



International Journal of Management, IT & Engineering

(ISSN: 2249-0558)

CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1	Empirical and Qualitative Studies by Analyzing Requirement Issues In Global Software Development (GSD). Rabia Sultana, Fahad Jan, Ahmad Mateen and Ahmad Adnan	1-18
2	Challenges and Opportunities of Technology Transfer Management. Armin Mahmoudi	19-34
3	SMEs Competitive Advantage through Supply Chain Management Practices. Prof. Gyaneshwar Singh Kushwaha	35-50
4	Different Issue for Handling Different Cache Strategies on Usenet. Harish Rohil and Jitender Yadav	51-71
5	Power Quality enhancement in MICROGRID (Islanding Mode) by Using ND - MLI DSTATCOM. M. Manigandan, MIEEE and Dr. B. Basavaraja, SMIEEE	72-90
6	Analysis of Optical Soliton Propagation in Birefringent Fibers. R. Samba Siva Nayak, Suman. J and Naveen	91-102
7	Human Resource Accounting in IT industry (A study with reference to Infosys Technologies Limited). Dr. P. Natarajan and Bashar Nawaz	103-123
8	Solving profit based unit commitment problem using single unit dynamic programming. P.V. Rama Krishna and Dr. Sukhdeo sao	124-146
9	Achieving Optimal DoS Resistant P2P Topologies for Live Multimedia Streaming using Cost function Algorithm. A. L.Srinivasulu, S. Jaya Bhaskar, Ms. K. Deepthi and Dr. Sudarson Jena	147-162
10	Quality of Web Sites – A Study On Some Standard Indian Universities. K. V. N. Prasad and Dr. A. A. Chari	163-182
11	Simulating Complex Environmental Phenomena Using Cubemap Mapping Technique. Movva. N.V. Kiran Babu, Ch. Siva Rama Krishna, M. Hanumantha Rao and V. Venu Gopal	183-203
12	Data Sharing and Querying in Peer-to-Peer Data management System. Jyoti Duhan	204-223
13	Secure File Transmission Scheme Based on Hybrid Encryption Technique. Gaurav Shrivastava	224-238
14	Investigating Flip-Flop Gates Using Interactive Technology. Mr. Amish Patel, Ms. Neha P. Chinagi and Mr. Hiren R.Raotole	239-255
15	B2B Versus B2C Direct Selling. Ankit Chadha and Er. Banita Chadha	256-270
16	Application And Implementation of Crm In Hotels of Developing Cities - A Case Study of Ranchi. Praveen Srivastava, Abhinav Kumar Shandilya and Shelly Srivastava	271-294
17	An Automatic Bacterial Colony Counter. Ms. Hemlata, Mr. Ashish Oberoi and Mr. Sumit Kaushik	295-309

Chief Patron

Dr. JOSE G. VARGAS-HERNANDEZ

Member of the National System of Researchers, Mexico

Research professor at University Center of Economic and Managerial Sciences,
University of Guadalajara
Director of Mass Media at Ayuntamiento de Cd. Guzman
Ex. director of Centro de Capacitacion y Adiestramiento

Patron

Dr. Mohammad Reza Noruzi

PhD: Public Administration, Public Sector Policy Making Management,
Tarbiat Modarres University, Tehran, Iran
Faculty of Economics and Management, Tarbiat Modarres University, Tehran, Iran
Young Researchers' Club Member, Islamic Azad University, Bonab, Iran

Chief Advisors

Dr. NAGENDRA. S.

Senior Asst. Professor,
Department of MBA, Mangalore Institute of Technology and Engineering, Moodabidri

Dr. SUNIL KUMAR MISHRA

Associate Professor,
Dronacharya College of Engineering, Gurgaon, INDIA

Mr. GARRY TAN WEI HAN

Lecturer and Chairperson (Centre for Business and Management),
Department of Marketing, University Tunku Abdul Rahman, MALAYSIA

MS. R. KAVITHA

Assistant Professor,
Aloysius Institute of Management and Information, Mangalore, INDIA

Dr. A. JUSTIN DIRAVIAM

Assistant Professor,
Dept. of Computer Science and Engineering, Sardar Raja College of Engineering,
Alangulam Tirunelveli, TAMIL NADU, INDIA

Editorial Board

Dr. CRAIG E. REESE

Professor, School of Business, St. Thomas University, Miami Gardens

Dr. S. N. TAKALIKAR

Principal, St. Johns Institute of Engineering, PALGHAR (M.S.)

Dr. RAMPRATAP SINGH

Professor, Bangalore Institute of International Management, KARNATAKA

Dr. P. MALYADRI

Principal, Government Degree College, Osmania University, TANDUR

Dr. Y. LOKESWARA CHOUDARY

Asst. Professor Cum, SRM B-School, SRM University, CHENNAI

Prof. Dr. TEKI SURAYYA

Professor, Adikavi Nannaya University, ANDHRA PRADESH, INDIA

Dr. T. DULABABU

Principal, The Oxford College of Business Management, BANGALORE

Dr. A. ARUL LAWRENCE SELVAKUMAR

Professor, Adhiparasakthi Engineering College, MELMARAVATHUR, TN

Dr. S. D. SURYAWANSHI

Lecturer, College of Engineering Pune, SHIVAJINAGAR

Dr. S. KALIYAMOORTHY

Professor & Director, Alagappa Institute of Management, KARAIKUDI

Prof S. R. BADRINARAYAN

Sinhgad Institute for Management & Computer Applications, PUNE

Mr. GURSEL ILIPINAR

ESADE Business School, Department of Marketing, SPAIN

Mr. ZEESHAN AHMED

Software Research Eng, Department of Bioinformatics, GERMANY

Mr. SANJAY ASATI

Dept of ME, M. Patel Institute of Engg. & Tech., GONDIA(M.S.)

Mr. G. Y. KUDALE

N.M.D. College of Management and Research, GONDIA(M.S.)

Editorial Advisory Board

Dr. MANJIT DAS

Assistant Professor, Deptt. of Economics, M.C.College, ASSAM

Dr. ROLI PRADHAN

Maulana Azad National Institute of Technology, BHOPAL

Dr. N. KAVITHA

Assistant Professor, Department of Management, Mekelle University, ETHIOPIA

Prof C. M. MARAN

Assistant Professor (Senior), VIT Business School, TAMIL NADU

Dr. RAJIV KHOSLA

Associate Professor and Head, Chandigarh Business School, MOHALI

Dr. S. K. SINGH

Asst. Professor, R. D. Foundation Group of Institutions, MODINAGAR

Dr. (Mrs.) MANISHA N. PALIWAL

Associate Professor, Sinhgad Institute of Management, PUNE

Dr. (Mrs.) ARCHANA ARJUN GHATULE

Director, SPSPM, SKN Sinhgad Business School, MAHARASHTRA

Dr. NEELAM RANI DHANDA

Associate Professor, Department of Commerce, kuk, HARYANA

Dr. FARAH NAAZ GAURI

Associate Professor, Department of Commerce, Dr. Babasaheb Ambedkar Marathwada University, AURANGABAD

Prof. Dr. BADAR ALAM IQBAL

Associate Professor, Department of Commerce, Aligarh Muslim University, UP

Dr. CH. JAYASANKARAPRASAD

Assistant Professor, Dept. of Business Management, Krishna University, A. P., INDIA

Technical Advisors

Mr. Vishal Verma

Lecturer, Department of Computer Science, Ambala, INDIA

Mr. Ankit Jain

Department of Chemical Engineering, NIT Karnataka, Mangalore, INDIA

Associate Editors

Dr. SANJAY J. BHAYANI

Associate Professor, Department of Business Management, RAJKOT, INDIA

MOID UDDIN AHMAD

Assistant Professor, Jaipuria Institute of Management, NOIDA

Dr. SUNEEL ARORA

Assistant Professor, G D Goenka World Institute, Lancaster University, NEW DELHI

Mr. P. PRABHU

Assistant Professor, Alagappa University, KARAIKUDI

Mr. MANISH KUMAR

Assistant Professor, DBIT, Deptt. Of MBA, DEHRADUN

Mrs. BABITA VERMA

Assistant Professor, Bhilai Institute Of Technology, DURG

Ms. MONIKA BHATNAGAR

Assistant Professor, Technocrat Institute of Technology, BHOPAL

Ms. SUPRIYA RAHEJA

Assistant Professor, CSE Department of ITM University, GURGAON

Title

**CHALLENGES AND OPPORTUNITIES OF TECHNOLOGY
TRANSFER MANAGEMENT**

Author(s)

Armin Mahmoudi

Assistant Professor,

Department of Studies in Education,

Yasouj branch, Islamic Azad University, Yasouj, Iran.

Abstract:

Today, technology has become so rich that many of the developing countries can't even afford to have all the facilities, It is admitted that these changes and takeovers affected economical, industrial, security, technical, cultural aspects of many countries in the world-wide age, only by gaining technological capabilities, power sources for competing with other countries could be gained. Therefore, to expand economical development of a country, it is the politicians and bureaucracy developing countries, duty to look after their respective countries' economic problems by keeping in mind their technological gap with the industrial world which is a very dangerous matter and by use of their knowledge about all related policies; they should provide scope of technology for their country. In this paper, the meaning of technology transfer process in different stages of cycle of technology life, facilitating catch up, and technology diffusion, management of technology, spillover of huge political process of technology transfer and necessities it at national level of developing countries, have been discussed.

Key words: Management of Technology, Technology Transfer, Technology Diffusion, Catch-Up Method, Technology Spin-off, Technology Spillover.

1. Introduction:

In the past, the availability and usage of raw materials, workmanship, transportation and sources were more or less the compete power of countries, though still remain so, but today, developed countries get advantages from spread of knowledge to make advanced technology which helps them in competing with others, For instance the national consultative of technology and science in America published an article regarding "Attention to technology at national level" which says progresses in technology is one of the important facts which determines economic growth of countries. About half of the economic growth of the United States in a long period of time over past 50 years is because of technology.

According to many politicians, technology transfer could be a suitable solution to decrease distances between developed countries and developing countries.

There have been various methods in technology transfer which had been experienced and each must be studied. With respect to all of valuable experiences in terms of technology transfer to countries, there are many challenges in field of technology transfer. In this paper, we study some of these challenges. These is a process in an organization where in that, developed (Asia and pacific center for transfer of technology (APCTT), 1986). With due attention to the ever-increasing role of new technology in improvement of quality, and providing higher value in production on one part, and converting the investigated thoughts to assured economic ways to the other part, there won't be any doubt that the only way to make amends for technical regarding of a country is to use other's successful experiences in new arenas. If these experiences and knowledge of techniques are used correctly, then the real technology transmission is done successfully. In the other words, technology transmission is a phenomenon in which a particular technology is used by other parties for the same purpose or other purposes.

It goes through different stages such as: recognition, assumption, acquisition, compatibility and at last development of technology is considered.

2. Methods of Technology Transfer:

In the m field of management of technology, the terminology 'technology transfer' is sometimes used as 'technologic co- operation' which seems to be more comprehensive and covers wider areas. Recently there was lot attention to joint (or-co- operated) technology. Further, from the management point of view, how to organize technology co- operation will be discussed and studied.

Technology co- operation can be classified according to technology life time stages, which are (Caliano,R,chiessa, V., Manizni,R.,200)

2.1. Researches co- operations

In this type the result of research can't be explained perfectly in terms of priority and that is due to its concentration on discovery activities. Therefore the last result of the research is unknown. The activities are usually very risk and it is probable that the research project fails. In research co- operation one of the current motives in technologic co- operation is to limit and to decrease

the risk. The expenses of research are high and difficult to provide, especially if the companies are SMEs. Technology co- operation provides an opportunity to allocate suitable resource with the help of several co- operating companies. Other motives could be the following.

- Access to different fields of technology.
- Development or Deeping knowledge in a technology field and improving creativity by helping the connecting of people to different cultures.
- Universities and research and creative

Companies who are they are experts in special technology fields and competitors in similar activilies, can take part in these co operations.

2.2. Technology co- operations expansion

In these co- operations, matter of work is known and that is because, first a new product has to come into existence. For instance it is very common in pharmaceutical industry; big institutions give- over clinical activities to other companies. Expanding co- operations usually combined with high economical and commercial risks. New products might not be sold very well or might not function well for the user. Technologic risk (risk in developing project ' s faillre) is low for example in electronic and dispatches industry; the risk is about only one- third or one- fourth of the development at phase The most important aim of these kinds of co- operations is time reduction as well as decrease of related expenditures in development by help of subscribing sources and wealth; companies will try to find partners due to heavy amount of development expenditure so that the amount reduces.

2.3. Manufacture and production co- operations

Usually in this kind, the aim of co- operation has been explained for a short period of time and sometimes it is limited, but like producing a product or a particular part, the timing is according to area of co- operations in long time or short time. Financial and technologic risk is lower, but instead, the market risk is higher. Sometimes when the demand for a product is unknown, co- operation risk in manufacturing and producing will increase. The most important motives are:

- * Achieving a suitable scale of production in small institutions.
- * Providing harmony in competences and suitability for producing complex products.

* To give- over the activities, outside the institution.

3. Macro policies of technology transfer:

1. Overall graph for technologies which supply particular needs of people.
2. Criteria of technology evaluation.
3. Latest technology
4. Middle technology
5. Old technology
6. Time
7. In this section macro policies of technology transfer will be explained which includes.
8. Catch-up method,
9. Technology diffusion,
10. Management of technology
11. Technology spillover

3.1. Catch-up method

Though developing countries are behind developed countries in terms of technology, they can use their advantages of being new, To develop their own technology. One of these advantages is to learn from other sources and import technology. New emerging countries can learn others experiences. Many of the useful technologies are available with good prices; therefore there is on need of producing them again. (A famous slang says that there is no need to create a wheel which is already created). Emerging countries should also pay attention to different aspects of bringing up a new technology. To buy or have mature technologies, lesser money and risk is needed.

The other policy to use could be jump (Technological Leapfrogging). These countries can jump from middle developing technology stage, by assisting needs. Here the strategy of producing technology has been meant.

3.2. Models (example) for catch-up

Study of six different industries in South Korea, introduce some catch-up model's (short cut models). Though they are not the only models, but the results of these projects are very useful and instructive. These are the three models (Lee K, Lim c 2001).

3.3. Catch-up (short-cut) via following way

Catch-up in following way means the new companies continue the same way as other companies used to do, but these new companies will move on faster in time, Compared to the old companies.

3.4. Catch-up via jump in the way

Second model is catch-up via jump in the way which means, new companies, after passing half the way, will move on from some of the stages.

3.5. Catch-up by creating new ways

This is the third model: Here they create new ways which means the new companies will do deep research on their expansion of technology. This happens only when these new companies follow some other companies, way and achieves a new stage and change their direction to a new direction and then create their own new way. Therefore among these three models, the first model is more traditional. While other the two models are new to techno technology policies. Although these models are not a fixed phenomenon, they will be used for mixed models actions. For instance observed in the study, electronic industry machine technology and also personal computers (PC), they used the 'following model' Technological Leapfrogging had been used for car and vehicle industry and 'creating way' had been used in phone industry.

3.6. Technology Diffusion

Putting difference between technology transfer and technology diffusion is important. 'Technology transfer' is the first step in 'technology diffusion' which means, producer transfer the knowledge to receivers. While 'technology diffusion' is where new created knowledge will be collected and will be spread between numerous interactions by leaning from each other.

'Technology transfer' will just expanse information and knowledge, while 'technology diffusion' will expand and will change the technology's place. Therefore 'technology transfers' will be explained as a part of 'technology diffusion' which is a wider and more complicated subject than 'technology transfer'.

3.7. Policies of technology diffusion

Spread of technology is very complicated and the varieties are more. That is why it can't be classified with a particular standard. In fact it is defined technology transfer as part of technology diffusion process; accordingly by adapting a systematic approach can clarify the system of Technology diffusion policies on the basis goals, functions and method of doing the operation (Park Y-T, 1999).

3.8. Classification according to aims

Aim, is first and most important standard to study and analyze policy. Direction and amount of movement's interference will be specified with aim. It also covers economical and social needs. Policies of technology diffusion will be classified into four groups.

1. Axis technology aims: this program or policy helps a particular technology spread to an industry or place or institution.
2. Axis organization aims: this program or policy settles increase of technique powers of a special organ or small institutions.
3. Axis industries aims: this program helps strengthen and conserves special industries to compete

4. Axis area aims: this program helps technical power of a special area to increase.

3.9. Classification according to outputs

Policies of spread of technology vary in terms of outputs. These programs can be classified into five groups.

- Producing outputs: Universities and movement research centers and personal institutions join together to create new technology. In this case production and diffusion of technology happens together at the same time.
- Transforming output: Technology's wealth of public resources will be guided (moved on to) to personal institutions for spin-off of technology.
- Commercial output: Public companies help personal institutions, so that the R&D results turn to commercial productions. Therefore publish causes used technology to improve from ability of attracting institutions.
- Consulting output: Technical and managerial problems in personal institutions will be solved by general company so that imported technologies get attracted easily.
- Emigration output: Human recourses get exchanged between personal institutions. This causes the abilities which are hidden in each person to increase and show up.

3.10. Classification according to ways of accomplishment

Ways of execution of technology diffusion is nothing but a relation among partners. Methods of spread programs can be studied and analyzed in different ways.

Regarding that, five models are introduced.

1. Pair wise method: usually two or more couple of partners work together, either in hierarchical order or partners work together, either in hierarchal order or horizontally; therefore spread of technology happens by direct relations between partners.

- 2. Intermediate methods: in this method, a third partner will act as an agent or intermediary between other partners for purpose of spreading technology, in fact it acts like catalos in between.
- 3. Mixed method: here, numbers of partners will be like consortium which might be real or metaphorical (fake). Therefore spread of technology happens to be co- operation of partners together.
- 4. Moving method: an external partner moves between other partners or exchanges human resources among them, until the hidden technology or the technique services in the human mind spreads out smoothly.
- 5. Metaphorical method: Several partners join together indirectly through electronic channels. Each one of them can use technical services or shared information personally.

4. Management of Technology:

Management of Technology as: "an interdisciplinary area relating to designing, developing and technological abilities to form and fulfill strategic and operational goals on all orgalizaouir "Teonoiogy management is a specialized interdisciplinary area incorporates sciences, engineering, and knowledge and management skills.

It focuses on technology known as the main factor of wealth creation. Certainly, wealth creation is not money. It depends on elements like knowledge improvement, intellectual property. Effective productivity of resources, environment preservation etc which affect standard development and quality of life. Technology management includes accepting responsibility, creation, purchasing, dissemination and technology development, to help peoples' efforts and customers' needs, (Khalil, Tarek, 2000). The principal domain of management is technology is: How can we incorporate technology with strategic goals of organization? How can we develop technology more quickly? How can we evaluate technology with more effectiveness? How can we better transfer technology? How can we increase longevity and decrease development of new production? How can we manage inter organizational technology? How can we use professional effectiveness of technology as a progressive factor? (Khalil, Tarek, 2000).

5. Technology spillover:

Technology spillover means, a technology which is gained due to presence of other multinational companies in a host country. Usually, these presences are happening by attracting foreign investment through these companies. Direct spillover happens only if companies of different nationalities which have their own technology start training programs to provide human power needed; then by authorizing know-how needed for production and necessary software, starts working. It will cause human technical power increases in the host country. In exchange for these personnel to other similar institutes, the experiences also would get transferred. This is the most important matter for these companies in the host country. Direct spillover could happen in other ways like expansion of secondary contractor's in host country for purpose of providing multinational companies needs. Anyway The company which owns technology provides scope of increase in technical experiences for local companies in different transactions.

6. Conclusion:

Just as we saw, technology transfer has different meanings at different levels of technology development (research co-operations, development and production).

Also it is understood now that technology diffusion is considered a predetermined condition for affecting technology transfer process at national level. Though technology transfer is the most important aim of economic institutional managers in most developed countries, but technology diffusion (or in the other words, spread of technology at national level) is the politicians sensation in developing countries.

Usually, governments get advantages of political improvement aiming to facilitate technology transfer process. It includes:

1- Technology diffusion. 2- Facilitating catch-ups (short-cuts). 3- Strengthening technology spillover.

Just as we saw, the accomplishment of any of the policies mentioned above depends on concerning of regards and duties which needs experts and managers, of these opinions of this

realm. I trust this paper could have clarified the ambiguities of some different concerned technology transfer at the national level for developing countries.

7. Acknowledgements:

I will thanks a lot of Dr Maredpor for helping me in this case

8. Reference:

- Kalil, T. (2000), Managemnt of technology The key to competitiveness and Wealth Creation, Mc Graw Hill
- Hamed, H, Habibola. T.(1998), Convention of Management of technology.
- Khalil Tarek-management of technology-the key to competitiveness and wealth creation-2000
- Chiesa, V., Manzin.R.1998. orgsnizing for technological collaborations: a managerial perspective. R & D Management 28 (3) 199-212.
- Cagliano,R., Chiesa,V., Manzini, R., 2000. Differences and similarities in research, development and manufacturing: a case study international Journal of Engineering and Technology Management 17 (2000) 193-224
- Park y-t, 1999, "Technology diffusion policy: arview' and classification of policy practices", Technology insociety 21 (3), 275-286.
- Radosevic . S. 1999, "international technology Transfer and Catch-up in economic development", Edward Elgar