

66. A Novel Web Based Effort for Sharing of Scientific Ideas and Results

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Abstract. This paper report the study of a web based online portal (www.thinkbiosoln.com) that provides green solutions to cater to small and middle level companies and promote solution based research towards promoting science. The website targets to harness the power of online portal to connect to prospective researchers, and promote them suitably towards developing products.

A complete study on promotion of said technology and there output in number of feasible solutions is shown in this paper. It is a novel model for future ventures to invest in science communication with a goal of resource building and promoting innovation and research.

Keywords: Innovation portal, Science Promotion, Entrepreneurship.

Background

Computer connected through internet and intranet as a platform for communication was presented and modelled much before the actual practice by Licklider et.al in 1968. [1] Though early developers in communication were positive about the possibilities, they feared that an online communication of ideas will be restricted due to lack of externalized modelling of the user's emotion and may hinder successful or competent transfer of relevant emotions which justifies the data. Other potential threat to such possibilities includes slow internet connections, interactive web spaces, and lack of high end graphics. [2-3]

Also the potentiality for scientific communications was shown by Robert Kraut to be majorly dependent on the distance between the scientific departments and the subject area of expertise. [4] The clauses for observation were elaborated as communication frequency, quality of communications and cost of communication. The equation monitoring communication frequency by distance between collaborators showed positive collaborative probabilities for near and relevant research fraternities.[5-7] However recent advances in communication speeds and the advent of interdisciplinary research in recent years have led to substantial changes in the proposed Equation (i) suggested by Kraut et.al.

$$y = 4.82 + 4.56 \times \text{distance} \times .459 \quad [4] \quad \{i\}$$

Y. F. Le Coadic uses a mathematical approach for studying the propagation of scientific ideas and operation and structure of science and technology information systems. They have shown information system to be a dynamic and orderly social system which exhibits impressive features of regularity and law within deterministic limits. It has also been observed that by formalizing the informal channels, the overall effectiveness of communication can be further improved. They have shown the evolution with time of the number of researchers getting an idea in the selected disciplines and fields. [8-13]

As Thomas Goetz explores the possibilities of open science from operating system and softwares to wikis and online journals, it clearly shows that open sourcing of ideas is eminent in all fields for a cognitive development. Ventures like Co-lab have been envisioned as successful beginning towards building an integrated approach for collaboration, modeling and inquiry. [14]

Also social networking websites in recent year have led us to believe in the power of developing a web based communication system. With the advent of online social networking as shown by Gross et.al people can communicate their ideas and thoughts to a wide audience of linked and relevant user. [15] However to promote a scientific ideas based on online networking we believe that a better mediator is needed to scan through relevant research and innovations by investors and effectively reduce search time.

Introduction

The paper discusses the possible effects and methods of target based sharing of scientific ideas and expertise through an online portal. Online portals are already in vogue for spreading ideas and social networking in the current form. The study points to modes of popularising the same and their respective outputs on the different segment of users. The study aims to aid any future development of scientific communication based websites and planning of promoting the same to target user bases with a focus on geographic factors.

The study is based on an online portal that caters to connecting innovations and research to potential users. Researchers register their novel idea in the online forum, with relevant details and relevant expertise in the area of the proposed work. Ideas are invited from broad spectrum of innovators, like school students with an innovative device to laboratories with cutting edge technologies. Prospective registered student researchers are connected to relevant research labs for towards developing feasible technologies.

Potential investors and companies can also register with the online portal and are kept updated with the relevant innovative ideas and research in their field of interest. Small and middle level companies which shun form buying expensive green technologies can connect to indigenous research labs for building alternate technologies. They are updated using a no-profit based peer reviewed system towards the merits of potential research proposal, towards an optimized decision based investment.

The website acts as a connecting media, between researchers and investors. It open sources innovative idea from grass root level to the cutting edge of science, presented to competing investors.

The novel effort aims in stimulating original scientific thought towards building greener technologies, and making them feasible by connecting to relevant investors. It also promises to make basic research pursued in universities and national laboratories to strive toward building technologies based on concurrent basic research relevant to their own expertise. Investors find a plethora of innovative technologies, from basic ideas to peers in respective fields, with a vast spectrum of investment towards developing technologies. It eliminates present practice of funding research only in peer reviewed groups at national laboratories and promotes small investors towards small practicable science initiatives.

We have studied the different modes to promote the same among different user groups of researchers, about the potential of different groups of researchers to contribute, and its impact on industries. The work gives a guideline for development in future promotion of scientific ideas through web based online portals.

The co-relation between the researcher i.e. innovator, intermediate website and the industry accepting the research are shown by a pictographical relation in figure 1. The figure shows possibilities of transfer of ideas and paper is aimed in studying how each factor adds towards successful transfer of ideas between R (Researcher /innovator), M (Intermediate online portal) and I (industry).

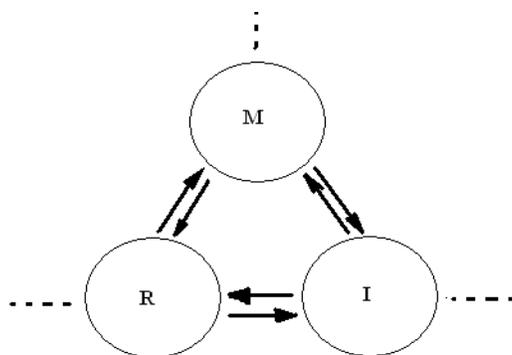


Figure 1. Knowledge transfer co-relation between Innovator, Intermediate website and Industry

Method

The methods of tabulating the following database and co-relations are based on a real time analysis of a said web based effort <http://www.thinkbisoln.com> for promotion of scientific ideas and their transfer to industrial and corporate solutions. The user registers online, supplying his innovation and expertise detail using an online form as shown in Fig 2. Questions marked with “*” are compulsory query fields. The analysis is based on real time data collected on the said website.

Information diffusion towards promotion of online site through different medium

For promotion of the said technology we have used different methods to convince to audience about its utility. This survey tabulates the diffusion of promotional information about the technology through various medium of communication i.e. online promotion, promotion at international conferences, journals, event sponsoring and trade pamphlets and catalogues.

After each promotional event was organised the number of users registering on the site was monitored using the mandatory third query in Section 4 of Fig 2 which gave source of promotional information about the said website for individual users.

1. Personal Data	
*First Name:	
Middle Name(s):	
*Last Name:	
*Birth Date:	
*Nationality:	
*Academic Title:	
Scientific Discipline:	
Permanent Appointment:	
Yes /No	
2 .Institution	
*Current Institute:	
*Address:	
Webpage:	
*From Date :	
*To Date :	
*Exact Degree title:	
Scholarships held :	
3. Research contribution	
Publication :	
Number of foreign publications:	
Average Impact factor:	
*Research Interest:	
4. Solutions I want to provide: (200 characters)	
*What is your current level of work in the solution you want to provide: (200 words)	
*Category	Pharmaceutical Biomedical Biomechanical systems Green pathways Green software Green technologies

*How did you came to know about the site ?

Figure 2. Questionnaire to tabulate registered user's data.

The comparative study of flow of information from researchers based on expertise

Here we have done a survey of the registered user profiles. The systematic study uses the registered user’s database of <http://www.thinkbisoln.com> as collected using the Form in Fig.2, to gauge the propensity of usage of online technological transfer websites along with a percentage of contribution. It was assumed that all age groups were equally susceptible to know how, about the presence of the site and information diffusion regarding promotion has an even distribution across age groups. The contributions were weighted using the Y. F. Le Coadic et.al. diffusion parameter based on t(timing), N(audience) constant for different medium.[8]

Media of communication	Technology		
	t	N	
Journal publication		19	10,000
Patent		36	
1,000			
National conference		16	1,000

Figure 3. Diffusion Parameters by Y. F. Le Coadic et.al

The weighted value for each age group was called expertise and the contribution is defined as shown in Equation ii.

$$PC = (E \times PP \times 100) / \sum C \quad \text{\{ii\}}$$

PC = Percentage of expertise, E = Expertise, PP = Percentage of profile and C = Contribution

Propensity of transfer of technology to industry

Different allied industries were questioned on their eagerness to accept innovations targeted as low cost alternatives to and tallied against the actual integration rate. This study shows the effectiveness of knowledge transfer with relevance to the industry. The surveyed industries are pharmaceutical, biomedical, green chemistry, green information technology, and waste processing industry. The differences give us an idea towards market opportunities and saturations for promoting research in relevant industrial sectors.

Analysis

Information diffusion towards promotion of online site through different medium

Information diffusion graphs plotted shows that rate of diffusion of information is highest in international conference, event sponsoring, trade catalogues, journals and online promotion in order of merit as shown in Fig

4.However the rate of penentrance is inversely proportional to the residence time. So for short term promotions

International Conferences seemed promising as for longer impact time online promotion is recommended.

The comparative study of flow of information from researchers based on expertise

Expertise and probability of registrations are two most important factors that help web promoters to focus on target user groups. Here we have segregated users based on there age and have mathematically asserted the most prominent user group that should be targeted for online registration. The analysis shows peaks at age group twenty five to thirty five in terms of balance between web usage and relevant expertise. The expertise is calculated as a stochastic diffusion parameter with up to ten percentage error limit. With wider penetration of web usage across age groups the trend should tend to move towards the right of the curve.

Propensity of transfer of technology to industry

The survey shows the possibility of growth of innovation transfer in case of pharmaceutical, biomedical, green information technology and waste processing industry. However the green information based services seem to have the maximum growth potential among the surveyed industries. The green chemistry section shows a minor negative growth compared to predicted growth within stochastic limits hence has a saturated market.

Conclusion

The study clearly shows the possibility of advent of web based technology for promotion of open sourcing of scientific ideas. Marketing of the brand needs to be done with an overall balance between rate of promotion and

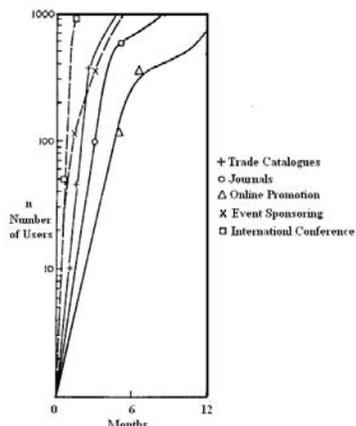


Figure 4. A survey of the information diffusion graph towards website promotion

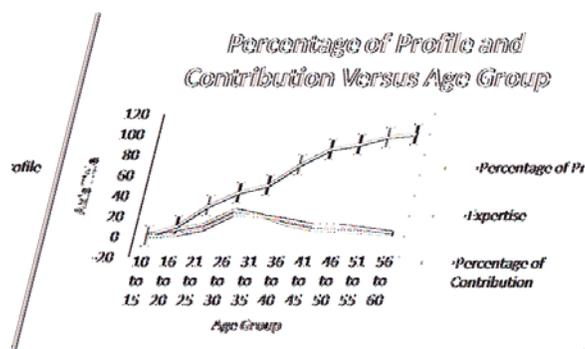


Figure 5. Comparative study of registered users and expertise

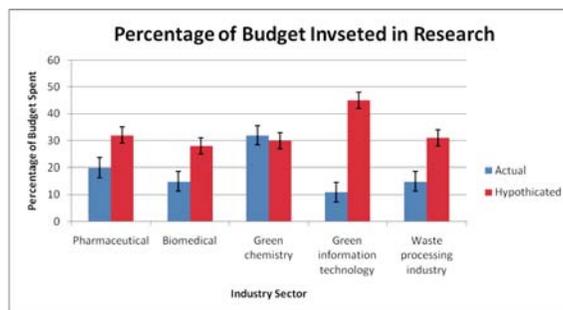


Figure 6. Propensity of transfer of technology to industry

residence time depending on the nature of promotion. The researcher database is prone to be most useful in the twenty six to thirty six years where there is a stable blend of expertise and openness to usage of the internet, prone to maximum contribution towards online innovation promotion. Multiple industries find scope for a web innovation transfer to grow with a higher propensity in areas like Green information technology and Waste processing industry.

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