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- Rig Veda 1-89-1

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Phones: +91-80-2238 2798, 4277 2000
E-mail: nsv@mpbim.com

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N. Ramanuja

Chairman - Bharatiya Vidya Bhavan, Bengaluru Kendra
email: itsramanuja@yahoo.com

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re_see@rediffmail.com

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Professor of Marketing
Marshall University, Huntington, USA
tateu@marshall.edu

Open Innovation – A Need of the Hour for Indian Small and Medium Enterprises

Sumukh S. Hungund & K.B. Kiran*

Abstract

Innovation is the key to maintain competitive advantage in a market and gain leadership. Ideas are the most essential input for an innovation process to start. Innovation has long been considered as a prominent growth engine to brace competitiveness of the firm in the market. Also, Innovation plays a key role in providing sustainability and growth for the firm. But yet firms are not clear about the type of innovation management practices that need to be adopted for generating an idea and developing a product. A shortened product life cycle, constantly growing research and development cost, more rapid information flows, and increasingly interconnected customers have supported a paradigm shift toward an open approach to innovation. A firm needs to choose between Open Innovation practices and Closed Innovation practices for its sustainable development. Small and Medium Enterprises (SME) of Information Technology Industry in India have adopted innovation practices to the extent of fifty seven percent. Open Innovation has become one of the most recent topics for research in the area of innovation management.

Open innovation is a pioneering mechanism with increasing number of studies in the literature with large organizations and in the context of Europe and West. However, there are not many studies on Open Innovation and SME in Indian context. In addition, there are still a number of issues unclear in Open Innovation Theory due to its wide concept. Therefore, this paper aims to critically review the existing literature and develop a conceptual framework to establish a relationship between Firms, Open Innovation Practices, SME Characteristics, and firm performance. The paper establishes a need for studies in the area of open innovation among small and medium segments of the technology oriented industry. The paper also presents the research questions and research objectives of the study along with hypotheses. The paper concludes with the need of research and the contribution that will be made from this study to the world of academia.

Key Words: *Open Innovation, Closed Innovation, In-bound Open Innovation, Outbound Open Innovation and SME.*

* Research Scholar & Professor respectively of School of Management, National Institute of Technology, Karnataka - 575 025

Introduction

Innovation has been widely accepted as an essential competitive tool for any enterprise for a sustainable growth (Drucker, 1985). Innovation practices have been considered as a prominent growth engine by Large and Small & Medium Enterprises (SMEs) (Yifeng, 2011; Mashilo and Iyamu 2012.). National Knowledge Commission report (2007) reveals that innovation has the most significant impact on competitiveness for large firms, while SME's innovation will make indelible impact on increase in market share. But, SMEs are observed to have difficulty in implementing innovation practices (Iakovleva, 2013). Today, the innovation process is undergoing profound changes in the way it is managed (Chesbrough, 2003). Open innovation has become one of the hottest topics in innovation management (Wang and Tang, 2013). The open innovation approach has been flaunted by the area of innovation management and technology (Mazini et al., 2013). Open innovation, which was named and defined by Chesbrough (2003) as the "purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively". Also Open innovation models emphasizes using a broad range of knowledge sources for a firm's innovation and invention activities by including customers, competitors, and academicians to exploit the firm's IP (West and Gallagher, 2006). Also it is said that Open innovation boosts the probability of the firms to achieve business growth by evolving new products (Freel, 2006). Given the background of Innovation's significance and recent development of Open Innovation studies across the globe it is of utmost importance to find out the extent to which the Open Innovation practices have been adopted among technological SMEs in India. Hence this paper focus on the need for Open Innovation practices among software product of SMEs. The paper is divided into following sections. The paper begins with introduction followed by review of literature, conceptual framework, research questions and objectives, hypotheses statement, results and discussion and then conclusion and limitations of the study.

Review of Literature

This section discusses about various literature reviewed for the study. Lichtenthaler U. (2008) reveals that many

firms still adopt and practice closed approaches to innovation despite a trend toward open innovation is seen. Also opines that there is a need to study about practices of Open Innovation in Small firms so as to understand the relation between the approaches to open innovation and firm's capabilities & culture in managing technology.

V. van de Vrande et al. (2009) found out that SMEs both in manufacturing and service domain do engage in open innovation practices in Netherland and also opinions that medium size firms are more active in engaging open innovation practices than compared to smaller size firms. Further the findings revealed that SMEs pursue open innovation principally for market – related motives and face challenge to adopt open innovation was related to cultural issues. Also the study opines that there is need to study innovation adoption and practices in broader samples across different geographies. Open Innovation is useful in reducing costs of research and development and create new opportunities for growth. Open innovation leads to business growth (Huang et al. 2010). Jayawardhana A. and Surangi H. (2010) opines that there is significant difference in the adoption to open innovation practices within medium and small firms and reveals that growth and sustainability of the firm is attributed to the adoption of open innovation practices and also a positive trend is seen among women entrepreneurs of the handicrafts industry to adopt open innovation practices. Gumus B. and Cubukcu A. (2011) opinions that awareness of Open Innovation among Turkish firms is very low and mentions that for a sustainable growth a culture of innovation is essential in the firm. Also opines firm's characteristics are not related to innovation practices adopted by firm. Xin S. and Wang Q. (2011) feels that SMEs needs open innovation for sustaining rather than for transformation to large organization. Also mentions that practices of innovation should be carefully adopted by SMEs. But feels that the type of Open Innovation practices considered for firm performance is unexplored. Xu and Zheng (2012) in their work discuss about definition, background and research foundations of open innovation and suggests about the need to study factors influencing open innovation. Huizingh E. (2010) opinion that there are many open innovation issues needs to understand better and feels

that still there is lack knowledge about practices of open innovation.

Kafourous M.I. and Forsan N. (2012) suggest that university collaboration with firm need to be explored and an integrated approach of open innovation and firms' performance needs to be investigated. Tian and Feng (2010) investigated the types of external technology sources in open innovation and finds that apart from competitors, the external technology sources include suppliers, users, universities and research institutes, R&D service companies. Abulrub A. and Lee J. (2012) opinioned that company size and market type influences to adopt open innovation practices. Further feels that external partners are very important for firms to adopt open innovation. Since the study considers both large and small companies, the results need to be investigated only for SMEs. Balasubrahmanya M.H. (2012) SMEs internal technical competence and their nature of innovation help them to fetch external support. Further felt that SMEs technical competency clubbed with external support will help them exploit market opportunities to achieve higher innovative performance. Further suggests that there is a need to study the type external support need for SMEs in the Indian context. Lukas et al. (2012) reveals that successful innovation for a company requires a continuous and sustainable flow of innovation in order to stay competitive and this can only be achieved through collaborative approaches. Janeiro et al. (2013) finds that successful firms tend to rely more on universities for innovation. Further opines that a causal relationship exists between firm's innovation and access to external sources like universities. The study stresses a need to study the reasons encouraging the firms to seek out external partners to a greater extent than others, and how access to external knowledge actually shapes and impacts firm's levels of innovation performance. Rangus and Drnovsek (2013) opinions that the most common practices of open innovation are customer involvement, employee involvement and pre-venturing activity. The study revealed that firms collaborate with customers and suppliers. Also results suggest that larger companies are more involved in open innovation activities and smaller companies are more inclined to selling/licensing of their IP. Ades et al. (2013) analyses three cases of firms whose innovation

management processes have been fused and finds that the implementation of Open Innovation practices is challenged by cultural issues. Segers (2013) observed that there is a strong collaboration between research institutions, universities, venture capitalists, high-risk finance providers, existing large companies, and new biotechnology firms in Belgium. Also feels that basic innovative activity occurs mainly in university-based new biotechnology firms (i.e., new, small firms that are spin-offs from university research centres performing state-of-the-art research). Further mentions that there is a need to study the practices of open innovation and performance of firms, and the observation about collaboration also needs to be examined and validated in high technology based industries. Revutska (2013) feels that the makeover of companies in the open innovation business model perspective is from the viewpoint of strategic development. Companies benefit from the quick commercialization of their ideas and will be able to improve their experience through the diffusion of innovations, among other companies in the market i.e. startups and spin-offs. Further mentions that university education centers play a vital role in the process of open innovation models creation. These centers may be involved in the formation and commercialization of knowledge and innovation. Deegahawature (2014) suggest that firms implement inbound open innovation at a moderate level and suggest that firms that adopt inbound open innovation should be cautious on capabilities and environment turbulence. Accordingly, this study contributes to open innovation literature by stressing the importance of capabilities, and insisting the applicability of capability perspective in implanting open innovation but fails to explain about technology exploration through external agents like academia. Hence there is a need to study the collaboration activities and its influence. Kafourous and Forsan (2012) feel that a study on industries in which intellectual property laws are less effective in protecting intellectual property may produce different results.

The literature review suggests that the studies conducted so far in view of Open Innovation are largely in the context of the West. However there are limited studies which compare both open innovation practices and closed innovation practices. From the empirical

studies of Lichtenthaler U. (2008), V. van de Vrande et al. (2009), Tian and Feng (2010), Gumus and Cubukcu (2011), Abulrub and Lee (2012) it is clear that studies have only concentrated on adoption of open innovation only. Very few studies discuss about Open Innovation practices and firm performance (Mazzola E. et al. 2012, Cozzarin, 2004, and Santos et al. 2014) but these studies are in the context of European and American firms. Also there is little or no systematic evidence on Open Innovation approach adopted and its influence on firm performance (Sisodiya et al. 2013). Hence there is a definitive need to compare different open innovation practices and its influence on firm performance.

Conceptual Framework for the Study

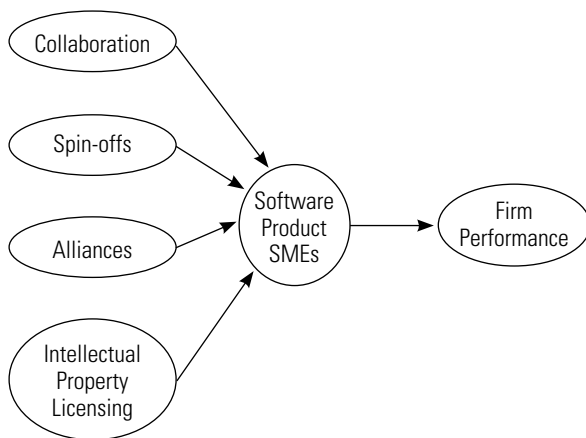


Fig 1: Conceptual framework of the study
Source: Literature Review

Firm Performance which is dependent variable is measured through change in Market share (Y). The Open Innovation practice which is the independent variable is measured through the extent to which the following practices are adopted by the software firms. The practices include collaboration with academic institution or universities (X1), suppliers (X2), customers (X3), and R&D labs (X4), spin-offs (X5) made by the organizations as teams of product development or as separate entity, Alliances (X6) made with other organization and licensing of Intellectual property (X7). This is represented through the diagram in the fig 1.

This can be represented as

$$Y = F(X_1, X_2, X_3, X_4, X_5, X_6, X_7)$$

$$Y = a_0 + a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_5X_5 + a_6X_6 + a_7X_7 + e$$

Research Questions

The study proposes to investigate the conceptual framework shown in fig 1 through the following research questions:

1. What is the current status of awareness and adoption of Open Innovation practices among Software SMEs?
2. Do Open Innovation practices influence the performance of firm?

Research Objectives

The research questions are met by the following research objectives:

1. To assess the awareness level and adoption level of Open innovation.
2. To examine whether the Open Innovation practices influences firms performance.

Hypothesis Statement

To measure the research objectives following hypotheses is stated. H_{1a} and H_{2a} measure the research objective 1 and H_{3a} measure the research objective 2.

- H_{1a} : There is a significant level of awareness of Open Innovation among firms.
- H_{2a} : There is a significant level of adoption of Open Innovation among firms.
- H_{3a} : There is a significant influence of Open Innovation practices on firm performance.

Research Methodology

The primary data is gathered based on a structured questionnaire from innovative software SMEs. A googledocs has been developed and the questionnaire link is sent to the CEOs/CTOs/VPs/Product heads of various software product organizations through an e-mail. The sample has an appropriate mix of core product companies, product & services companies and product as service companies which cover the domain of software product segment. The survey link has been sent to 40 companies and received the completed response from 30 companies with a response rate of 75%.

Dependent Variable and Independent Variable

In the current study, the dependent variable is Firm Performance, which is measured through market share.

A multiple regression is performed to measure the firm performance.

The key independent variables are open innovation practices such as Collaboration, Spin-offs, Alliances, Intellectual Property Licensing. The responses for the predictors have been collected on a likert scale for open innovation practices.

Results & Discussion

The reliability of the items of questionnaire is measured by conducting a reliability test for all items which are on ordinal scale. The Cronbach's α is found to be 0.742 for 47 items on ordinal scale for 6 items which discusses firm performance, the Cronbach's α is found to be 0.683 and for the items which measures Open Innovation approaches and practices, the Cronbach's α is found to be 0.725 . All the values are found to be acceptable

The awareness of the term open innovation is only 46.7%. This indicates that the term has a considerable awareness. From one-sample test, it is very much evident that among the firms there is a significant awareness of the term Open Innovation. The results of the One-Sample Test have been presented in table 5.1. From the table 5.1 it is observed that the t value is 5.037 which is significant at 95% confidence interval. This indicates that statistically H_{1a} is accepted. This means the awareness of the term Open Innovation among firms is a significant. Whereas the adoption of the Open Innovation practices among firms is only 43%. From a one-sample test, it is evident that the firms are willing to adopt or have adopted Open Innovation practices. From the table 5.2 it is observed that t value for adoption of Open Innovation is 4.709. The t value is statistically significant at 95% confidence level. Hence H_{2a} is accepted. This indicates that firms among the sample are willing to adopt Open Innovation practices.

The table 5.3 represents a regression model of the firm performance and open innovation practices. The table 5.3 it can be said that the predictor variables i.e. independents variables has a good relation with the dependent variable and the model is also significant at 95% confidence interval. Also from the table 5.4 it is clear that collaborations with the supplier is the most adopted practice among the open innovation practices

practiced which has considerable influence on firm performance. It could be seen that the t value for the collaboration with supplier is significant at 95%. Also collaboration with academic institutions may influence the firm performance.

6. Limitation and Conclusion

The study also infers that the concept of open innovation is still very new to the Indian organizations particularly to the small and medium segments. But still organizations are open to new practices. Even though the term might be new but the practices are being followed. Also the results indicate that Open Innovation practices help the firms to improve their performance. Collaboration is the key to Open Innovation practice that firms have adopted extensively for firm performance. The collaboration with suppliers and academic institution are preferred compared to customers and R&D labs. The concept of Spin-offs and Intellectual Property is still new. The results on a large sample may differ and needs to be explored. Thus the results of pilot study indicate that there is a need to study practices of Open Innovation among the small and medium organization, so that they can prosper and sustain the growth. This could also help the firm to grow to the next level. The limitation of the current study is that the sample is size is too small. The study is limited to the companies located in the Bangalore Ecosystem.

	Awareness of OI		t	df	Sig. (2-tailed)
	Yes	No			
Aware of the term "Open Innovation"	46.7%	53.3%	5.037	29	0.000

Table 5.1: One Sample test on Awareness of OI
Source: Author

	Adoption of OI		t	df	Sig. (2-tailed)
	Yes	No			
Adoption of Open Innovation practices	43%	57%	4.709	29	0.000

Table 5.2: One Sample test on Adoption of OI
Source: Author

R	R Square	Adjusted R Square	Std. Error of the Estimate	F	df	Sig.	Durbin-Watson
0.673	0.453	0.279	0.989	2.603	7	.041	2.012

Table: 5.3: Model Summary of Regression
Source: Author

Independent Variables	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	6.382	1.306		0.000
Collaboration with Universities	0.403	0.207	1.946	0.065
Collaboration with Suppliers	0.475	0.229	2.078	0.050
Collaboration with R&D labs	-0.172	0.260	-0.660	0.516
Collaboration with customers	-0.378	0.255	-1.480	0.153
Licensing idea/technology IPR to partners	-0.196	0.184	-1.068	0.297
Alliance for new product development	-0.303	0.231	-1.312	0.203
Spin-off my product team to develop a product	0.159	0.186	0.856	0.401

Table: 5.4: Summary of Coefficients
Source: Author

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On Contemporary Issues in Indian Health Sector

T.V. Srinivas*

Abstract

This paper dwells upon a few contemporary issues in India's healthcare sector, pointing out some weak links which call for strengthening them. There are public sector health providers and so also private sector players. One could also see a few Public-Private Partnership (PPP) models which are relatively of recent origin. The issues are categorized as anomalies, policies and actions, data base of patients, innovative ideas and new developments. Yeshaswini - the Government of Karnataka scheme is mentioned as an illustration. The paper ends with summary of discussion as pointers to further research.

Key Words: *Big data; database; E-pharma; Healthcare; Innovation; Quality regulator.*

1. The Study: A Brief

No one denies that quality healthcare must be provided at affordable cost. But when it comes to practice, both these aspects suffer. This is particularly so in the Indian set up. The ethical issues are often overlooked and sidelined. In India, healthcare is provided by public and private healthcare providers separately and sometimes in conjunction (PPP models). The present paper focuses on the Indian health sector and dwells at length upon the noted anomalies, policy changes and actions needed, database of patients as a multipurpose tool, innovative changes and some new developments. The Yeshaswini scheme of Karnataka Government is outlined as a PPP model. Some relevant discussion is provided at the end.

2. Anomalies in Indian Health Sector

A few existing anomalies in the Indian health sector are pointed out below.

2.1 Highest Inequality in Access to Health Services

The gulf between the well-placed and the deprived seems to be the highest when it comes to access to health facilities. In fact a recent study in Bengaluru City (July 2015) which covered 468 households from 25 city wards (Total population 16.84 lakhs) was conducted by The Centre for Infrastructure and Urban Planning found that most inequality was seen in matters related to health.

*Research Scholar, Manipal University. The author is grateful to Dr. T Srivenkataramana for penetrating discussions.

Economists consider 30% inequality as normal in society and are seen in perceptions related to economy. But in the area of health this is more than 50%. Thus there is a need to develop proper healthcare system which can be ideally met by PPP (Public-Private Partnership) models. An example is provided by the Yeshasvini Scheme of the Karnataka Government. The respondents from all wards preferred PPP - type governance where Government intervention is needed to regulate and monitor private institutions.

2.2 Need for Fair Insurance Policy for the Elders

The elderly are denied affordable health insurance policies (in India), whereas it is they who need it the most. It is ironic that most health insurance in India is offered to younger people who, very often, will not need it in their working years. The elderly are generally not provided just because they are more likely to make claims. How such a profit-motive serves society if something so vital is denied to those who are at risk of being hospitalized or needing care? The best solution would be to bring many more people compulsorily into the ambit of health insurance and pay small premiums during their entire working lives! And how, would this benefit the young? We should remember it is only a matter of time before they too will grow old. Insurance works on the basic principle that the insured pays not just for self, but for all other members in the system that is insured.

2.3 Geriatric Healthcare Only in its Infancy

India lacks trained medical professionals to provide geriatric care to its elders. The problem is particularly acute in Karnataka State. For example, as of now, it has no colleges that offer courses in geriatrics either at the undergraduate or post graduate levels. The only course available is a Post Graduate Diploma in Geriatric Medicine offered by Indira Gandhi National Open University. As a result, senior citizens have no access to specialized care in hospitals, except by psychiatrists, general physicians, who attend to geriatric patients too and may then refer them to specialist doctors. Affordability is the greatest worry as almost all the available professionals are scattered in corporate hospitals.

Acknowledging this aspect, the theme of International Day of Older Persons (Oct. 01) is sustainability and age

inclusiveness in the urban environment. The population of senior citizens in India has gone up from 57 million in 1991 to 90 million in 2011 and is projected to touch 340 million by the year 2050.

2.4 Family Doctors: A Dying Breed

The good-old clan of family physicians is gradually becoming extinct, which is a worrisome trend. There are several instances of such cases. The family doctors are forced to shut their doors either because of stiff competition from multi specialty hospitals or because they graduate into specialists. The federation of Family Physicians' Association of India (FFPAI) is understandably worried. It has decided to take this as a challenge to make the general practitioners' post attractive. The idea is to ensure that family doctors who would have started practice after MBBS degree are abreast of the latest medical knowledge.

A robust advertisement campaign by the hospitals and increased dependability of the people on the internet has made the hospitals popular. Going through a family physician is advantageous as he/she knows the entire health history of the patient. This is critically important as it is the basis for further treatment. Cost-wise too this system is economical. Also if a person has multiple ailments and if he sees multiple specialists, the treatment will only be compartmentalized. It is helpful if a family doctor does the overall examination and refers him/her to a specialist. The general practitioner is the first point of contact in developed countries. This is generally perceived as a more efficient and wholesome system.

2.5 Poor Cancer Patients rely on Inexpensive Medicines, Risk of Relapse

Breakthroughs in cancer drugs have done little for poor patients diagnosed with cancer: A recent study (2011-13) that they still use the drugs available at cheaper rates and risk a relapse. This is the finding of the Bengaluru based study on breast cancer patients. It focused on the effects of economic disparity in treating cancer. This pioneering study quantifies the effect of inadequate financial resources on the outcome of cancer treatment.

3. Policies and Actions

Some relevant points having policy implications and calling for action are elaborated next.

3.1 Improved Maternal Care, Need of the Hour

In 1990, the United Nations created eight Millennium Development Goals (MDGs) to encourage countries to reach critical development targets. One of them is improvement of maternal health which specifically states that all countries should attempt to reduce the burden of maternal deaths by three-quarters between 1990 and 2015.

The Government's flagship public health program, the National Health Mission (NHM) has maternal health as a core focus area. It has attempted to increase access and to improve health systems to deliver quality service.

Today many private sector maternity hospitals and clinics are working with the government to implement these PPP schemes, so that pregnant women at all socio-economic levels can get quality maternal care. But there is an urgent need to do more. Some of the priorities are as follows:

- a) Increased access to affordable maternal health care in urban areas;
- b) Awareness generation and attitude change through extended mass media campaigns;
- c) Health education on pregnancy, childbirth and safe motherhood for adolescents at schools;
- d) Improved quality of services to bring down infant and maternal mortality rate and those children survive beyond age five;
- e) Increased accountability of health service providers for the loss of every mother and child in child birth through regular death audits;
- f) Health infrastructure improvements through private-public partnerships;
- g) Increased fellowships and training in obstetrics and gynecology for doctors in rural areas; and
- h) Early and effective screening processes to identify high risk mothers and babies to prevent mortality and improved referral mechanisms to deal with such cases.

3.2 Regulator Needed to End Unethical Practices in Healthcare

"The medical establishment has become a threat to health" wrote Ivan Illich in his 1975 book Limits to

Medicine. Going by recent events, Illich's stentch criticism of Western Medical Establishments is also pertinent to healthcare in India.

A doctor-patient relation is built on trust. Despite being recognized as a consumer-seller relation under law, patients lack the information needed to choose the best decision in their own interest. Unlike buying a cell phone, where buyers know what features they want, in healthcare such decisions have to be made placing trust in the doctor's technical knowledge and skill. But what if there is a conflict of interest between a healthcare decision that is in the interest of the patient and an incentive to the doctor, as is often the case? Will a doctor resist a few supplementary thousand rupees for referring a patient for an MRI scan? Will he refuse an all expenses paid foreign trip or a sought after gift for his clinic in exchange for increasing medicine prescriptions? Should we as a society allow healthcare to be delivered under such a perverse system, which is unethical to the profession and averse to the patient. Irrespective of doctors indulge in unethical practice, an impartial regulatory system is needed.

3.3 Quality Healthcare with Public Funds

Six practical steps in this context are listed below:

Tax-payer financed services

1. The government could issue a clarion call for Universal Health Insurance (UHI). This will free the current out-of pocket spending on health and channel funds toward far more productive uses. Patients often get now very expensive treatment or over-treatment of poor quality. UHI should prevent large expenses for the poor.
2. A rapid scale-up in the introduction of new vaccines against diarrhea and pneumonia among children. Novel delivery model must be tested and scaled to deliver vaccines to every doorstep.
3. The most feasible priority will be to reduce smoking, which kills about one million Indians a year. All cigarettes must be taxed on their tobacco content and not length.
4. Preventing Vascular Deaths

In order to tackle adult vascular deaths-the leading cause of deaths in the country (over a million per

year), low-cost generic risk pills that combine aspirin with a statin drug to reduce cholesterol and lower blood pressure may be introduced.

5. Controlling Malaria

Specific measures need to be taken to prevent a big resurgence of malaria. This includes considering a proper use of combination drugs, to be made widely available in rural areas.

6. A major effort should be made to improve health reporting. This could be achieved through a new central hub which will track and report on development and progress.

These six steps correspond to priority areas and will ensure maximum returns for a given level of investment and result in big strides in healthcare improvement.

3.4 Healthcare to India's Remote Tribes

The tribal community lags behind the national average on several vital public health indicators with women and children being most vulnerable. Research has shown that 75% of India's tribal population defecates in the open and 33% does not have access to clean source of drinking water. Insanitary conditions, ignorance, lack of health education and poor access to healthcare facilities are the main factors for the poor health of tribal.

Posts of doctors and paramedical in Primary Health Centers (PHCs) are often vacant. Additionally, the non-availability of essential drugs and equipment, inadequate infrastructure, difficult terrain and constraints of distance and time and lack of transport and communication facilities further hinder healthcare delivery. Tribal's' right to good healthcare must be addressed using modern technology and innovative approaches and, most importantly, by involving the community in developing solutions to its healthcare problems.

3.5 The Right Prescription

Universal healthcare offers a solution by extending access to healthcare as widely as possible and providing quality care through minimum standards. Soviet Union implemented it in 1937 with the UK following nearly a decade later. Most nations have funded it through general taxation, supplementing it by special levies

and private payments. Compulsory insurance utilizing common risk compensation pools and a choice of insurance funds have helped reduce inequality and increase access.

Public-private partnerships or build-operate-transfer operations and maintenance contracting schemes can utilize private capital for provisioning healthcare services. With our growing population, the need for treatment of non-communicable and life-style diseases will increase, particularly in Tier 2 and Tier 3 cities. Affordable healthcare programs under PPP model will offer significant margins for private players, while helping to address talent resourcing and under-utilization issues.

Insurance coverage is also abysmal in India, with just about 25% of the population covered while a target should be around 75%. Access with low out of pocket spending can be achieved through an expansion of healthcare insurance with the government playing a guarantor's role. Universal healthcare requires cheaper drugs. Capping drug prices has become controversial. But pharmacy firms are coming under pressure to lower drug prices across the world. Drug providers should take a price cut and benefit from India's healthcare expansion. Public interest can also be private interest, in greater volumes.

3.6 Act Tough Against Tobacco

Tobacco is one of the four major risk factors for non-communicable diseases. Its products are smoked, inhaled, chewed and sucked in different forms, all seriously damaging health. Despite the hazards of tobacco, there is an increasing trend of initiating tobacco among the young and women globally.

The impact of tobacco much beyond health, increased expenditure on healthcare, deaths and diseases cause productivity loss, affects the quality of life and family harmony and has economic cost to the society. There is a close association between poverty and tobacco. Tobacco use is more prevalent among the socio-economically vulnerable groups.

All countries are implementing measures against tobacco, but these are highly inadequate calling for stronger measures. Also importantly countries have to

support cross-border control of tobacco related trade. Heavy smoking and alcohol use cause distinctive changes in human DNA, leading to an accelerated premature ageing.

4. Multipurpose Database of Patients

A good database of the patients has several utility aspects and is a national priority. A computerized database with basic information on persons having major diseases will be useful in more than one way: A ready and reliable brief history on disease (getting over lack of memory of the patients in this regard), treatment received, disease status etc. We propose a 12-digit unique ID Number and the basic information to be compiled by the (first) hospital, with easy access to other hospitals subsequently. This felt need by the hospitals and akin to Customer ID of the bank customers. A format for the purpose is also suggested which may be finalized after a pretest.

4.1 Database on Patients having Major Diseases

[Suggested format]

12 digit code [To be assigned by a nodal agency in order to ensure continuity and avoid duplication].

Two digits for state\city, two for disease type, one for Gender MF, seven for patient file No.

1. Name:
- Blood Group:
2. Gender, Date of birth, Educational qualification, Profession
3. Address: Phone No.
4. (a) Major Health Problems (up to 2)
(b) Surgical \ Nonsurgical
5. (a) Since the Year \ Month
(b) Main Treatment (s)
6. Names of Hospital (s), with City & Contact Phone
7. Current Status of Disease
8. Major Source of Income
9. Total Expenses up to Now
(a) Doctor's Charges
(b) Cost of Medicine

(c) Hospital Charges

(d) Others

10. Rank (1 to 5) the extent of co-operation received from the patient, 5 being excellent.
11. Other Relevant Information
12. Aadhar No. of Patient

4.2 The ICD-10 Codes in US

The US hospitals and doctors have to use these codes, w.e.f. Oct 01, 2015, which cover everything from Parrot bites to getting sucked into a jet engine. In this list, there are 70,000 ways to get sick, hurt or mortally injured and the US has made it official. These codes have been made mandatory to bill government programs and private insurers in the country's healthcare system. The codes cover a vast gamut of possibilities and are exhaustive as well as extensive. The list has, however, some absurd excuses such as Z. 63.1 'Problems in relationship with in laws' or V 91.07 XA ' Burn due to water skis on fire'. These codes will help identify ways to manage all kinds of conditions, from heart disease to roller skating injuries.

5. Innovative Ideas

Innovative moves are needed to revolutionize Indian Health services. Some current thoughts in this regard are mentioned below.

5.1 Innovation: A Must for Quality Healthcare

'The drug manufacturers most adopt world class manufacturing practices and operate in ethical manner' was the unanimous conclusion of a recent (Jan, 2015) meeting of government, regulators, captains of the pharmaceutical industry, pharmacy associations and healthcare professionals from across the country. The theme was 'Make, Develop and Innovate in India'. The consensus was for a collaborative approach that will ensure patient's access to innovative medicines while supporting the government's goals of bringing growth to India through research, innovations and manufacturing. Access to healthcare extends beyond the cost of medicine, to the proximity, quality and functionality of the infrastructure that supports that access. Creating a healthy India requires balancing the need for innovation with the necessity for more affordable medicines.

Quality is another big concern. Patients need to be assured that their medicines conform to prescribed standards. The healthcare industry has a collective responsibility towards all patients and must guarantee that we deliver 'responsible healthcare'. Any long-term solution to India's healthcare challenges will require a holistic approach and a critical evaluation of the existing systems.

5.2 Inclusive Ecosystem for Mental Health

It is now time to assign resources to government's progressive mental health policy and initiate programs that promote social inclusion, participation and mobility. The long term needs of persons with mental health issues may be better served by an inclusive ecosystem, like a new house which provides newer opportunities and greater personal meaning. This housing intervention and a related sense of ontological security may contribute significantly to the patient's rediscovery of identity and introduce a new credence to life. The process of social mixing demonstrated by occasional transactions at shops, joint celebration of festivals, visits to places of worship etc. can be very helpful in the healing process.

According to the World Health Organization's (WHO) Mental Health Atlas 2011, 38 percent of people living in mental hospitals are estimated to have stayed there for a year or more. Long term care for persons with persistent forms of illness, if restricted to extended stays in hospitals or traditional rehabilitation homes can be spiritless and lacking in vitality. Institution alienation is not and cannot be the answer. A feasible supplementary system is to have a mechanism to bridge the treatment gap by promoting access to clinical and social care. The needs of vulnerable groups and challenges around institutional and long term have been identified as key areas of focus. Much of the work here sits at the intersection of social welfare and healthcare.

5.3 Free Medicines can Transform Disease Management

It is a well-established fact that a truly innovative intervention in disease control expands the reach of the public health programs, improves patient satisfaction and health outcomes, reduces patient

costs and engages all stakeholders, especially the private sector. Yet, few such innovations appear, and when they do, they are often over-looked because current health programs are either too well-established or relatively inflexible. A case in point is a simple but trans-formative innovation being implemented in Mehsana, a town in Gujarat. With a part-rural and part-urban population, this town is implementing India's first pilot for universal free tuberculosis (TB) drugs-an idea that could transform TB treatment and management in India. If successful, it could transform disease control altogether. TB constitutes one of the biggest health crises for India. It kills over 750 Indians every day and causes economic losses of \$ 23.7 billion annually. Despite an extensive national program, a large percentage of patients continue to seek care in India's vast private sector, where they believe they will get better care. Unfortunately, this is not always true. There is wide spread use of inaccurate diagnostics and inappropriate treatment, pushing patients and their families into poverty.

The program offers no financial incentive to the doctor and offers only a small overheads charge to the pharmacists. However, in the end, the program provides a win-win situation for all: the chemist acts as a referral point, the patient gets the right diagnosis and free drugs, and the private physician retains his or her patients. This innovation in Mehsana can possibly transform public-private partnerships and thereby the way the public health programs are run. An innovation of this nature if scaled up nationally could address several of the existing challenges.

6. New Developments

Three new developments in health sector are dwelt upon next.

a) Post-operative Cardiac Care Simulator

Researchers at the Indian Institute of Science have developed a post-operative cardiac critical care simulator for training nurses. This is said to be the first of its kind to be manufactured in India. This is expected to change the way nurses are trained in this job, without actually coming face-to-face with such patients. This platform is a game changer for two reasons: A very basic imported simulator would cost Rs.1 crore, while

the one developed by the Institute would cost about 15 lakhs. With the nurse training model being far simpler than the one being also used to train doctors the cost-benefit could be quite significant.

b) E-Pharmacy: A Contested Development

Early in the year 2015, about 20 websites including Amazon, Flipkart started soliciting orders for online sale of drugs. More than 45 drugs were listed on one portal alone. Sale of new drugs has stirred any controversy as that of medicines. With the law yet to be updated to govern online pharmacy, several e-tailers jumped on to the pharmacy bandwagon. This has led to a large outcry from the All India Organization of Chemists and druggists. Meanwhile, the Government has set up a panel to go into the entire gamut of issues.

At present, producers are allowed to sell drugs only to licensed dealer, registered doctors and hospitals. Retailers are licensed only if they have adequately equipped premises for storage of temperature-sensitive medicines and have qualified on-site pharmacists to dispense drugs against prescriptions by registered medical practitioners.

Several key issues are involved in E-Pharmacy context. How would a website located, say in Mumbai check if (a) the scanned copy, even if obtained, is genuine and not tampered, (b) medical council registration corresponds to the place of residence of the patient and (c) how would the original prescription be endorsed as required by law for suppliers made so that additional stocks are not obtained on the strength of the same prescription, more so in the case of psychotropic drugs such as anti-anxiety and anti-depressant which are not only misused for recreational purpose but can be fatal in overdose. In short, e-commerce in retail trade of medicine in India is fraught with unacceptable risks to patients and with no benefits to the nation. This activity, if at all to be permitted, calls for large scale changes in the laws and rules. It is an issue of life and death.

c) Value of Big Data in Public Health

The global burden of disease sets a compass and foundations work with governments with emphasis driven in part by what nations, governments and the United Nations want.

The procedures developed should maximize the chances for health and minimize the chances of side effects. This is in real life seeing what precision medicine could look like. This is an area calling for reliable investigations on precision medicine in public health. For instance Bill and Milinda Gates Foundation have been focusing on Ebola and on the ways it spread. Using big data to understand the conditions that made it spread is precisely what is needed for epidemic prevention. The available technical expertise should be used for the people who need it most, who are among the poorest in the world. It needs to be culturally competent and affordable. The derived technological solutions should be available to the poorest of the poor.

7. Karnataka PPP model (Yeshasvini Scheme)

A large population segment (particularly rural) is given very little financial security against healthcare expenditure. Thus the poor cannot afford good healthcare; if they do, the attempt become expensive and they get impoverished. Yeshasvini, Rashtriya Swasthya Bima Yojana (RSBY) and the Vajpayee Arogyasri in the context of Karnataka state are the major schemes being implemented. In this setting, Yeshasvini Co-operative Farmers' Health Care Scheme (YCFHCS) assumes special significance due to its novelty. If implemented efficiently, it can result in a success story.

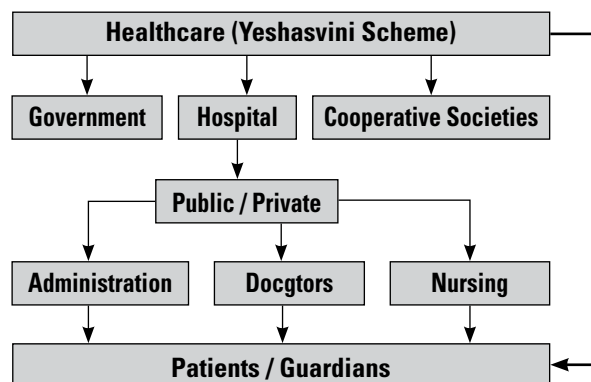
Healthcare in India has undergone a lot of change in recent years. With the launch of Yeshasvini scheme, it is expected to reach large masses in the rural & urban areas. This initiative by the State Government of Karnataka is creating awareness among the masses.

YESHASVINI, a unique Cooperative HealthCare Scheme launched for the first time in the world, is meant for farmers who are members of the Cooperative Societies. Its aim is to ensure good health for farmer cooperators of Karnataka.

The Government of Karnataka has introduced this scheme with a view for greater reach (particularly for BPL families) with respect to healthcare, including surgical treatments. This is positioned as a public-private model, with selected hospitals (e.g. Narayana Hrudayalaya, Bangalore) authorized to provide the services. The beneficiaries have to register (paying a nominal fee) under the scheme. It has been expressed

that the awareness among the people about existence of this scheme is low, coming in the way of success of the scheme. It is of relevance to examine the quantitative and qualitative aspects of the scheme in order to enhance its effectiveness. A total of 823 surgical services in 496 identified hospitals in the state are available under the scheme including medical emergencies like snake bite, drowning and accidents in agricultural work stations.

Yeshasvini Scheme Model:



Source: Author

The Yeshasvini Scheme was launched on 01/06/2003 and the progress of the scheme during the past 11 years is shown below:

Reach of Yeshasvini Scheme

Year	Members Enrolled (lakhs)	Members Contribution (Crores)	Govt. Contribution (Crores)	No. of Free OPD availed	No. of Surgeries availed	Surgery Amount Reimbursed to Hospitals (Crores)
2003-04	16.01	9.49	4.50	35814	9047	10.65
2004-05	21.05	12.87	3.57	50174	15236	18.47
2005-06	14.73	16.94	11.00	52892	19677	26.16
2006-07	18.54	21.56	19.85	206977	39602	38.51
2007-08	23.18	27.75	25.00	155572	60668	54.09
2008-09	30.47	36.10	30.00	191109	75053	61.03
2009-10	30.69	41.36	30.00	134534	66796	55.08
2010-11	30.47	41.68	30.00	157480	73963	57.23
2011-12	30.70	45.08	30.00	116690	77619	60.09
2012-13	30.36	58.88	35.00	110842	80401	74.12
2013-14 (31.12.2013)	34.50	49.21	3254.14	99656	62067	58.88

Source: www.yeshasvini.kar.nic.in

8. Discussion

The Indian health sector lags far behind in several respects with reference to the UN set minimum standards. Though there is no denying of the need for quality healthcare at reasonable costs, the contemporary Indian health sector scenario is disappointing and it presents several anomalies, be it in maternal care or care for the elderly. The progress in control of health hazards like use of tobacco is meager. The ethical standards on the ground are low. All this calls for basic policy changes and relevant strict actions. Some innovative changes too are in order for a breakthrough. There is a need for developing a multipurpose database of the patients at the State and at National level. The paper highlights all these ground realities along with discussion of a PPP model (Yeshasvini scheme) of the Karnataka Government. Suitable suggestions are included all along the narrative.

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On the Evolution of an Academic Course

•Interviewee: B. Shekar* •Interviewer: Caruna Bhat

Note: *This is an interview to unearth the efforts of an innovator in developing a new course in a Post Graduate management programme. The thought process in developing a new course is in establishing connectivity between logic and evidence by searching for a pattern through the Input-Throughput-Output-Outcome paradigm. The science of decision making is strong in logic and hence there is expectation of a perfect outcome. In many cases reality does not work that way. The ability to link the unconnected may emerge as an outcome of the new course. Decision-making, in the real world of uncertainty consisting of multifarious dimensions, is an art by itself. The course may provide cues as to how to make decisions despite many hidden variables present in life of which management is a part.*

- Editor-in-Chief

Prolegomena

Prof. B. Shekar was interviewed by Ms. Caruna Bhat (Strategy Researcher at Indian Institute of Management Bangalore (IIMB)) on 7th August 2015 in English. The interview lasted for three hours in a single sitting. This is a part of the "Qualitative Methods Research" course conducted by Professor Ganesh Prabhu. The purpose was to conceptualise a theory based on an ethnographic interview. The researcher explained that the purpose of the interview was to know the cause behind a highly uncommon quirk; and also to figure out the driving forces behind it and understand if it influenced other aspects of the interviewee's life as well. The subject was made aware that the interview was being recorded

and would be used for ethnographic analysis to which the subject agreed with the precondition of masking the answers to some questions. The interview went on to give cues to the understanding the genesis of a new course which is of interest to us here. It also gives an idea of personality and environment characteristics that influenced the birth and development of such a course. In the transcript, questions (denoted by Q) have been asked by the interviewer (Caruna Bhat), and the answers (A) have been provided by the interviewee (Prof. B. Shekar). The interviewee wishes to thank Professor Ganesh Prabhu and Ms. Caruna Bhat for permitting to select relevant parts of the interview to be published in Dharana. Apart from stylistic corrections the responses

* Professor of Decision Sciences and Information Systems Area, Indian Institute of Management Bangalore, Bangalore, INDIA

are not modified except in places for improved clarity. The Question-Answer format has been adopted to retain the flavour present at the time of interview. IIMB is not responsible for the views expressed here. The views expressed by the interviewee are solely his and Dharana does not assume responsibility for the same.

The interviewee thankfully acknowledges the help rendered by Mrs. Sugandha Ananth in making stylistic improvements thus enhancing the readability of this article. The interviewee also thankfully acknowledges the help rendered by Dr. Geetha Subramanian in imparting an improved flow by altering the sequence of questions asked during the interview. Last but not the most, the interviewee thanks Dr. N.S. Viswanath for adapting the interview to academician-readership

The Interview

Q1. Sir, could you talk about yourself -your educational background, your childhood and upbringing?

A. I was born in a town called Madurai in the state of Tamil Nadu. My schooling happened there. After schooling I joined the Bachelors' program in Engineering at REC (Regional Engineering College, now branded as NIT-National Institute of Technology), Trichy. Subsequent to that I joined the Indian Telephone Industries (ITI) in Bangalore. While on the rolls of ITI itself, I completed my postgraduate degree in Computer Technology from Indian Institute of Technology Delhi. After spending a short stint at ITI, I quit and worked in a couple of private sector enterprises for a year. I then joined Bharat Electronics at Bangalore- another public sector unit, and worked for two years. By that time, I had enough with the industry. I joined the Indian Institute of Science for a Ph.D. in Computer Science. I worked on pattern recognition for about four years. After completion, I was a post-doctoral fellow in the Computer Vision laboratory there itself for a year. Following that, I joined Indian Institute of Management Bangalore (IIMB) in 1990 and since then, I have been here.

Q2. Every person is motivated by one of the dimensions of social systems that drives them. There are five of them – power, wealth, knowledge, values, and aesthetics. Which one or more of these drives you?

A. My value system. I attach values to several dimensions that are related to my being a part of society.

Q3. What are those?

A. Many – Family and friends, and my own personal ethical values to name a few.

Q4. Any radical decision you have made in your life?

A. A radical shift is my career itself! Not very many people who have been in the industry with the scent of money will come over to academics. And that too, to start all over again by doing a Ph.D. and afterwards joining as an assistant professor at the age of thirty eight with absolutely no monetary compensation for your industry experience. So that was a radical choice. Next is the shift in my academic career. I was into Computer Science when I just shelved all those things and went in a different direction. I now teach a course called Creativity in Arts and Science (CARTS) which is radically different from the courses I was teaching earlier.

Q5. It's like you shifted from a completely left brained to a completely right brained activity!

A. I don't know! Maybe I am trying to make the right brain a little bit more left brainish - so to speak. A little bit more of "why is it happening" – as some of my students may say. Maybe you should go over and check my blog. Some of my students' comments are there. I generally keep only my students' comments there, as I don't get the time to write because of paucity of time.

Q6. Could you tell me more about how you went from computer science- a "bit-by-bit logical and highly structured", to a field like creativity – that is literally as free-wheeling as it can get?

A. This inclination towards the arts and what are usually called the right brain areas has been in the family for a long time. All the people that I have lived with – my mother, my uncles, my father - had it. My mother could sing very well. My father was a connoisseur and could also sing. My uncle is a writer, a music director, singer, actor, etc. Another uncle of mine a doctor by profession, has learnt music, and is also into literature. One more uncle is a good amateur photographer.

So you see, I have been in an environment of this sort since my formative years. This has been at the back of my mind for a very long time. The only thing is that I did not have an opportunity or the courage to shift, and when the opportunity arose, I grabbed it with both hands and shifted.

Q7. Given the background that you just spoke of, why did you not venture into music or arts in the first place? Why did you go into a more technological field?

A. That's because many Indian families, especially South-Indian families, are conservative. Their thinking - going into technology-based fields fetch a more reliable source of income as compared to venturing into arts where the income may not be steady or significant enough. That is why I joined an engineering program.

Q8. So computer science wasn't really your calling?

A. If I look at it on a relative basis, between Electronics which is what my Bachelor's degree was in and Computer Science, I chose Computer Science. But between Computer Science and Arts, it's Arts! However, I do retain interests in conceptual computing-related research.

Q9. You seem to have a lot of options! Are there still some you haven't pursued?

A. I don't really choose based on what I can excel at. It is just my interest – well you may also call it as a deep intent to pursue a field. So if anything crops up in the future, I may pursue that too.

Q10. Your Ph.D. is in pattern recognition as a part of Computer Science. How did you shift from that to creative arts?

A. Actually you cannot call it a radical shift either; pattern recognition is what we do even in Arts. To that extent there is a lot of commonality between that and this. The only difference is that one has a more computing flavour while the other has more intuition and insight-oriented flavour. And insight is important in any field that one works in!

Q11. Did you have to suffer a significant monetary loss by switching from one field that you had quite a lot of years of work experience in, to one that you were just venturing into?

A. No, there was no significant monetary loss. I am in the same institute and I just switched from teaching computer-related topics to teaching art-related topics.

Q12. How about when you shifted from industry to teaching?

A. When I shifted to teaching, I was only teaching computer-based subjects, not arts. That was for the first nine years of my tenure here. There was some loss there, but it was not that important.

Q13. How did your family react to the shift from the industry to academics and the associated loss?

A. That of course is subjective. They gave more importance to my being comfortable in my life as compared to being in the perennially stressful industry with all its tensions. In fact, initially I thought that only industry has a lot of tension and academics would be a lot more relaxed. I later found that to be completely false. (smiles) But let me also add that the tension in academics is of a completely different sort and much less intense.

Q14. How did you react to going from your goals being set by your boss/higher ups in the company to academics where you set your goals yourself?

A. Contrary to popular belief, I don't think it's difficult. I think this is far more interesting and the results are far more long-lasting; and also self-motivating oneself leads to better results! Rather than being externally pressurized to do something, I prefer self-motivation. Isn't the latter much better than the former? And that is a good enough reason for me to shift over, despite monetary losses.

Q15. It is a good enough reason for you, but how about your family? Does the same logic apply there as well?

A. My wife is a doctor, so this aspect didn't matter. My father was a government officer and he retired while holding a senior position, so even he wasn't monetarily dependent on me. So all of that was taken care of.

Q16. So were they neutral about your decision to switch or were they supportive about it?

A. They didn't say anything in fact! They said do what you want. So it was pretty free-wheeling. In fact after completing the Master's Degree my father wanted me

to pursue a Ph.D. It was I who decided at that point of time to join Indian Telephone Industry instead of pursuing my Ph.D.

Q17. So at that point of time you actually wanted to be in the industry?

A. What I know is that at some point of time I felt enough is enough with the industry and decided to switch to academics. As for then, I don't know. See when you're very young, you're not very clear about things and of what you want in life, and hence you're not very sure. You're driven by your peers into the so-called right direction. Even right now, I am very sure that some of my colleagues are being driven by their peers.

Q18. Is that not true for literally anybody - being driven by one's peers?

A. No, I don't think so. At least it's not true in my case. I am not driven by them. In fact many a time I tell my students "look I'm sharing my experiences. I'm not going to play to the gallery. I won't give you what each of you wants. What I feel should be given is what you'll get. You're here because you like it. While deciding whether to take up this course, your seniors and your super seniors have advised you that it's worth your time and so you're all here. That's it."

Q19. Given the fact that students would have certain expectations of a course, and that you blatantly tell them that you refuse to play to the gallery, are they really satisfied with the course you offer?

A. It seems to be so for the past several years! (laughs) I cannot say for sure, but from the comments one gets to know. I don't edit any comment, I just tell them to write whatever they want and send them to me so that I can put it up on my blog because I do not have a website. In any case, I do not deviate from the outline except for minor deletions due to time-constraints.

Q20. But they do know that the comments are coming back to you. That may lead to a bias.

A. After passing out, how will it affect them? They can be very frank in what they say. Apprehensive of the grades they may get, they may not be frank while they're in the course. But afterwards, there is little reason to hold back. All comments come in post-facto.

Q21. Do you incorporate any changes in your teaching methods or content based on the comments and the feedback that you receive?

A. I only do that if I'm really convinced. For example, there is a component in my course that is called Creativity Showcase. The last part of each session is an opportunity given to the students to come and display their own creative talents - which can be dancing, singing, skit, orchestration, photography, painting - anything in fact. This was a suggestion from some students of an earlier batch.

Q22. How open are people in coming forth and presenting to the whole class impromptu?

A. It's not impromptu! It is decided well in advance as to which two presentations (either individually or in groups) will be held in a given week. This gets communicated to me through respective class representatives.

Q23. Is there a proclivity that people have, to present in groups?

A. No, there is nothing of that sort. In fact a couple of years back, there was this guy who wanted to sing all by himself but then he found a guitar accompaniment and a rhythm accompaniment (some percussion instrument) which turned out pretty well once the three of them teamed up.

Q24. So the class on creativity, is it linked to the musical background that you had while growing up?

A. The class is linked not only to music; but also to cinema, drama, literature and math as well. All of these were also a part of my background and hence they too influence my teaching.

Q25. How did you not go into one of these art-fields as an artist instead? I am not referring to the beginning. You've already told me about the conservative background; how about later?

A. It's too much of a razor's edge. Getting out of an institute and becoming a music director's assistant, or starting out all by myself will require too much of a technical expertise that I don't possess. I'll never do that. Even in my course, I put across a very basic understanding of creative elements present in various facets of arts. But if you have to perform, that requires

a very high degree of technical expertise. I do not have it despite being associated with these fields for so long. For example, I'm not a skilled instrument player. But I can appreciate and look at art from a variety of viewpoints that help discerning the creative elements present; gain insights, translate them into an inspiration for my students.

Q26. So you're saying that you are a very good conduit but you cannot be a performer?

A. Well, I won't say conduit, because conduit means just taking and passing it on. I do add my own insights and external experts' insights as well. As far as performing goes, I can sing and play the piano-accordion. I have also been an actor in plays, a member of an orchestra and such sorts of things. However never with a tremendous amount of technical expertise. Actually it's not even these things. I wouldn't like to venture in that direction at all. Partly because I like it this way and not in any other way.

Q27. Is that because of your age- something along the lines of its being too late?

A. Now of course perhaps the age has come wherein I cannot really get into such things, but even at a particular point of time when age would not have been an inhibiting factor, I would prefer this to that.

Q28. Is this some kind of risk-averse behavior?

A. What goes on at the back of my mind, I do not know. All I can say is that it's not risk-averseness. To put it mildly I like it this way. Let me re-emphasize - I REALLY like it this way.

Q29. What I am trying to understand here is why would you not want to be both the performer and the medium?

A. If I have to perform, I will be performing that and only that and nothing else other than that. Whereas here, the spectrum is vast. We start with elementary forms of music and then we get into cinema, literature, photography, painting, drawing, and then into mathematics! This spectrum is something that I may not be able to cover if I become a performer. And if you ask, why not both, I think both may not be possible. I do not know of any such. I have only read of Leibnitz being a one of the kind you state. I know of some people, but

they too are not in the mould you are referring to. If you take Raja Ramanna, he was a good pianist and a physicist, but that's all! Take Einstein, he was a good violinist and a great physicist and that's all. But here, look at the range of topics available to me. I have the privilege of going as much deep as I like and can.

Q30. So how do you cover that range in a ten week course? We're barely brushing the surface in many of our courses!

A. That of course is something you will have to figure out all by yourself- you are free to sit in my class and find out for yourself! (laughs).

Q31. How do the PGP's (MBA students of IIMB), who have been in strict teaching courses mostly, react to a course such as yours?

A. They like it. They want it. The reactions and points of view may differ, but in general they have been positive about the course. Incidentally such a course is offered only at IIMB.

Q32. What are the best reactions that you have gotten to your course?

A. Best reactions by students, right? For that I suggest you go and read the comments on my blog. Its easy reading and sometimes it will make interesting reading too. (The interviewer visited the above mentioned blog and found various comments, the most noteworthy being the following : One by a former student who mistakenly attended a class when he came in for a bag he'd left behind and was so impressed that he took up the course.)

Q33. What is the best criticism that you have gotten?

A. I cannot call it as best criticism. However I remember one girl saying, "Sir you should bring creativity in Management into your course." To this I replied - that is up to you. I cannot bring creativity in finance, I cannot bring creativity in marketing, I cannot bring creativity in POM (Production and Operations Management), and I cannot bring creativity into OB (Organisational Behavior). These are not in my jurisdiction. I try to identify the creative elements in various art forms. The rest is yours – choose, take away, go back, go out, pass out and practice.

At the very basic level, creativity does not need expertise. It requires a very good intrinsic mind-set. You do not need technical expertise. That is why, regardless of background, we are able to appreciate and get inspired. Take a tune or a musical piece. I may create a musical piece without needing any technical expertise. But if I want it to reach the masses, I need someone who is a technical expert- who'll implement what I have in my mind.

Q34. This covers your professional life. I have noticed that people who are into music and arts are usually disciplined in their lifestyle. Does that hold for you as well?

A. Oh no! You see any artist's work station and you'll find colours splattered all around. That's where their art emerges from. However, I do have a set routine with respect to my physical self. I wake up fairly early and take a walk. Due to some health-related issues, I also have a regulated diet with a limited intake of oil, salt, etc. I drink warm water most of the time. My meal timings do not vary much either. I spend my day in the office and in the evenings I may go for a walk. So yes, if you call this as disciplined, then it is. What I do in the office or outside the mentioned activities does not have a set structure.

Synopsis : Ph.D. Thesis

Global Marketing Strategies for Indian Aluminium Products – A Study

Narayansa Vithobsa Badi*

Overview of Global Market for Aluminium

Aluminium is a relatively young metal of 120 years compared to steel, copper and other metals. In this short span, it has found extensive usage in every walk of human life; from pots and pans to airplanes, rockets and to space-age equipments. The metal is next only to iron in tonnage and usage. The ongoing globalisation has touched the Indian aluminium industry:

- Indian aluminium Industry (IAI) is one of the lowest cost producers of alumina (approx US \$ 118 per ton) and aluminium (approx US \$ 1020 per ton) in the world.
- IAI is replicating successful business model of world's leading aluminium companies. It represents a fine blend of revenue from alumina, primary aluminium and fabricated aluminium products.
- Access to high quality gibbsite bauxite reserves
- Cheapest energy (US 3 Cent per Kilo Watt Hour) from their captive thermal power plants.
- Most of plants use state of art technology due to up gradation
- Primary aluminium prices and long term alumina prices are cyclical, leading to fluctuations in earnings.
- Given its cost competitiveness and its high financial flexibility, where gearing (even after expansions) is expected to be low, IAI can look forward to increase its presence in aluminium business, where its global presence is small as compared to pure smelters such as Dubai Aluminium Co. (Dubai) and Aluminium Bahrain.
- Globally, aluminium leaders have reduced their business risk with fine blend of alumina, primary aluminium and fabricated aluminium products revenue streams. Also, these leaders have a presence in the global market.
- Healthy global average annual growth of 3.5 percent and Indian growth of 8 percent. This coupled with excess production allows for significant surpluses available for export.
- There is robust demand growth from China and South East Asian countries.

India is an important player in the aluminium sector in global markets, because of its abundant bauxite proven reserves of 3.04 billion Metric Tonne (MT). The bauxite is of good quality and easy to mine which makes the country one of the lowest cost producers of the metal in the world. Around 4-5 MT of bauxite is required to

* This synopsis is based on the thesis of the author for which Aligarh Muslim University (AMU) awarded Ph.D. degree in 2015. The thesis was prepared under the guidance of Dr. Salma Ahmed, Internal Supervisor & Dr. N.S. Viswanath, External Supervisor respectively.

produce one MT of aluminium. India's bauxite reserves are sufficient for next 211 years of production. With production of 14 million tones in 2004, India accounted for around 8.7% of global bauxite production. India's production of aluminium aggregated 0.91 million MT in 2005, accounting for 3% of global production.

Indian Aluminium Industry started in 1942 with a small capacity of 2500 MT/year plant by Indian Aluminium Company Limited. The plant was a collaboration effort with Alcan of Canada. Since then it has grown from considerably. Today it markets 1.2 million MT of aluminium primary metal and 1.00 million MT of alumina which is an intermediate product.

2 ½ MT Bauxite gives 1 MT of alumina which is a chemical in the form of white powder. It is mainly used to smelt aluminium metal. 2 MT of alumina brings 1 MT of aluminium metal. That is 5 MT of Bauxite makes 1 MT of aluminium.

Aluminium Industry globally has rapid growth for last 4 decades. It has about 3000 uses. With its light weight and excellent properties it has wide uses from pots and pans to aircrafts and space-age equipments. The global growth per annum is 3-4 percent. Indian growth is around 8%. Despite this disparity, there is projected surplus in production that prompts this study.

Research in the field of Global Marketing of Indian aluminium is indicated as the researcher noticed in his experience the scattered, routine and old practices of global marketing. The efforts were temporary and did not have much impact. It was not a planned or team effort to utilize the resources or get maximum benefit to Indian Aluminium. That idea of global marketing has come in the present hypothesis of study.

Need for Research in Global Marketing of Aluminium Products

The study on global marketing of aluminium products and development of business from India is great importance considering the facts:

1. The Indian economy is doing well with consistent growth rates since last two decades.
2. The current rate of growth expected is around 9%.
3. To the growth in manufacturing aluminium sector in India are impressive. In 1992 the manufacturing

capacity was 0.6 million M.T. and as on date it is 1.2 million M.T. The state of art technologies is being employed. The quality standards of the products are upgraded to international levels.

4. The recent acquisition of large company Novelis of Canada by Indian aluminium manufacturer HINDALCO show the managerial capabilities in Indian aluminium industries in addition to basic financial capabilities of large profits and huge cash reserves available in the sector. HINDALCO has an installed capacity to make 0.4 million M.T. of aluminium per year. Novelis acquisition will add 3 million tones of product to its portfolio and a large European customer base. In other words HINDALCO present turnover of Rs.1100 Crore annually will increase to Rs.5500 Crore annually. It is also interesting to note that HINDALCOs products are at the lower end of the value chain where as the Novelis at the higher end. The value of the deal is 6 billion dollars for the acquisition.

Various Dimensions of the Research Problem

The reasons highlighted in the introduction has provided an ideal setting for the researcher to investigate what requires of an Indian aluminium company to take the opportunity in its stride. Further aluminium being a metal that is produced in commercial quantities only since 1886, Indian aluminium industry has a great opportunity to take on the global aluminium market. Given the rate of diffusion of technology, the information on prices and the organized bench mark of fixing prices, Indian aluminium industry has not caught up to its competitors world wide with a jolting phase. To compete globally apart from the technology and quality one also needs to develop a global marketing strategy that enables the Indian industry to reach its goals. This study endeavors at bringing a comprehensive understanding from such a perspective.

A wide range of variables, not typically encountered by domestic firms, characterizes the foreign markets. That is why global marketing is considered multi-faceted. Despite the complexities involved in global marketing, there are concepts and analytical tools that can help global marketers. Different marketing strategies suit different countries and an organisation should learn to adapt to these complexities to enhance global marketing share. We intend to explore some of them.

Objectives

The objectives of research are:

1. To ascertain the competition situation of the aluminium industry and the competitive strategies adopted by the Indian organisations in global markets.
2. To study the perceived customer preferences in global markets.
3. To study the promotional methods adopted by the Indian industry in global markets.
4. To develop future plans of the Indian industry for gaining competitive edge over the other countries.

Hypotheses to the Study

1. There is significant difference in futuristic mission set based on annual growth rates in global marketing.
2. There is significant difference in the attributes preferred for the global marketing on existing business dealing countries.
3. There is significant difference in the methods employed to derive competitive advantage based on existing business dealing countries.
4. There is significant difference in major marketing strategy chosen based on existing business dealing countries.
5. There is significant difference in promotional methods adopted based on annual growth rate in global marketing.
6. There is significant difference in the methods used to derive competitive advantage based on major marketing strategy.
7. There is significant difference in the methods used to derive competitive advantage based on different new countries.
8. There is significant difference in the promotional method suggested based on new business development countries.
9. There is significant difference in quality standard adopted based on the attribute insisted by the customer.

10. There is significant difference in quality standard adopted based on vital products the company manufactures.

Hypothesis Testing

In all ten null hypotheses are rejected:

1. Annual Growth in Global Marketing vide Futuristic Mission.
2. Existing Business Dealing Countries vide Attributes Required for Global Presence.
3. Existing Business Dealing Country and Method of Deriving Competitive Advantage.
4. Existing Business Dealing Countries vide Major Marketing Strategy Adopted.
5. Annual Growth Rate and Promotional Methods Adopted.
6. Major Marketing Strategy and Method of Deriving Competitive Advantage.
7. New Business Development Countries vide Futuristic Mission.
8. New Business Development Countries vide Promotional Method Suggested.
9. Quality Standard Adopted vide Attribute Customer Insists.
10. Vital Products Company Produces vide Quality Standards Adopted.

Indian Aluminium Marketing

India is 5th largest in Bauxite reserves and 7.6 per cent of world reserves. The first 4 are Guinea 22.8 per cent, Australia 20.2 per cent, Brazil 10 per cent and Vietnam 8.2 per cent of world reserves. In absolute terms India has reserves of 3.04 billion MT. Additionally, the quality of Indian Bauxite is good with about 52% aluminium oxide.

- Limitations are low capacity of production of metal at 1.3 million MT/year. Aluminium plants rely on their captive power plant that currently costs 3 cents/unit. Unreliable and expensive power further hampers this low production levels.
- Good LME prices since last 2 years are bullish.
Aluminium: + 2400 US Dollars per M.T.
Alumina: + 350

- Current Indian exports now are:
0.4 Million MT of Aluminium metal
1.1 Million MT of alumina

Global Aluminium Patterns

Global Aluminium demand pattern

- There is large growth in aluminium product demand in China.
- Demand in Western world is static.
- Medium growth in demand in other Asian countries.
- Medium growth in demand in other developing countries.

Global Marketing of Aluminium Products

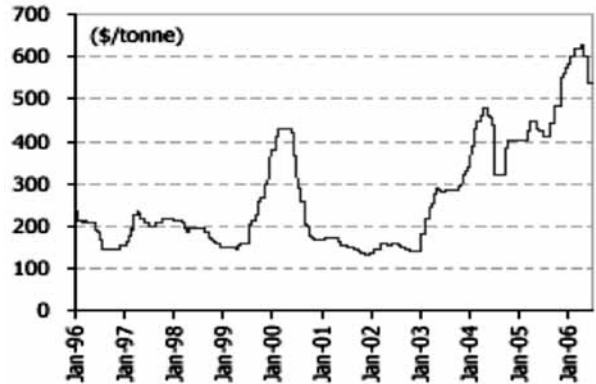
Among the 4 Ps of global marketing are (i) Price, (ii) Product (iii) Place and (iv) Packaging. Of these the 3 Ps apply in aluminium products as it is an industrial commodity. They are (i) Price, (ii) Product and (iii) Place. The three are discussed:

(A) Alumina Market Issues:

- Alumina, chemical product Al_2O_3 .
- Metallurgical grade Alumina market globally growing at 3%.
- Half of met grade Alumina, 25 MMT is traded on medium and short (spot) contracts. Balance 25 MMT is produced in-house.
- Alcoa USA is global leader in alumina.
- Trade controlled by a dozen traders in the field.
- Pricing based on
 - Fixed prices or tender prices.
 - London metal Exchange (LME) prices for aluminium metal.
 - On tolling basis.
- Quality and timely deliveries are important.
- Non metallurgical or chemical grade alumina market gives value addition and is a growing market.

The figure given under shows the LME price trends for spot alumina prices for 10 years period. The prices, as may be seen in the graph vary considerably. The

variation is from 130 US \$ per MT to 630 US \$ per MT. It is hence imperative to be on lower side, cost wise to get advantage of sale on spot prices.



(Source: www.lme.co.uk)

Alumina: Spot Prices

(B) Aluminium metal:

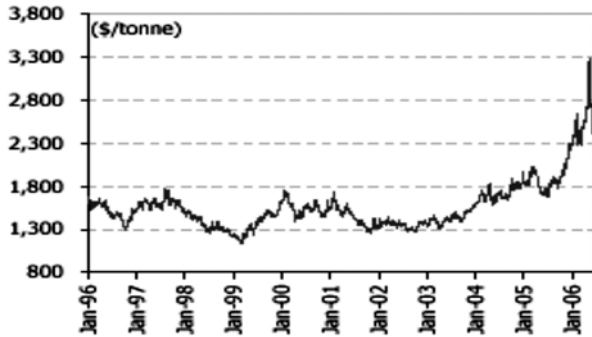
i) Price: The export pricing for alumina and aluminium metal fall in five categories namely;

- LME based
- Forward contracts on LME prices
- Fixed price
- Combination of LME and fixed price formulae
- Tender based

a. LME based prices: The prices follow as per London Metal Exchange prices.

b. Forward contracts on LME prices: It is practice in non-ferrous metal marketing to book orders for tonnages for one or two year delivered. The deliveries will be on monthly basis. The price for each delivered lot will be usually previous month average LME price or 3 month average price. Sometime if the quality is good then a mutually agreed premium will be added to the price. This will be applicable for alumina too.

LME prices vary considerably within a day and over months. A graph showing LME spot prices for 10 years for aluminium metal is placed at figure below. The price during the period was in the band 1200 US \$ to 3300 US \$ per MT.



(Source: www.lme.co.uk)

Aluminium: Spot Prices

- c. **Fixed Price:** If the quantities are large and a definite price realization is necessary then companies enter into fixed price contracts like any other industrial commodity.
- d. **Combination of LME and fixed price formula:** Some sale agreements are based on formula incorporating fixed price in past and variable part based on LME. This system assumes a minimum price especially in Alumina marketing.
- e. **Tender base pricing:** Many government bodies in Asia follow tender system in fixing prices. The selected manufacturers will be requested to send sealed bids for delivery schedules of tonnage are given in the enquiry. The lowest bidder gets the contract. While quoting prices only the marketer has to take care of LME movements and profitability to the organisation.

Other price related aspects:

1. No hedging is done by Indian marketers.
2. No tolling is adopted by Indian companies. Numbers of European and Russian companies follow tolling.
3. Traders are important in the market due to historical reasons.
4. High cost of logistics.

ii) Product: The quality and reliability play an important role in global markets. Indian aluminium industry is geared up to meet the quality requirements. It has built-in systems to assure quality products.

iii) Place: The place or location gives advantages to

Indian aluminium industry to supply to Asia, China and Europe. The transport costs are relatively cheaper to china.

Current and New Markets for Aluminium Products

The Researcher made special study of Secondary data where India can enter in global markets and global alliances that have long range prospects. The two growth countries noticed from the published statistics are Canada, China and West Asia. From analysis it is noted that entry in West Asia will be beneficial.

- No hedging is done by Indian marketers.
- No tolling is resorted to by Indian companies. Numbers of European and Russian companies follow tolling.
- Traders are important in the market due to historical reasons.
- High cost of logistics.
- Investors invest in aluminium as in others royal metals.

Global Marketing of Aluminium Products

Demand patterns of aluminium region wise is shown in Table below:

'000 tonnes	2002	2003	2004	2005	2006
USA	5410	5695	6380	6380	6540
Japan	2200	2300	2370	2417	2466
Europe	6015	6315	6470	6664	6797
Asia	3533	3968	4307	4500	4700
Other	2482	2502	2543	2761	2851
Western World	19640	20780	22070	22723	23354
CIS	850	950	1000	1050	1200
China	4200	5200	6000	6700	7600
Other	690	822	881	922	968
Eastern Countries	5740	6972	7881	8672	9768
Total	25380	27752	29951	31395	33122

(Source: Macquarie Research, Page 4, October 2004)

Demand by Region

The long term projections of aluminium consumption and consequently consumption of metallurgical grade alumina is projected that for 47.20 million for year 2015 MT of metal the alumina of metallurgy grade required. This will be 95 million MT plus about 10% as chemical alumina should be approx 105 million MT. That is an

additional manufacturing capacity of 3 million MT has to be build up every year.

Strategic Players in the Market

• Alcoa	USA
• Alcan	Canada
• Renolds	USA
• Billiton	Netherlands/UK
• Rusal	Russia
• Aluminium Pechiney	France
• Sumitomo	Japan
• Venalum	Venezuela
• Glencore (Trader)	Switzerland

India's Underlying Opportunity

- Emerging global economy
- 2006 GDP growth > 8% p.a.
 - Robust industrial production growth
 - Accelerated investment in infrastructure
 - Wealth of underexploited resources
- 4th largest worldwide reserves of coal
- 5th largest worldwide reserves of bauxite
 - Lower capital costs of setting up smelters/mining projects
 - Available experienced talent pool in aluminium production
 - Locational advantage
- Supply to SE Asia / China
- Alumina is an intermediate product to make or smelt aluminium metal. The logistics and delivery time are important for metal production schedules. Here, the bargaining power of customer is low, whereas in primary metal it is high.
- The growth of aluminium, being an industrial product, markets depends on economic indicators of a country like GSP, FDI, consumption pattern, general usage, cost of substitute materials and the local government policies.

Global Aluminium Production Growth

The growth in Asian countries and China are quite impressive in 4 year period. The capacity growth Europe is slow.

Research Design Frame work of the Study

The researcher followed the following steps frame works for the study:

1. Preceding the researcher visualized the area of studies where he desires to extract detail meaning. A discussed different proposal with his guide, then a project is selected.
2. Classifying the research question: by exploration the management dilemma are perceived and the area is selected the literature review is made to get different perspectives if research proposal was made.
3. Research design: in this phase the different steps in the research were detailed regarding the type, purpose, timeframe, scope, and environment the phases are:
 - Data collection and preparing which included design of questionnaires collection sample size and application.
 - Data gathering which is unique to the particulars quantitative research
 - Insight development and interpretation of data.
 - Analysis and interpretation
 - Decision by the research based on
 - Report analysis preparation

In devising framework, the researcher

- Formulated a research question based on perceived gap in knowledge.
- Did a literature review to survey extent of gap in knowledge.
- Hypotheses proposals were made that test research objectives and that are believed to be logically related to the problem.
- Conducted empirical test using questionnaires.
- The questionnaires were sent to the selected sample population and the responses were collected.
- Analytical and descriptive statistics were used to study the data. Statistical computer programs helped analyse the data.
- Conclusions or inductive inferences were drawn based on acceptance or rejection of hypotheses.

Primary – first hand information obtained by from the survey made.

Secondary data – published books, data from companies and market consultants. West Asia region was found attractive from the secondary data study

Parameters of study and conceptual relationships

Understand focus of manufacturers and their preparedness for global marketing challenges. Study is restricted to Alumina and primary aluminium metal in the form of ingots, billets, study in global marketing.

Research Instrument

Primary Data: First hand information was obtained from the respondents through structured questionnaire. An interview schedule was constructed to elicit information from the respondents. The researcher chose an interview schedule since the respondent has to be reminded to answer the questions put forth in the questionnaire. Moreover, the researcher had a stringent requirement for the data to be pure and in all senses comprehend the very spirit of the questionnaire and thus the research. The researcher could also clarify any doubts to the respondent and explain the objective of each question when ever the respondent raised clarification.

Researcher had to construct two sets of questionnaires. One for enabling the profiling of the large aluminium industry in India and second questionnaire was distributed across all strata of respondents, the strata decided by the size, number of years in business and the position of the respondent in the organisation. The questionnaire was constructed and each section concentrated on particular aspect of the industry. The questions were both open ended and close ended. In close ended, questions consisted of dichotomous, multiple choice and rating scales, to elicit his association with the question posed. The questions also include investigative type wherein multiple choices have been given to the respondents. The investigation questions have given the foundation for creating the research data collection investment in addition measurements question.

Secondary Data: The sources for secondary information was from published annual reports of five aluminium producers in the country namely, Hindalco, Nalco, Balco, Indal and Malco, data from London Metal Exchange, Indian Aluminium Association, and studies

published in various trade journals and conducted by various other organisations.

Literature Surveys: Studied the current literature on the subject and found 121 articles of immense value. The articles range on related subjects like, global advertising, global marketing strategies for similar metals, entry strategies, relationships, ethics and social responsibilities

Sampling Plan: The researcher developed his research plan taking the respondents who had the requisite knowledge of the aluminium industry. The sample size was taken large to eliminate bias.

Parameters of Study and Conceptual Relationships:

The main focus of the researcher to the study is to understand the attitude and preparedness of the manufacturers to meet the global marketing challenges and their commitment to explore markets outside India. The title of the project will neatly fit into International Marketing and preparedness of Indian alumina and primary Aluminium to Global Marketing Challenges, hence aptly can be conceptualised as a Marketing Study.

The study deals in intermediary product namely, Aluminas and unwrought (pig) aluminium in the form of billets, ingots only. The study excludes value added products of aluminium metal like sheets, castings, wires, foils, extrusions, alloys etc. The first year of the tenth planning (2003-04) is the base year of this exploratory study.

Scale of Refinement and Validation:

The questions in the questionnaires were refined. The characteristics of a good measurement are that the tool should be an accurate indicator of what the researcher is interested in measuring. In addition the tool should be easy and efficient. The criteria for evaluation of a measurement tool are validity, reliability and practicality.

- Validity: means that we are measuring what we want to measure. There are a number of types of validity including:
 - Face Validity - whether at face value, the questions appear to be measuring the construct. This is largely a "common-sense" assessment,

but also relies on knowledge of the way people respond to survey questions and common pitfalls in questionnaire design;

- Content Validity - whether all important aspects of the construct are covered. Clear definitions of the construct and its components come in useful here;
- Criterion Validity/Predictive Validity - whether scores on the questionnaire successfully predict a specific criterion.
- Concurrent Validity - whether results of a new questionnaire are consistent with results of established measures.
- Reliability: Implies the consistency or repeatability of the measure. This is especially important if the measure is to be used on an on-going basis to detect change. There are several forms of reliability, including:
 - Test-retest reliability - whether repeating the test/questionnaire under the same conditions produces the same results; and
 - Reliability within a scale - that all the questions designed to measure a particular trait are indeed measuring the same trait.
- Practicality: Concerned with various factors, such as level of respondents, convenience, interpretability.

The validity of scientific measurement is ensured by making the data precise. The internal validity is ensured by the researcher by making the questionnaire to get data what it is supported to measure.

Reliability and Validity

Validity of the questionnaire was very important to this survey. The questionnaire was administered on a sub-sample to assess the following validity – Face, Content, Criterion and Concurrent. On the ensuing discussion with the sub-sample and the analysis of the questionnaire, the researcher had modified the questionnaire to resolve the issues raised and understood from discussions and analysis from the pilot study, to bring in greater clarity and precision. Thus the measure of validity was ensured.

The aspect of reliability was also ensured, by giving the questionnaire to the same respondents in the sub sample at different points in time. The closeness of

the open ended questions and the repeated choice of the same alternative had ensured the questionnaire’s reliability of its application and ensuring the eliciting of adequate data for analysis.

Sampling Procedure

The researcher developed his research plan based on a snow ball sampling method, in the sense, all companies whose production collectively amounted to more than 75% of the total primary metal production in India, were included as respondents. Three companies, namely National Aluminium, Hindustan Aluminium and Madras Aluminium qualified as the candidate for being a respondent, for answering the profiling questionnaire. With respect to the general questionnaire, the researcher adopted a snow ball sampling technique, which helped the researcher to identify the respondent who possessed the requisite knowledge to answer the general questionnaire.

Industry segment	Total no. of persons available with knowledge (universe)	Sample chosen at random Nos.	No of Cos.	Replies received
Primary produces	124	31	3	26
Alloy makers	8	2	1	1
Extruders	12	3	2	2
Sheet producers	12	3	2	3
Foil producers	8	2	1	2
Forging producers	4	1	-	-
Casting producers	8	2	1	2
Electrical cables	9	2	2	2
Channel players	10	3	2	3
Experts in the field/ End users	12	3	-	2
	207	52 questionnaires sent	14	43

Snow Ball Sampling

The universe of knowledgeable persons in the industry was checked from Aluminium Association of India by discussions. As no written data is available on the subject, there are about 207 knowledgeable officers who know global marketing of alumina and aluminium metal. The names of the knowledgeable people who know aluminium global business were collected from aluminium association and further cross checked by discussions with the senior officers of the exporting companies.

Stratified Random Sampling

Stratified random sampling was adopted to cover all important sections of the industry for the study of the industrial product specially the aluminium export, being the theme of the study. Randomness in the universe of 207 numbers and choosing to 52 in total and going as per each category was achieved by 207 numbers of chits and picking the paper chits at random. The method adopted is considered appropriate for getting the requisite responses for the questionnaire framed. Unless the researcher understands the universe and its classification, he could not have developed the procedure for stratifying the sample selection from the universe.

The summary of the sampling adopted are:

The sample size of 52 (fairly a large sample to provide a normal distribution) out of 14 companies qualified to be the respondent to this survey, based on stratified random sampling criteria set in by the researcher to eliminate the bias. This sampling plan enabled the researcher to cover all the players for the general questionnaire enabling the researcher to achieve the objectivity of studying the Indian Aluminium Industry holistically.

Demographic Information of the Customer (sample profile)

- Officers at different levels in aluminium manufacturing. The officer's works in different development and location in India.
- Officers in other aluminium companies like, casting, extrusion, forging, fabrication, packing, building and construction, exporters and the like who are users of aluminium products in different forms.

- Small industry owned and partners who use these products.
- Marketers and exporters of aluminium products.
- End users of the products.

Data Analysis

Frequency and Cross Table Analysis

In the first phase of response analysis, the 43 numbers of responses received were collated, studied and tabulated. The statistical analysis of each of the question in the questionnaire was made with the help of a computer program. The responses were tabulated in frequency tables. In case of multiple choice questions, the frequency of each response to each attribute was taken into account. Here the valid total choices will be more. Based on the frequencies a graph showing the frequency and options in question was drawn. Inferences were made which represented the opinion of the respondents. The details are given in sub chapter 4.1

In the second phase of analysis, cross tables were made to bring in the relationship aspects between different parameters and find percentage of responses. The attributes are:

- Customer satisfaction and ownership type
- Mode of communication and ownership type
- Major marketing strategies and ownership type
- In phase three, the ten hypotheses were tested by Chi-Square testing. The results were recorded after each test.

Rationale for using the Frequency and Cross Table Analysis

Frequency table is a simple device for arranging data. It gives data by assigned numerical value with columns for percent, valid percent adjusting for missing data and cumulative percents. The other co-ordinate will be the response variable. The data is presented in tabular format and by pie chart or a bar chart. The values and percentages are more easily understood in this graphic format. In graphs by visualization the relative positions are appreciated. This simple technique is used by the researcher.

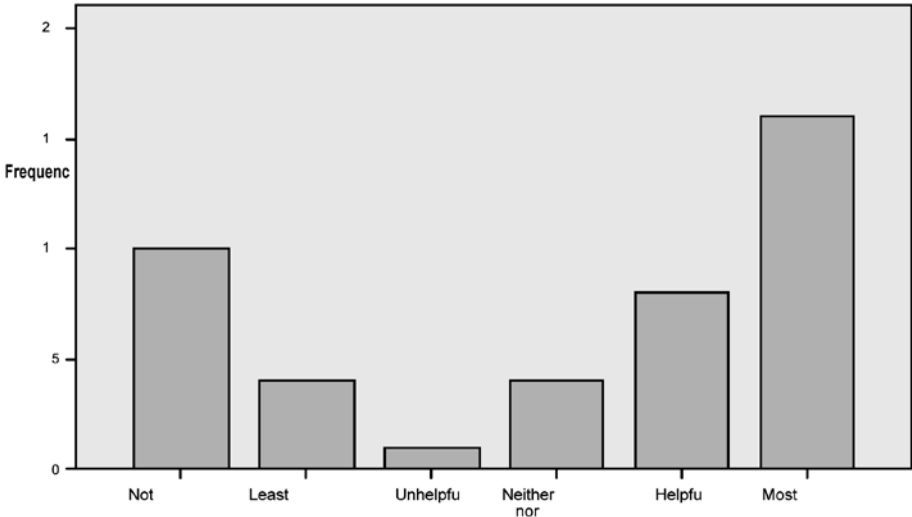
Cross tabulation is a technique for comparing data from two or more categorical variables. Cross tabulation is

used with demographic variables and target study of the variable with operationalised measurement questions. Cross tables will have rows and columns showing to the level of variables. Each cell count of the cases of joint classification of rows and column percentages and total percentages are noted. This technique is used by the researcher in this study.

Role of Global Traders in Alumina Marketing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Applicable	10	23.3	23.3	23.3
	Least Unhelpful	4	9.3	9.3	32.6
	Unhelpful	1	2.3	2.3	34.9
	Neither Helpful nor Unhelpful	4	9.3	9.3	44.2
	Helpful	8	18.6	18.6	62.8
	Most Helpful	16	37.2	37.2	100.0
	Total	43	100.0	100.0	

Role of Global Traders in Alumina



Inference:

The firms use different methods to understand the nature of country and the markets in which they prefer to enter. The researcher with the above tries to understand the role of global traders in facilitating international markets.

With respect helpfulness of the role of global traders, 37.2% of the respondents felt their role as most helpful; where as 18.6% felt their role to be helpful and 9.3% felt that their role is least helpful. 23.3% of the respondents did not fall under the purview of this question.

Hypothesis Testing:

An example of hypothesis test done is:

Major Marketing Strategy and Method of Deriving Competitive Advantage

	Quality Product	Customer Service	Customer Base	Right Price	Product Promotion	Row Total
Expand Customer Base	24	20	19	19	18	100
Right Quality Product	31	25	23	27	22	128
Good Customer Service	29	26	24	24	21	124
Competitive Price	24	21	20	23	19	107
Promotion	20	17	16	18	17	88
Column Total	128	109	102	111	97	547

	Quality Product	Customer Service	Customer Base	Right Price	Product Promotion	Row Total
Expand Customer Base	23.4	19.93	18.65	20.29	17.73	100
Right Quality Product	29.95	25.51	23.87	25.97	22.7	128
Good Customer Service	29.02	24.71	23.12	25.16	21.99	124
Competitive Price	25.04	21.32	19.95	21.71	18.97	107
Promotion	20.59	17.54	16.41	17.86	15.61	88
Column Total	128	109	102	111	97	547

Formulated Hypothesis

H_0 : There is significant difference in the methods used to derive competitive advantage based on major marketing strategy.

H_1 : There is marked difference in the methods used to derive competitive advantage based on major marketing strategy.

Choice of Test of Hypothesis: The sampling being judgmental, non-parametric statistic needs to be used. χ^2 being both a parametric and non-parametric is considered adequate test for the situation.

Criterion for Accepting or Rejecting the Null Hypothesis:

If the probability of the χ^2 statistic calculated is less than 0.05, reject the null hypothesis and accept alternative hypothesis; else accept null hypothesis.

Result

The probability of χ^2 is 1, being greater than 0.05, the null hypothesis accepted, implying that there is significant difference in the methods used to derive competitive advantage based on major marketing strategy.

The One Way ANOVA Tests

The One-Way ANOVA compares the mean of one or more groups based on one independent variable (or factor).

Hypotheses

Null: There are no significant differences between the groups' mean scores.

Alternate: There is a significant difference between the groups' mean scores.

One Way ANOVA – Global Presence Attribute, Factor based on the position of the respondent						
		Sum of Squares	df	Mean Square	F	Sig.
Global Presence Attribute - Promotion	Between Groups	.955	2	.478	1.952	.155
	Within Groups	9.789	40	.245		
	Total	10.744	42			
Global Presence Attribute - Quality of Product	Between Groups	.652	2	.326	3.464	.041
	Within Groups	3.766	40	.094		
	Total	4.419	42			
Global Presence Attribute - Market Share	Between Groups	.391	2	.196	.948	.396
	Within Groups	8.260	40	.206		
	Total	8.651	42			
Global Presence Attribute - High Tech Production Facility	Between Groups	1.381	2	.690	2.994	.061
	Within Groups	9.224	40	.231		
	Total	10.605	42			
Global Presence Attribute - Favourable Government Policy	Between Groups	.744	2	.372	2.001	.149
	Within Groups	7.442	40	.186		
	Total	8.186	42			
Global Presence Attribute - Does not exist	Between Groups	.011	2	.006	.223	.801
	Within Groups	.964	38	.025		
	Total	.976	40			

Inference: The researcher from the above table understands that there is a significant difference in the mean scores for Global Presence Attribute classified based on the position of the respondent. This implies the way the management thinks about Quality of Product and High Tech Production attribute are the two differences among the groups and all other factors are considered similarly by the respondents. This is validated by the significance levels less than 0.10 significance.

Pearson Correlation Test

The Pearson R correlation tells you the magnitude and direction of the association between two variables that are on an interval or ratio scale. The correlation

coefficient is a number between +1 and -1. This number tells us about the magnitude and direction of the association between two variables.

The **MAGNITUDE** is the strength of the correlation. The closer the correlation is to either +1 or -1, the stronger the correlation. If the correlation is 0 or very close to zero, there is no association between the two variables.

The **DIRECTION** of the correlation tells us how the two variables are related. If the correlation is positive, the two variables have a positive relationship (as one increases, the other also increases). If the correlation is negative, the two variables have a negative relationship (as one increases, the other decreases).

Preferred Mode of Global Entry Strategy and Adequacy of Marketing Strategy

Preferred Mode of Entry - International Markets *Adequacy of Marketing Strategy Cross tabulation					
Count					
		Adequacy of Marketing Strategy			
		No	Yes	Maybe	Total
Preferred Mode of Entry - International Markets	Direct Method	2	10	7	19
	Indirect Method	0	0	6	6
	Direct and Indirect Methods	0	2	1	3
	All Methods	2	9	4	15
	Total	4	21	18	43

Symmetric Measures					
		Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Interval by Interval	Pearson's R	-.183	.149	-1.190	.241 ^c
Ordinal by Ordinal	Spearman Correlation	-.079	.156	-.509	.614 ^c
N of Valid Cases		43			
a. Not assuming the null hypothesis.					
b. Using the asymptotic standard error assuming the null hypothesis.					
c. Based on normal approximation.					

Inference: Researcher from table 5.4.2 come to understand that the adequacy of the marketing strategy's influence over global entry strategy is null. It implies that the adequacy of marketing strategy does not influence the entry strategy devised by each respondent. This result is derived from Spearman Correlation, which provides a correlation value of -0.079, implying no correlation.

Achievement of Objectivity

By large sampling of 43 responses out of a total universe of approx. 207 in all section of the industry and geography in aluminium industry; consisted of 14 companies.

- SSI Units
- Medium Scale Units.
- Large Units
- Public Sector
- End Users
- Marketers, Logistics and Planners.

Limitations of Study

- Geographical scatterings of the respondents from whom the data needs to be collected.
- Since majority of the respondents identified for this survey where from top management and middle management cadres of 14 companies. Getting their time for the survey was indeed a limitation.
- The limitation is also the number of respondents who had the requisite knowledge on all the aspects of the industry and in particular in global marketing of the product.
- The number of large channel players (the marketing channels) in this industry.

Findings

General respondents

- The two predominant modes of communication among the respondents of aluminium industry are direct face to face communication, backed up by emails, telephone and posts.
- The frequency of assessing customer satisfaction by the respondents from the aluminium industry is half yearly. Customer meets are organized predominantly once in year by the respondents of aluminium industry.
- The prime producers of aluminium are supplying right quantity and quality goods to their customers. More than half of the respondents possess a average finished goods inventory of 2 weeks and a fifth of the respondents had a average inventory of one month.
- The major marketing strategy adopted by Indian Aluminium Industry is the production of right quality

product, supported by creation of good customer base and competitive pricing.

- Futuristic mission based on the position of the respondent: Proprietors/ partners set the futuristic mission for the company as expanding capacity for global competition, producing quality product and improving customer service.
- Effect of long term economic policies based on position of the respondent: Both middle management and top management opined that economic policies are helpful; while proprietary/ partnership respondents felt otherwise.
- Major Marketing Strategy based on ownership type: Proprietary firms and partnership firms adopted predominantly right quality and competitive pricing as their marketing strategy; while limited companies adopted customer service as predominant strategy followed by right quality product.
- Attitude towards the usefulness of branding based on ownership type: Proprietary firms and limited company predominantly accepted that branding is useful for enhancing their marketing capability

Respondents from Manufacturers

- Nearly half of the respondents paid fixed percent royalty; while a quarter employed profit sharing method and the rest, fixed fee agreements.
- Half of the respondents felt that the impact of the government policies on the production activities is average.
- New collaborations and innovation are perceived as most helpful corporate strategies, for the development of global markets.
- Both forward and backward integration are used by companies in Indian Aluminium Industry.
- The attrition rate of the marketing employees in the industry varies significantly from company to company, some having as low as less than 5% and some as high as 20 to 30%.
- Attending immediately to the complaint, conducting discussion across the table, proper and regular interaction with the customers are the measures adopted by Indian Aluminium Industry to redress complaints from their customers.

Conclusion

Aluminium being an important metal of the future and has good growth prospects due to its profound existing application and new application is being developed internationally. In Aluminium industry technology provides the distinguished quality leadership, coupled with excellent logistics and waste reduction can also help achieve the objective of cost reduction too (Aluminium industry is a price sensitive industry) which will propel Indian Aluminium industry much better among international competitors. The Indian Aluminium industry recognizes the need to leverage on their existing core competencies and build new ones in the areas of quality, value addition to customers, competitive pricing and better customer service. To achieve the international quality standards Indian Aluminium firms are aligning either to LME standards. Indian Aluminium industry players should recognize that being a demand oriented market and industrial market; customers will have the upper hand in terms of quality, timely supplies, reliability and value for their money. The procedure of tolling is prevalent in this industry than the existence of counter trade which can be assumed nil. Indian Aluminium industry agrees that faster growth can be achieved in terms of spread and geography through the route of acquisition and joint venture.

Indian aluminium industry currently exports to United Kingdom, United States of America, Dubai and other countries like China, South Korea and Canada. To gain an export market all of the attributes, say promotion, quality of product, customer base and service, high technology production facility and favourable government policy are required. Analysis by researcher suggests that no single factor can help capture International markets. Thus the firm exporting and seeking for international markets should develop holistic strategies, rather than concentrating on any one attribute. Moreover to derive competitive advantage by Indian Aluminium firms abroad, again a complete strategy focusing on producing quality product, excellent customer service, country specific pricing and better product promotion has to be envisaged. What the researcher has evolved from this work is that, a complete inclusion and development of these attributes, levels the success of

Indian aluminium industry internationally and can help compete with established players in global market and gain a niche for itself.

Recommendations

- Indian Aluminium Industry has to increase the speed of market entry, in order to provide first entry advantage to most of the unexplored markets. This will provide a substantial edge of Indian aluminium industry over other international competitors.
- To demonstrate the seriousness of our presence to international customers, setting offices in the country of export is essential. This will make the international customer feel at ease, since the supplier is always accessible and the requirement of the company can be well understood.
- Strategic vendor relationship with industrial consumers has to be encouraged in export markets. One suggested way is to lock these industrial consumers in long term contracts. Other is to demonstrate the commitment of Indian aluminium industry to their objectives. Strategic vendor relationship needs to be obtained even if it requires to under price. The under pricing strategy would work if the Central, State and Municipal bodies are able to subsidize the taxes and tariffs. The indirect advantage to the government is that the Balance of Payment position can be reduced to the extent of these exports plus the foreign exchange derived of such exports.
- The approach of international marketing should be able to establish Indian foothold in this industry at the initial entry level. A consortium can be set up by these firms in the industry, to promote national competence advantage in this industry. Once Indian aluminium industry establishes foothold in this metal internationally then firm individually can establish their position easily.
- Quality up-gradation by bringing quality in all aspects of manufacturing and service is an essential prerequisite. In any industrial product, quality is the main focus. Indian Aluminium Industry should set the highest standards for quality, as quality viewed in itself as a strategy can attract customer to Indian

Aluminium Sector and companies can easily form strategic tie-ups.

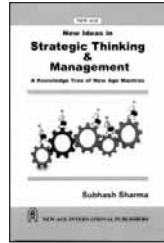
- Global Marketing strategies to suit specific markets are to be evolved and entry strategies evolved. Country specific strategies are important as the application of the end product will differ from countries to countries. Understanding their culture and the functioning of the government can always make better inroads to global marketing. If the Indian Aluminium Association can persuade the government to set up special task force to understand and study this feasibility of long term contracts, the industry will be benefited and in most cases will be reciprocated by other governments too.
- Government of India should allow import of old plants for speedier project implementation to increase capacity. This will allow for faster capacity expansions.
- Aluminium industry should build its own infrastructure like rail wagons or ships for its growth and enter into long term contracts for space such that logistic schedules are maintained and concerns over the problem of transportation avoided. All this aimed at timely delivery as an important indicator of customer satisfaction.
- As a global marketing strategy companies should go for long term contracts based on LME average prices, on put and call basis or suitable formula to develop large customer base. Such a cap and floor should protect the industry from price fluctuation and secure profits. Such strategy of put and calls should not affect the customers, since the risk is managed by a third party or LME, relieving both the customer and Indian Aluminium respondents from the concerns of fluctuations.
- The process of standardization should be evolved by Indian Aluminium Industry such that any global customer is assured of the quality of Indian aluminium. These standards should be the minimum benchmark the respondent companies should adopt.
- Industry should look for growth by acquisition, joint venture or by managing sick units. Acquisition overseas will help global marketing easier and

better and Indian Aluminium companies can look into markets deeper and wider from that acquired location.

- Even though India has quality bauxite resources in India, acquiring stake in countries with bauxite resources help Indian companies in aluminium sector to restrict entry of competitors as raw material is critical to survival in the industry. Thus Indian companies should make efforts to acquire stakes in bauxite rich mines.
- It is recommended that value addition be planned in phases, such that customer requirement is met. Value addition brings in more margins than primary metal and move up the value chain.
- It is recommended to acquire state of art technology to compete in international markets. Technology will enable the industry to process the raw material at a lower cost and produce finished products higher up the value chain, bringing better margins and creating a global edge for Indian Aluminium companies.
- Regular customer meets overseas will help facilitate interaction and understand requirements which enable the Indian aluminium industry to become strategic partners which will enable easy access to global markets.
- Advertisement for aluminium as a commodity by the industry will popularize the per capita consumption of aluminium in developing world. Like Gold Council, aluminium council can fund research and development to develop new products, technology and thus enabling new customers and new markets.
- Proactive approach in market regarding pricing, service and attending customer complaints is recommended. All the above attributes are strategy by itself and can be pursued in combination to become successful in global markets

Proposed Model for Aluminium

- Evolve global entry and promotional methods.
- Value growth by acquisition, joint venture or by managing sick units in line with global growth on fast lane like steel industry.
- Acquire state of art technology to stand in competitive markets.
- Regular customer meets overseas to facilitate interaction and understand their requirements which enable the Indian aluminium industry to become strategic partners which will enable easy access to global markets.
- As a global marketing strategy companies should go for long term contracts based on LME average prices, on put and call basis or suitable formula to develop large customer base.
- Proactive approach in market regarding pricing, service and attending customer complaints in global markets.



BOOK REVIEW

**Subhash Sharma: New Ideas in Strategic Thinking & Management -
A Knowledge Tree of New Age Mantras:
New Age International (P) Ltd., First Edition, 2016
PP 1-210+xvi**

Reviewer: N.S. Viswanath

This book under review is based on the original work of Subhash Sharma in the area of Strategic Management. It is divided into five parts. There are sixteen chapters which is further sub divided into 89 themes. The author has followed phase-wise enumeration of theme of each part. In the area of knowledge creation, the three approaches i.e. quantitative - empirical, qualitative conceptual and creative –meditative are enumerated in detail. The description of the thought process moving from quantitative empirical to creative meditative is described by typology metrics. The author has succinctly divided intuition reality approaches into the above these to elucidate research approaches. Interestingly, approaches to research in mathematics, economics and social science have rationality & logic as their bases. The freedom of thought process uses words, metaphors and symbols to describe a concept. The author makes a comparison of scientific approach as against the approaches of scientists from psychology and physics and mathematics. The author documents some of the creative media research approaches which are likely to open up doors for rethinking. The limitation of the part one is that of accepting spirituality in the domain of scientific frame work. The author's contribution to enumerate thought processes using acronym is a thoughtful idea. Phrases such as VITAL, Diya, Rishi, META, WISDOM are all facilitators to capture and recapitulate the scientific method of investigation.

The author further examines the evolution of management thought by grounded praxis approach.

He develops paradigms and categorizes management thought process into American, Indian and Japanese. The roots of the contributors coming from respective countries are acceptable. However, categorization of management thoughts by country of origin such as American, Indian, Japanese has limitations. The thought process emerged from these companies during Industrial revolution and post world war II. After reading part one, the reviewer wondered as to why the author has not considered evolution of organization and its role in solving human problems. The concepts of Institution and Organization development are yet to find a place in the present book.

The 2nd part in this book concentrates on macro perspective associated with strategic thinking, symbols, yantra, connectivity, social order, measurement of happiness, National Business Units (NBUs) against Strategic Business Units (SBUs) are all covered in detail. The thematic description of macro perspective is loaded with coconut model, swastika, chakra and viswanization. There is an approach to action based corporate thinking which the author calls 'economics of chapatti making'. Interestingly, the author has in his mind, Indian society as back drop. Chapatti is used as symbol for production and to deliver prosperity, peace and justice for all. Since the enumeration is based on unification of Indian society, as against integration, there is lack of connectivity between the thought process and reality. The comparison of thought process of Gandhi, Nehru, Narasimha Rao, APJ Abdul

Kalam and Narendra Modi have been significant from time perspective. The analysis of such time oriented concepts leads to further clarity in the way the Indian economy is moving. The author connects economy with society by appropriate acronyms and metaphors.

The third part concentrates on models and mantras which the author calls as 'new'. The use of growth of plant life using BCG matrix is commendable. The author provides an integrated approach by extracting from the best of management scientists C.K. Prahalad, Michael Porter and Sumantra Ghoshal on performance of organizations. Introduction of stake holder happiness index (SHI) in assessing perception is interesting. The entire part is beset with acronyms such as CINE, METRIC, FATE, Anti-benchmarking, VISA, SWAN & SPOT. The author gets sparks through acronyms such as SPSS, KPCL, VSP and ODM. These acronyms are aptly tested by a case study on reengineering of an industry.

The part 4 of the book is enumerated on ethical foundation. There is a description for transaction to intra-personal as well as inter-personal references. The foundation of business is in ethics based on which transaction will make a great difference! The author speaks of character competence as against business competition. The thoughts projected in this chapter

apply to all types of organizations. Given the ethical foundation of an organization in business, long time survival and growth are ensured.

The last part of the book is again to coin strategies. The oceanic strategic approach is only with respect to driving organization towards success. The thoughts of the present thinkers in management are briefed. The new metaphors and model the author talks about is only for facilitation to recapitulate where ever necessary. There is however no sound basis of a theory in which metaphors can be used. Over use of metaphors may block thought process which is evidenced in Part 5 of the book.

The dilation of thoughts on strategic management is however new. The author deserves a special place in this area for linking up strategy with individual and the aggregate. The entire book can be made into five separate books by in depth analysis of the contribution made by management scientists.

The books of strategy by Hill & Jones, Alex Miller, C.K. Prahalad, Porter and Ghoshal are distinctly not different because of unification of the process of thought in their contribution. Subhash Sharma makes a distinct mark from all these for his creative linkage with acronyms in the area of management.



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Administrative & Editorial Office:

BHARATIYA VIDYA BHAVANS

M. P. Birla Institute of Management

#43, Race Course Road, Bengaluru 560 001, India

•Ph: +91-80-2238 2798, 4277 2000

•Email: nsv@mpbim.com

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REFERENCES

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A Conference Publication: S.F Roehrig, Path analysis and probabilistic networks: analogous concepts, in: Jay F. Nunamaker, R.H. Sprague (Eds.), Proceedings of the 26th Hawaiian International Conference on System Sciences, Vol. III, IEEE Computer Society Press, Los Alamitos, CA, 1993, pp.523-532.

A Monograph: Harawini G. Swavy I, "Mergers and acquisitions in the US Banking Industry: Evidence from the capital markets", North-Holland, Amsterdam, 1990.

An article in an edited book: Mac Avoy and E. Roberts, "Establishing Superior Performance through Competitive Analysis", in Strategic Planning and Management Hand book, William R. King and David I. Chelland (Eds.), Van Nostrand, New York, 1987.

A Book: A. Zeithaml Valarie, A. Parasuraman and Leonard L. Berry, "Delivering Quality Services: Balancing customer perception and expectations", Tree Press, New York, 1990.

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