ii) Copyright which includes writings, paintings, musical works, dramatics works, audio-visual works, sound recordings, photographic works, broadcast, sculpture, drawings, architectural works etc. The World Trade Organization (WTO) is the body, which envisages a single institutional framework for all IPR issues. The WTO encompasses General Agreement on Tariffs and Trade (GATT), Trade-Related Aspects of Intellectual Properties and IPR is part of its domain.

In India, copyright regime came into practice with the Indian Copyright Act 1957. This Act has been amended several times since then, with the amendment of 1994 being the most substantial. In 1999 some of the amendments were made which include:

- Increased term of copyright to life time of author plus 60 years in case of single author, and in case of multiple authors, last deceased author plus 60 years.
- Amendment of definition of literary works and inclusion of computer programmes.
- Meaning of copyright in respect of computer programmes.
- New provisions pertaining to empower of Government of India to apply the provision relating to broadcasting organization and their performers.

Besides, the Indian Government has taken up several measures to bring about alterations in the administration of copyright law in the light of the provisions made in the TRIPS Agreement. India has participated in many bilateral arrangements or multilateral international treaties and conventions concerning IPRs which have a bearing upon the nature of amendments in the national laws. In order to get the copyright law and the IPR regulations implemented, India has the membership in a number of international bodies. Government of India has also established various organizations in order to create awareness about the IPRs among the research scholars, scientists, industrial communities and policy makers. For instance, a Patent Facilitating Centre (PFC) was set up by the

Department of Science and Technology in 1995 which publishes a monthly bulletin to provide information on IPRs and the same bulletin is circulated free of cost to more than ten thousand persons in the country.

3. PERMISSION

In order to use a copyrighted work, permission needs to be obtained from the copyright owner. The owner may be the original creator of the work or an institution or an assignee. The original author may also have transferred the copyright to a publisher or some other party. In some instances, the owner may be contacted directly. In other cases, permission can be secured on behalf of the owner by contacting an industry licensing agency or a publisher. Sometimes, the copyright owner may require a fee or impose other conditions, so as to make use of an author's work repeatedly or entirely.

3.1 Need for Permission

Permission is not obligatory if the source material is short like quoting a paragraph or referring the text in the course of a research paper; it is necessary if or the excerpt which needs to be used represents a significant portion of either of the work in which it was found or in which it is intended to be used. Also, any material which constitutes or represents the heart or key elements of the source material, such that the use could possibly serve as a substitute for the original, will also require permission. Permission must specifically be secured for:

- A single quotation or several shorter quotes from a full length book, of more than 300 words in total.
- A single quotation of more than 50 words from a newspaper, magazine, or journal.
- Artwork, photographs or forms whether or not from a published source.
- Charts, tables, graphs, and other representations where, the entire representation is inevitable being used.
- Material which includes all or part of a poem, or song lyric (even as little as one line), or the title of a song.
- Computer representations, such as the depiction of results of research on computerized databases, the on-screen output of software, reproduction of webpages, and the capture of internet or other online screen shots.

- Any third party software to be distributed as an electronic component with the user's book, a separate form letter and tracking table are available for such permissions.

Permission may specifically not be needed if:

- The use is within fair use or any copyright exception
- The work is not protected by copyright at all
- The use is within the terms of a license agreement, including a Creative Commons license from the author.

3.2 Permission Culture

Often employed by Lawrence Lessig and other copyright activists, permission culture is used to describe a society in which copyright restrictions are prevalent and enforced to the extent that any and all uses of copyrighted works need to be explicitly leased. This has both economic and social implications; in such a society, copyright holders could require payment for each use of a work and more importantly, permission to make any sort of derivative work.

Lawrence Lessig describes permission culture in contrast with free culture. While permission culture describes a society in which previous creators or those with power must grant people permission to use material, free culture ensures that anyone is able to create without restrictions from the past. A repercussion of permission culture is that creators are blocked by systemic procedures which discourage innovation. Requiring permission in such context implies that creators will have to prove their usage of material is fair, which is a process that some would decide to discontinue.

4. FAIR USE

Fair use is the most significant and most used copyright exception, particularly for teaching activities in higher education. The Supreme Court has described fair use as a guarantee of breathing space within the confines of copyright. To this end, copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work. This result is neither unfair nor unfortunate. It is the means by which copyright advances the progress of science and art.

4.1 Fair Use Doctrine

The doctrine of fair use is the most significant and, conceivably, murky of the limitations on a copyright owner's exclusive rights. Though now embodied in statutory language, the doctrine of fair use is rooted in more than 200 years of judicial decisions. Fair use is an affirmative defence to an action for copyright infringement. It is potentially available with respect to all manners of unauthorized uses of all types of works in all media. When the fair use doctrine applies to a specific use of a work, the person making fair use of the work does not need to seek permission from the copyright owner or to compensate the copyright owner for the use of the work.

4.2 The Four Fair Use Factors

4.2.1 Purpose and Character of the Use

This factor generally weighs in favour of fair use for non-profit educational uses as opposed to commercial uses. Most uses at the university can probably be characterized as non-profit educational uses. But educational use alone does not automatically result in a finding of fair use just as a commercial use is not always an infringing one. The other three factors must simultaneously be considered. It is more likely to weigh in favour of fair use if the use is transformative rather than letter-perfect copying. Indeed, recent court decisions have emphasized that when a use is substantially transformative, the other factors are less significant. The test for a transformative use is to determine whether the use merely supersedes the objects of the original creation or instead adds something new, with a further purpose of different character, altering the first with new expression, meaning, or message.

4.2.2 Nature of the Copyrighted Work

This factor generally weighs in favour of fair use if the work to be used is factual in nature rather than works involving more creative expression such as plays, poems, fictional works, photographs, paintings. The case for fair use becomes even stronger when there are only a few ways to express the ideas or facts contained in a factual work. The line between unprotected *facts and ideas* on the one hand, and protected *expression* on the other, is often difficult to draw. If there is only one way or very few ways to express a fact or an idea, the expression is said to have merged into the fact or idea, and there is no copyright protection for the expression.

4.2.3 Amount and Substantiality of the Portion used vis-à-vis the Copyrighted Work as a Whole

This is a sliding scale factor; the larger the amount you copy, the less likely it will be a fair use. The copyright statute itself does not give numbers or percentages. This deliberate flexibility in the statute allows each situation to be judged on its specific facts and increases the functionality of fair use particularly in the higher education setting. Included here is a consideration of the quality as well as the quantity of the portion used. Sometimes, even if only a small amount is taken, this factor weighs against fair use if the portion justly characterized as *the heart of the matter*. This factor and the fourth factor, market effect, work in tandem. The more taken in amount and substantiality, the greater the negative impact on the market for the copyrighted work.

4.2.4 The Effect of Infringement on the Potential Market/Value of the Copyrighted Work

If the proposed use became widespread and would negatively impact the market for or value of the copyrighted work, this factor likely weighs against a finding of fair use. Although effect on the market is often cited as the most important of the four, all factors are interrelated and must be evaluated together. The market effect factor has a degree of ambiguity in its interpretation. The purpose of the fair use analysis is to decide whether or not a permission fee is required; just because there is a permissions market should not determine whether a fee is necessary in the first place.

5. CONCLUSION

In an era of technological advance, where works could easily be reproduced without authorization and then, either sold abroad or imported back into the country, the failure to achieve a level of international recognition for copyright, permission or fair use would deprive the rights of all meaning. By the middle of the nineteenth century, however, this approach had become unwieldy and impractical, making it difficult for authors to know where and how their rights enjoyed protection. In an attempt to make published works more accessible to everyone and to avoid potential copyright disputes to the masses, it is of significance for both the author and user alike to be mindful of intellectual property laws, since their enactment and their strict enforcement are prescribed as imperative in facilitating the transition away from the older economic modes.

ACKNOWLEDGEMENTS

We would like to express sincere gratitude towards Prof. Parag Narkhede for having guided us in the formulation of this paper. His experience in paper writing has been of great help in reviewing each sub-part of the paper and inspiring us throughout. We would also like to keenly thank Prof Neha Verma Madan for proof reading the paper

BIBLIOGRAPHY

1. Mira, T. and Rajan, S. (2006). Copyright and creative freedom. Routledge.
2. Iyengar, P. (2011). Copyright enforcement and privacy. CIS/Privacy India.
3. Lehman, B.A. (1998). The conference on fair use*:* Final report to the commissioner on the conclusion of the conference.
4. Aswath, L., Reddy, N.M. (2011). Copyright law and the academic libraries*:* A perspective*. Trends in Information Management*, **8**(2), 111-122.
5. Masnick, M. (2010). Permission culture and the automated diminishment of fair use. *Techdirt*. Retrieved 15 November 2012.
6. Aufderheide, P., Jaszi, P., Bello, B. and Milosevic, T. (2014*).* Copyright, permissions, and fair use among visual artists and the academic and museum visual arts communities: An issues report to the College Art Association.
7. Films and the Copyright (Amendment) Bill (2010). Retrieved from http://papers.ssrn.com accessed on 25 June 2010.

Scholarly Communication & Intellectual Property Rights

SCIPR-2014: Paper presented in the National Conference, pp. 157-161

Fair Use Culture of Copyrighted Works in Engineering and Polytechnic Colleges of West Bengal

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ABSTRACT

This paper explores if the copyrighted materials available in engineering and polytechnic colleges of West Bengal are being used in accordance with the fair use principles of Indian Copyright Act. It also tries to find out whether the students are aware of Indian Copyright Act and Fair Use principles. Another purpose of this study is to explore whether the colleges under study have copyright management policy to check plagiarism. The quantitative data used in this analysis is collected through online and offline surveys. It is found out that almost 80% students are unaware of the Indian Copyright Act and Fair Use principles. They deliberately make copies of copyrighted materials to fulfill their academic activities like project works, dissertation etc. Very few colleges have arrangement for checking plagiarism and a well defined Access Management and Copyright Management policies

Keywords: Indian Copyright Act, Fair Use, Copyright Management Policy.

1. INTRODUCTION

In the present academic scenario plagiarism is a matter of great concern. The word plagiarism originates from the Latin word *plagiarius* which means plundering, kidnapping and seducing. In our case it means stealing someone else's intellectual property like literary works or ideas, music, computer programs etc.,and presenting them as their own without giving any credit to the original works. The cases of plagiarism are on the rise in spite of the existence of Copyright Laws in the country. Mostly the under graduate and post graduate students, and even the research scholars are found involved in plagiarism. Under graduate and post graduate students mostly copy and paste the available literature from libraries and the internet to complete project works. This is because of lack of awareness of the laws and also lack of proper guidance from their research guides. Another important reason is that these project works are not properly examined or scrutinized to stop plagiarism. As the students are taking resort to this illegal act, the money spent on the research scholars is wasted because nothing fruitful is achieved from the duplicated research works. If the students are made aware of the consequences of plagiarism through awareness programmes in the very beginning of their careers, the cases of plagiarism will surely

become less. So, it is very important for the colleges and universities to make the students aware of the national and international copyright laws and also of the provision of fair use in these laws. It is also very important for them to have a proper copyright management policy to stop plagiarism. Libraries and librarians are to play an important role to stop plagiarism. Our main aim is to disseminate information and we should take care of it that no act or law can debar us from performing our duty. But it is also very important for us that in no way we should encourage plagiarism or violation of the law. Thus it is imperative for us to formulate a healthy copyright management and access management policies for our libraries to promote healthy academic culture.

2. WHAT IS COPYRIGHT?

Copyright is a legal right given to the creators of literary works, musical compositions, lyrics, art works like paintings, sculptures, drawings, engravings, cinematographic films, sound recordings etc. A copyright holder has the right to reproduce the work, make communication to the public, adapt and translate the work.

2.1 History of Indian Copyright Act

In 1847, the Governor General of India passed the Indian Copyright Act of 1847 (Act XX, 1847). In 1911, the Law of Copyright was codified in England and was applied to all countries under BritishDominion. In 1914, the Indian Copyright Act of 1914 (Act III, 1914) was enacted, and in 1957, the Indian Copyright Act 1957 (14 of 1957) was legislated. Major amendments were made to the Indian Copyright Act in 1981, 1984, 1992, 1994, 1999, 2010 and in 2012.

2.2 Coverage

The Indian Copyright Act protects all ‘Indian works’, i.e., literary, dramatic and musical works the author of which are citizens of India, published in India and in case of an unpublished work the author was a citizen of India during the making of the work.The works that are protected by the law includes artistic works including painting, sculptures, engravings, drawings, photographs and works o architecture; musical works, sound recordings, cinematograph film and government works.As Member of Berne Convention and Universal Copyright Convention, the Indian copyright law also protects copyrighted works of other member countries of these conventions.

2.3 Copyright Infringement

Unauthorized, illegal or illicit reproduction of copyrighted work without the prior permission of the copyright owner for monetary benefits is copyright infringement. But when copyrighted materials are used for research, criticism or review and for reporting of current events and current affairs, it will not constitute infringement of copyright.

2.4 Fair Use

Fair use is the most important copyright exception to promote the progress of science and arts. The use of copyrighted works for nonprofit research or private study, criticism and review;use of copyrighted materials for judicial proceedings or legislative purposes; performance of copyrighted works to a non-paying audience, news reporting, and parody, are termed as fair uses.

3. OBJECTIVES OF THE STUDY

- To explore the degree of awareness of Copyright Act among the engineering students in West Bengal.
- Whether the students are aware of the fair dealing provision of Indian Copyright Act.
- Whether the colleges in the state have a balanced copyright management and access management policies.
- Whether the colleges use plagiarism checking tools or software, and
- To promote fair use culture of the copyrighted materials and thereby encouraging students to create something new and unique.

3.1 Methodology

A questionnaire consisting of eight questions was distributed to the students and librarians of some govt. engineering colleges in West Bengal. Some private colleges which are very famous amongthe students were also included in this study. In all 500 students, faculty and librarians were asked to answer the questionnaire. But only 446 were received. So, this study is based on the data gathered from the 446 respondents.Before analysis of the data is presented, a short introduction of Indian Copyright Act is given.

4. DATA ANALYSIS

Table 1 shows the number and percentage of the students, faculty and librarians involved in the study.

Table 1 Category-wise respondents

Category	No of respondents	%
Students	385	86.33
Faculty	41	9.19
Librarians	20	4.48
Total	446	100

Table 2 shows that most of the students are unaware of copyright laws. Only 15.06% students are aware of copyright laws in India. Even the 56.1% of faculty members are unaware of it. These faculties are of the age group between 30 to 35 years. Almost all the librarians under study (90%) are aware of copyright laws.

Table 2 Awareness of copyright laws

Category	Aware (%)	Not aware (%)
Students	58 (15.06)	327 (84.94)
Faculty	18 (43.90)	23 (56.10)
Librarians	18 (90)	2 (10)
Total	94 (100)	352 (100)

Table 3 shows that very few students are aware of Fair Use of copyrighted resources. Naturally they are found guilty of verbatim copying of available literature in their research or project works. They must know that educational use only is not enough to constitute Fair Use.

Table 3 Awareness of fair use of copyrighted resources

Category	Aware (%)	Not aware (%)
Students	32 (8.31)	353 (91.69)
Faculty	18 (43.90)	23 (56.10)
Librarians	18 (90)	2 (10)
Total	68	378

Table 4 shows that students donot know about Access Management Policy and Copyright Management Policy. About 70% of the teacher community are not sure about it. Almost every librarian has made it clear that he or she has not any well defined Access Management Policy and Copyright Management Policy.

Table 4 Having Access Management and Copyright Management Policies

Respondents	yes	No	Not sure
Students	0	0	385
Faculty	0	11	30
Librarian	2	18	0
Total	446		

Table 5 Availability of plagiarism checking tools

Respondents	Yes	No
Students	18	367
Faculty	0	41
Librarian	2	18
Total	446	

Table 5 shows that only two colleges under survey have means of checking plagiarism.

5. CONCLUSION

This study has led to the conclusion that Fair Use culture of copyrighted works in engineering and polytechnic colleges in West Bengal is not satisfactory. Both the students and faculties are unaware of Copyright Act. It is recommended that students and teachers are made literate about the copyright laws of India and other countries. Universities and colleges should develop a well defined Access Management Policy and Copyright Management Policy for the sake of the progress of science and arts. This is also very important to combat plagiarism especially in the era of ICT when print resources are fast declining to make room for the e-resources.

BIBLIOGRAPHY

1. Chaudhuri, S.K. (2012). Fair use vs copyright non-compliance among the academic community in universities of developing nations. *International Journal of Digital Library Services*. 2(1), 135-147.

2. Schneider, P. (2001). Copyright laws and ethics in an academic library. *Current studies in Librarianship.* 25(1/2), 71-79.

3. Kumar, Stanley Madan (2011). Copyright and fair use: Clash of titans in the digital era. BS Publications, Hyderabad, pp. 397-398.

4. www.copyright.gov.in.

SCIPR-2014: Paper presented in the National Conference, pp. 162-164

Conference Director's Address

Intellectual Property Rights and Scholarly Communication

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Knowledge is power Francis Bacon/Thomas Hobbes, 16th/17th Century
Knowledge is an asset 20th and 21st Century

Is knowledge a power? Is knowledge an asset? In order to answer these questions we need to perceive the power of knowledge and realize how knowledge forms itself as an asset. If knowledge is not a power, human beings could not have gained control over the nature and all natural groups. It is with the power of knowledge humans were able to emerge themselves as superior creatures compared to all other creatures in the universe. It is the power of knowledge that helped humans to land on moon and conquer the Everest.

Knowledge is not only power that endowed man to get control over the nature, but also an asset that can enrich a person. Today, some of the top rich persons in the world became richer by the virtue of their knowledge assets. The outstanding examples are Bill Gates, Jennifer Rowling, Larry Page and many others.

The above examples clearly denote that knowledge is both a power and an asset. In view of this should we not say that *Knowledge is a powerful asset?* It is because of this the civilized society realized that the rightful owner of this asset should be protected with his/her property rights. As knowledge is an output of human intellect, it is called Intellectual Property (IP) and the rights of its generators or creators are called Intellectual Property Rights (IPRs).

Unfortunately, even in the elite society, there is considerable rate of crime related to abuse and misuse of IP. The Frontier Economics recently estimated that US Internet users annually consume between US$7 and 20 billion worth of digitally pirated recorded music (the RIAA.com site http://www.riaa.com/faq.php,visited on 21.07.2014 at 05.52 pm), presents the scope of the problem. According to the Information Technology & Innovation

Foundation, the digital theft of music, movies and copyrighted content takes up huge amounts of Internet bandwidth –24% globally, and 17.5 % in the US.

The blog of go-gulf.com (http://www.go-gulf.com/blog/online-piracy/, visited on 21 July 2014 at 05.26 pm) presents piracy by region; the worldwide rate of piracy is 42%, Central or Eastern Europe 64%, in North America it is 21%, among the top ten is China with 91% and India with 60% in 2010 (latest figures are not available).Of course, the situation might not have improved much in these few years.

There are almost open instances of stealing of IP in the form of infringement of Copyright Act and plagiarism. In order to address this problem, we need to ensure fair practices relating to scholarly communication process or activities and protection of IPR.

It is quite deplorable state-of-the affairs that proper care is not taken up at the time of identification and formulation of a research problem. The factors that are responsible for this are: (a) Negligence on the part of the researchers/Scientists/research scholars and their supervisors in conducting an exhaustive literature search for formulation of research problems, (b) Lack of availability and accessibility of required library services and bibliographic and full-text databases, (c) Lack of research aptitude and/or knowledge of research methods on the part of the researchers/Scientists/research scholars and their supervisors, and (d) Compulsions to produce research output resulting in proliferation and duplication of research effort, and intentional or unintentional involvement in plagiarism.

The solutions for this are:

- Training for the scientists/researchers/research scholars and their supervisors
- Ensuring standards in research activity
- Extend free access to the bibliographic/full-text databases
- Discouraging, copying and plagiarism
- Strict implementation of the law

When scholarly communication suffers from certain issues and limitations, the protection of IPRs poses tougher challenges; right from the consumer to the producer every stakeholder poses problems to the IPRs protection. Everybody claims their rights and they misuse and abuse their rights. While many a publisher do not honor the rights of the authors and deprive the authors of their right to royalty, in the digital era, the consumers,

i.e., the end users, copy, reproduce and share a lot of content that is available on the Net. When everyone at every stage infringes the copyrights of the creators of IP, the situation becomes uncontrollable. Of course, the governments of every nation state are striving hard to ensure protection to the creators of the IP by enacting suitable legislations to protect each and every type of IP, besides copyright acts, patent rights and trademark regulations, there are also acts like SOPA (Stop Online Piracy Act), and PIPA (Protect IP Act), an Act to protect another Act. How many acts we need to protect each and every Act? The most pathetic part of it is that the literate and the elite are also involve in unfair practices.

What are the solutions for this? The following measures might prove to be effective in addressing the problem:

- Reasonable/affordable pricing of the documents
- Levying heavy penalty to the publishers/distributors and other stakeholders who deprive the authors of their IPR/royalty
- Educate and bringing in attitudinal change in the publishers and the consumers to observe minimum ethics (it should happen right from school education)

The case of Prof. B.S. Rajput, who was the Vice-Chancellor of Kumaon University, should be an eye-opener and the scholars and colleagues of academics and scientists should not proceed with publication of their scholarly output without written permission of their joint author(s) to publish their joint papers. Fortunately or unfortunately plagiarism has become a serious issue in the civilized society.

John Milton said that a good book is the precious life-blood of a master spirit, embalmed and treasured up on purpose to a life beyond life. Such a precious life-blood of a master spirit would also change the society and the world. Such contribution should duly be rewarded. Hence, protecting rights of the creator of IP becomes responsibility and duty of everyone of us.

About the Editors

Dr. Y. Srinivasa Rao is Dy. Librarian, School of Planning and Architecture, Vijayawada. Prior to this, he worked at National Institute of Technology, Rourkela for over ten years, and at the Institute for Defence Studies and Analyses, New Delhi. He has 16 years professional experience. He is a post-graduate in LIS from Andhra University (AU), PGDCA from Pondicherry University, and PhD from Sambalpur University. He was awarded Gold Medal and Merit Scholarship in the area of LIS in the year 1996 from AU, Visakhapatnam. His areas of interest include networked library systems, digital resources and services, IPRs and OA. He published more than 15 papers in various National and International journals, conferences and edited volumes. He organized and delivered lectures in various conferences, workshops and seminars at NIT Rourkela and colleges and universities as resource person.

Dr. Aragonda Lakshmana Moorthy, after superannuating as Scientist G and Director, DESIDOC, DRDO, Ministry of Defence, Delhi, joined Brah Mos Aerospace, an Indian-Russian JV Company, Hyderbad as Chief Consultant (InfSci). Dr. Moorthy received the DRDO Best Popular Science Communication Award-2009 from Prime Minister on 26 May 2010. He received Lifetime Achievement Award-2011, from Pusthakalaya Parishad, Jodhpur; SR Ranganathan-Kaula Award-2009 Medal and Citation (March 2011) from Prof PN Kaula Endowment for Library & Information Science, New Delhi; SIS Fellowship-2009 from the Society for Information Science; ILA-Kaula Best Librarian Award-2008 and ILA-CD Sharma Best Paper Award (2008) from Indian Library Association. For his pioneering efforts in creating and enriching content of the official DRDO website drdo.gov.in during 2011-12, the Ministry of Communications and Information Technology awarded DESIDOC the prestigious Webratna Awards 2012 and Silver Icon Trophy. Due to his efforts in the use of Hindi in Official work during 2007-12, DESIDOC was bestowed with the Rajbhasha Ratan Award by the Rajbhasha Swabhiman Foundation of India in 2013. He obtained MSc and BLISc from SV University, Tirupati; ADISc from DRTC, Bangalore; and PhD from Karnataka University, Dharwad. During his 36 years of professional expertise he published about 60 papers, edited more than 30 publications. He was Editor (later Editor-in-Chief) of 6 periodicals (2 peer-review) of DRDO and 2 LIS periodicals. He sphere-headed open access to DRDO publications and is specialized in IPRs, scholarly communication, OA and digital libraries and delivered over 100 lectures throughout India.

About the Book

Developing countries like India are keen in creating an R&D with their intellectual creativity and innovation. This booklet Scholarly Communication and Intellectual Property Rights presents seventeen papers presented in the Conference held at SPAV during 4-5 August 2014. The papers are divided into three important subject areas viz. scholarly communication, open access(OA), and intellectual property rights (IPRs).

Part one contains six papers received deal with communication and publication of scholarly content. It includes a theme paper covering the Theme of the Conference followed by case study of bibliometric analysis of content of scholarly journals published in Odisha indicating regional growth of science communication at various levels; citation analysis of doctoral theses; information seeking behaviour of users; e-learning techniques and e-publications; digital repositories; and impact of information technology on entrepreneurship.

Part two of the volume contains five papers discussing various facets of OA focusing on role of library professionals in OA, genesis, growth and use of OA resources in academia and ways and means and opportunities for library professionals in delivering scholarly literature to the research community; impact of OA system in India and abroad, issues and barriers to OA movement. It also discussed about a prominence of open educational resources and social networking usage to bring OA resources nearer to the youth and users. Part three focuses on IPRs with a theme paper on copyright in OA era highlighting plagiarism syndrome and remedies to contain it. Also IPR and significance of patents in India covering overview of IPR, comparison of trends during 2003-13; patent filing and grants by subject, region in India over last 10 years and comparison with Asian countries during 2001-12; and path to commercialization of intellectual ideas; two papers exclusively dwell on copyright, permissions and fair use; and fair use culture in engineering and polytechnic college students in West Bengal.

BSP BS Publications
A Unit of BSP Books Pvt. Ltd.
4-4-309/316, Giriraj Lane, Sultan Bazar, Hyderabad - 500 095. (A.P.)
Ph: 040-23445688 / 605. Fax: +91-40-23445611.
e-mail: info@bspbooks.net, marketing@bspbooks.net
Website: www.bspbooks.net

ISBN: 978-93-83635-19-1
9 789383 635191