educator

FIMT Journal

About the Journal

The Educator – the FIMT Journal having (ISSN No. 2277-9736) ***is*** a *peer-reviewed* and Bi-annual journal. It welcomes original papers from both academicians and Professionals on management, business, economics and related issues. Papers based on theoretical or empirical research or experience, should illustrate the practical applicability and/or policy implications of work described.

The Journal has the following features:

- ***Perspectives*** presented on emerging issues and ideas that call for action or rethinking by managers, administrators, and policy makers in organizations. Recommended length of the article is 12,000 to 15000 words.
- ***Research*** includes research articles that focus on the analysis and resolution of managerial and academic issues based on analytical and empirical or case research. Recommended length of the research paper is about 20,000 words.
- ***Management Case*** describes a real-life situation faced, a decision or action taken by an individual manager or by an organization at the strategic, functional or operational levels.

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Journals focused towards the publication of current research and review work carried out globally. All contributions to the journal are rigorously refereed and are selected on the basis of quality and originality of the work. The journal publishes the most significant new research and review work in all areas pertaining to its scope and research being done in the world, thus ensuring its scientific priority and significance.

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These embody important findings that are novel and by coverage are of reasonably wide interest. Communications should contain a brief abstract and an introductory paragraph. It is important to note that text should not be divided under subheads. Journal adheres to a stringent review/ screening process for considering a manuscript for publication in it. If a manuscript withstands an initial pre-screening test based on the aforesaid guidelines, it is forwarded to a detailed main-screening by competent reviewers/editors and referees. Here a manuscript is further grilled by another subject expert separately. If consensus in the prescreening and main screening is not arrived- at, on acceptance or rejection of, an opinion from third expert is sought for.

V. K. Nangalia Bhardwaj
(Chairman)

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Chairman Message

It is a matter of great pleasure and responsibility for the FIMT family in bringing out the third issue of its Bi-annual Educator –the FIMT Journal Volume VI No. I Jan-Jun., is a testimony of our dedication and vision. This step is towards enhancing the capabilities and enhancing the skills of the upcoming talent in the field of research.

The FIMT is known for best infrastructure for student and faculty. It provides open, healthy, academic environment, innovative thinking, and student's oriented approach with global perspectives, where students are "Most Important Person – MIPs and all resources of our institute are used to build a new cadre of global professionals.

It has established the tradition of being innovative and open and this is why I am so profoundly proud to be part of this institute with its short but proud history. I am confident that the FIMT "educator" is a platform to the teachers and academicians to be creative and share their knowledge and learning with other resources from the industry at large.

One of the most significant gaps in our professional education in the country is its weak linkage with the industry and professionals. Until and unless we take creative steps to strengthen this linkage, Professional education will not receive the respect it deserves. I trust that "educator- the FIMT Journal develops into a comprehensive document to divulge the knowledge on socially, culturally and scientifically relevant subjects and does the yeoman services for the larger interest of humanity.

The editorial team deserves appreciation of their sincere efforts to being forth the diverse achievements of the institute. I congratulate the Director, Faculty, and the managing editor of the Educator for successfully bringing out their purposeful Journal. I am sure this positive work will continue in future also and will be able to achieve the objectives of this journal.

I invite all the persons who are engaged in research to participate in the process of knowledge creation and its disbursement to concern stakeholders.

V. K. Nangalia Bhardwaj
(Chairman)

From The Editorial Board

"Knowledge increase when it is shared" —

It *gives* me immense pleasure to bring to you the Fourth issue of educator 2013. Conceived, initiated, and contributed by faculty members from various universities, the journal is a pioneering Endeavour of a college. It is a small step to bring together the minds of academia, researchers, and readers in one bind.

We believe that learning is a never-ending process and one continues to discover oneself in this journey. However, this process is not an isolated and individual venture. It requires an impetus and environment to thrive and flourish in. Keeping this aim in mind, the journal seeks to facilitate this learning environment. It is a concerted effort to give academic researchers a platform to present their ideas in front of an erudite community. The journal is a collection of the best papers contributed by academics that have spent years specializing in the field of commerce, accounting, business management and law.

Given the dynamic nature of commerce and business world, the best ideas are those that can stay abreast of changes in business and technology. The journal has therefore chosen papers that display this foresight and can stand the test of debate and discussion. It is a two-way process that benefits the consumer of this journal and the authors by opening up new questions, study, and investigation. It aids teachers to introduce this newfound learning into their classroom instruction.

This issue includes papers on various facets of management. The journal has been designed to cover the research papers, and articles. During the process of editing, I learnt lot of practical things — how to Select, proofread, process of publishing, technology involved and post publication issues. I am thankful to the patron, Ms. Nalini's, the secretary of society who provided his able guidance while giving the team a free hand in the whole process. The elite Editorial Board and the members of team deserve a vote of appreciation and thanks for giving a fine shape to the present issue. We hope you enjoy reading our articles as much as we enjoyed writing them. This Journal will ensure to explore the new researches from the industry and academia in future.

Managing Editor

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Customer Relationship Marketing and Impact of Information and Communications on Real Estate Sector

DR. Ajit Kumar Shukla

Abstract : The emergence of service as well as market economy, global orientation of businesses, and aging population of the economically developed economies have been identified as the growth drivers for CRM. In this era of globalization where 'Customer is our God, customer expectations are going up which is making the situation more and more competitive. This can help to perform key functionalities effectively – service billing-generation of bills for maintenance, water and electricity charges, corporate leasing, retail and residential sales, construction procurement and payables, promotional/deferred revenue billing etc. and platforms to enhance the management reporting and communication with customers in real estate sector.

INTRODUCTION

In these days Customer Relationship Marketing (CRM) has emerged as a popular buzzword in the business. The emergence of service as well as market economy, global orientation of businesses, and aging population of the economically developed economies have been identified as the growth drivers for CRM. The challenges faced by businesses in the twenty-first century, arising from non-traditional competition, market maturity, and misalignment between revenue and profits, will increase the importance of customer relationships for businesses to survive and also thrive. The demand and supply factors, which are likely to motivate more businesses to adopt CRM in the future. Increasing customer expectations and affordable technology advances, as primary drivers of CRM adoption.

Explosion of CRM Both in Marketing And It

In the 1990s, CRM started attracting attention of academicians as well as practitioners from marketing and IT. A series of research conferences on various aspects of buyer-seller relationships were organised by the Center for Relationship Marketing at the Emory University (1994-2000), the Scandinavian academics at the Swedish School of Economics and Business Administration in Finland and Stockholm University in Sweden, the Industrial Marketing and Purchasing Group (IMP) and the annual International Colloquium in Relationship Marketing (from 1993 onwards). Leading academic journals including the Journal of the Academy of Marketing Science (Fall 1995), the Asia-Australia Marketing Journal (issue 1, 1994) and (issue 1, 1997), Industrial Marketing Management (issue 2, 1997), and the European Journal of Marketing (issue 2, 1997) published special issues on relationship marketing (Payne, 2000). The Journal of Marketing is publishing a special section on CRM in its October 2005 issue. Journals focusing on CRM like the Journal of Relationship Marketing (Haworth Press), forums and associations like the CRM Community (http://www.crmcommunity.com) and the Association for the Advancement of Relationship Marketing as well as the American Marketing Association's (AMA) academic Special Interest Group (SIG) on Relationship Marketing have played a significant role in advancing the understanding and practice of relationship marketing. The academic interest in CRM has been sustained by research centres established at business schools, many of them with corporate support, e.g. the Teradata Center for CRM at Duke University's Fuqua School of Business.

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CRM is a tool for delivering a variety of marketing dreams such as:

- To target and serve customers on an individual basis. It permits one to one marketing.
- To help in establishing durable relationship with customers.
- To dis-intermediarize channels of the wasteful barriers and distortions.
- To reduce marketingcost progressively.

CRM is the core business strategy a bent of mind that aims at understanding and managing the needs of the customers. It integrates internal processes and functions and external networks, to create and deliver value to targetede customer at a profit. It is based on high quality customer related data and enabled by information technology.

CRM integrates internal processes and functions, that is, it allows department within the business to dissolve the silo walls that separate them. Access to customer related data allows selling, marketing and service functions to be aware of each other's interactions with customers. Furthermore, back office functions can help and contribute to build up customer related data. This will allow stakeholders of the business-suppliers, partners, and distributors-to align their efforts with those of the focal company. Thus a successful CRM implementation will enable the corporates to make quick, informed and intelligent decisions, create new selling to new and potential customers, cross selling and upselling opportunities to existing customers as well.

Real Estate companies are located very close to the markets they serve and know their customers intimately. Very often they are face-to-face, even day-to-day interactions with customers where knowledge of customer requirements and preferences grew. How-ever, as companies have grown larger they have become more remote from the customers they serve. The remoteness is not only geographic, it is also cultural.

Review of the Literature

Bateman & Snell (2007) observed that CRM is a business process which results in optimized profitability and revenue generation, while achieving customer satisfaction. Often also known as relationship marketing by marketing academicians, CRM is an information technology assisted process that establishes a collaborative environment for businesses to analyze the buying behaviour and product/service requirements of an individual or group of exisint as well as potential customers.

Pisharodi, Angur and Shainesh (2003) in a study of success of CRM found that a process oriented strategic approach to connect the operational, informational and the organizational components of CRM are critical for the success of CRM application. Reinartz & Kumar (2002) pointed out that Managers need to be careful in differentiating customer loyalty and customer profitability. Enterprises ought to understand the fact that managing customers for loyalty is different from managing them for profits.

As per the Research Note by Gartner Group (2001), more than 75% of enterprises engaged in CRM initiatives are incapable of putting together a comprehensive view of their customers. Further, it noted that market leadership would be attained by enterprises that achieve maximum value and customer satisfaction within each customer segment being served by them. Parvatiyar and Sheth (2001) observed that CRM is a comprehensive strategy and process of acquiring, retaining and partnering with selective customers to create superior value for the company with the customers.

CRM AND REAL ESTATE SECTOR

There are various factors which affect the need for CRM in the real estate sector. They are following :

New technologies, research facilities, globalization of services, the flood of new products and the concept of all the facilities under one roof to provide better customer service leading to customer delight. To make the Customers well informed about the regulations and norms. With the introduction of new technology, the world has become like a small village. Thus, if a firm wants to have more customers, it should develop a good relationship with its present customers and attract new customers and try to maintain the same in the future also. In the intensely competitive real estate sector, to build a lifelong relationship with their customers, retention of existing customer is vital, which can be achieved through the process of CRM. Since most real estate companies

cannot merely be content with relying on their website or marketing strategies, they need to find other means by which they can search and retain the customers for new selling and upselling. CRM as a business process that enables the real estate industry to do just this – focus on their customers. CRM gives ability to boost sales and marketing functions as a chance to increase sales leads. It reduces sales, marketing and warranty costs. It enables the Real estate professionals to have a clear and succinct view of the real estate market.

CRM and Innovative Services

Some of the features included in the Real Estate Sector are following :

- Comprehensive Customer Information (Individuals & Non-Individuals).
- Pipleline Management to Convert leads to opportunities and track throughout the sales cycle.
- Sales Force Management selling methodologies to help ensure opportunities are tracked and closed consistently and efficiently.
- Sales literature to create, manage, and distribute sales and marketing materials, including brochures, while papers, competitor information, and more.
- Marketing Campaigns to track campaign activities, import leads, convert leads to opportunities, view cost and performance data, and more
- Rule based Pricing – The Pricing for various Units/Unit Types/PLC etc can be defined for different durations.
- Multiple Payment Plans for Basic, PLC and additional Services based on predefined as well as underfined dates.
- Payment Plans are editable for individual customers at any stage.
- Complete Dealer Database: Provision to define multiple Brokerage & payment slabs for varying durations as well as for different payment plans.
- Option to define Multi leel Dealers Hierarchy and their overwriting brokerage.
- Acknowledgements: All cheques received, are acknowledged first and the receipt is generated only after the clearance of cheque.
- Various Alerts for Bounced Cheques to concerned executives and subsequently to the customer.
- Auto Payment Reminder Alerts as per different payment schedules.
- Auto SMS Alert and Email notifications for various occasions.
- Fund Transfer facility from one booking to another within or across the projects.
- Comprehensive Financial Accounting module linked with the entire chain of real estate transactions.
- Documentation Module Manages Document Tracking right from the point of its origin till its final destination. At every stage, the document viz. Cheques, Receipts, Builder buyer agreement, Application Form, Client's ID, Allotment Letter, Reminders, Possession letter, etc. is acknowledged by its recipient.
- Provision to rate Potentiality of a customer by the executive on a defined scale. This ensures follow up on priority for the highly potential customer.

Findings

Meticulous planning, effective communication, stakeholder involvement and mistake avoidance will ensure that your initiative gets off the ground easily. In this era of globalization where 'Customer is our God, customer expectations are going up which is making the situation more and more competitive. On the basis of the study, there are some findings which could be implemented profitably by the organizations:

- Streamlining enquiry tracking from start to closure creating a sales channel. This can help to sustain customer interaction for generating repeat business.
- Maintaining Activity schedule records to throws up reminders as pop-ups.
- Maintaining Central customer database maintains record of customer transactions, contact and personal information and communication history in a single window.
- Organization should strive to understand the problems of the customers in order to secure CRM benefits.

CONCLUSION

The growing importance of services resulted in greater customer orientation as real estate sector. The real estate is where the customer is and service is offered in real time. With varied interest and with the increase in physical locations of organizations, there are pressing need for a unified / integrated CRM application that could give a comprehensive view of the organizational operations providing critical information instanteously. This integrated CRM can eliminate the operational / data redundancies, enhance the flow of information and thus can significantly improve productivity and profitability. This can help to perform key functionalities effectively – service billing-generation of bills for maintenance, water and electricity charges, corporate leasing, retail and residential sales, construction procurement and payables, promotional/deferred revenue billing etc. and platforms to enhance the management reporting and communication with customers in real estate sector.

REFERENCES

Kumar Alok, Sinha Chhabi, Sharma Rakesh, Customer Relationship Management: Concepts & Application, Wiley India.

Kotler P. Brown J. and Makens J. (2002), "Marketing for Hospitality and Tourism", Pearson Education, Delhi.

Shainesh G. and Sheth J.N. (2006), "Customer Relationship Management- A Strategic Perspective" Macmillan, New Delhi.

Shanmugasundaram S., Customer Relationship Management: Modern Trends And Perspectives, PHI Learning Pvt. Ltd.

Shukla, Ajit K., (2013), 'Marketing Management, (2nd Edition), Varanasi, Vaibhav Laxmi Prakashan.

- http://www.hospitalityebusiness.com
- http://www.crm2day.com
- http://www.crminfoline.com

An Appraisal of Municipal Solid Waste Management In India: With Special Reference to Delhi

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Abstract : Municipal solid waste management is part of a broader urbanization problem. Most urban areas in the country are plagued by acute problems related to solid waste. Municipal Solid Waste Management (MSWM) a major responsibility of local government. It is a complex task which requires appropriate organizational capacity and cooperation between numerous stakeholders in the private and public sectors. Although it is essential to public health and environmental protection, solid waste management in most cities of developing countries is highly unsatisfactory. In this paper we identify the goals and principles that normally guide MSWM system development. It discusses key objectives and issues which should be addressed by MSWM strategies with regard to political, institutional, social, financial, economic and technical aspects. MSWM is an important entry point for integrated urban management support; the Framework paper concludes by outlining possible directions for development cooperation. In India, Ministry of Urban Development, the Ministry of Environment and Forests, Ministry of Agriculture, have been working concertedly towards collection of information, on various proven technologies for processing and disposal of wastes; identifying effective and cost appropriate technologies, suitable under Indian conditions and advice the State Governments and ULBs to adopt such technologies. This paper provides a broad overview of recent trends in solid waste and recycling, related public policy issues, and literature devoted to these topics. An assessment of the prevalent trends and methods employed and the implementation of orders vis-a-vis the Laws passed will be made, trying to reason out probable causes and drawbacks.

Key Words: Municipal Solid Waste management, Processing and Disposal of Wastes, Implementation of Rules

The authors would like to thank the discussants and to those present for giving comments on earlier draft of this paper at The National Seminar on "Economics of SWM-an Indian perspective" 12 – 13 March, 2010, Jamia Millia Islamia University.

INTRODUCTION

In the present era of a so called "environmentally – conscious" world, Solid wastes constitute the most visible form of environmental bads, seriously affecting the quality of life and posing policy challenges-severe, complex and unique to itself. Lack of proper planning, inefficient management, lack appropriate technology, financial resources, scarcity of land, mixed land uses, and legal instruments the concerned agencies are not in position to deal with the growing magnitude of solid waste, leading to environmental degradation and ecological imbalance.

Municipal solid waste is defined to include refuse from households, non-hazardous solid waste from industrial, commercial and institutional establishments (including hospitals), market waste, yard waste and street sweepings. MSWM encompasses the functions of collection, transfer, treatment, recycling, resource recovery and disposal of municipal solid waste. The Urban Local Bodies (ULBs) undertakes the task of solid waste service delivery, with its own staff, equipment and funds. In a few cases, part of the said work is contracted out to private enterprises.

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This paper discusses at length about the SWM hierarchy, in terms of most preferred and least preferred actions with respect to solid wastes, the scope of MSWM which encompasses planning and management systems, waste generation processes, and organizations, procedures and facilities for waste handling, various policies and recommendations by the government disposal authorities, the various techniques and mechanisms applied for the management and handling of Solid Wastes in India.

The goals of MSWM in essence is to protect the health of the urban population, particularly that of low-income groups who suffer most from poor waste management. To substantiate this point, we can quote the following figure: According to 2001 Census, Delhi has the highest percentage of urban population and there has been a 46.31% growth of its population between 1991 and 2001, as compared to 21.34% for all India. With the present pace of growth, the population by 2021 shall be around 22 million and the garbage generation in Delhi is likely to increase to 18,000 tons per day by that time. Not very different is the story of other cities too. We have to generate reliable and up-to-date information and awareness regarding negative effects of solid waste on health and property values.

Secondly, MSWM aims to promote environmental conditions by controlling pollution (including water, air, soil and cross media pollution) and ensuring the sustainability of ecosystems in the urban region. Thirdly, MSWM supports urban economic development by providing demanded waste management services and ensuring the efficient use and conservation of valuable materials and resources. Fourthly, MSWM aims to generate employment and incomes in the sector itself.

Community participation becomes very important as it comprises various degrees of individual or collective involvement (financial and/or physical contributions, social and/or political commitment) at different stages of a project. Further, it can increase capabilities at the level of the community and it encourages cost sharing of project activities.

SCOPE OF MUNICIPAL SOLID WASTE MANAGEMENT

Within the overall framework of urban management, the scopeof MSWM encompasses the following functions and concerns:

1. Planning and Management
   - Strategic planning
   - Legal and regulatory framework
   - Public participation
   - Financial management (cost recovery, budgeting, accounting, etc.)
   - Institutional arrangements (including private sector participation)
   - Disposal facility siting
2. Waste Generation
   - Waste characterization (source, rates, composition, etc.)
   - Waste minimization and source separation
3. Waste Handling
   - Waste collection
   - Waste transfer, treatment and disposal
   - Special wastes (medical, small industries, etc.)
   - Practical strategies for improving MSWM will thus comprise specificobjectives and measures in these areas.

Development strategies comprise specific objectives and measures in these areas. They need to consider the specific interests, roles and responsibilities of numerous actors, including:

- households, community-based organizations (CBO) and other service users,
- local and national government authorities,
- non-governmental organizations (NGO)
- formal and informal private sector enterprises, and
- External support agencies (ESAs).

PREFERENTIAL HIERARCHY OF SOLID WASTE MANAGEMENT

Most Preferred:

1. Avoid- It is the most cost effective, as no waste means no cost is involved in its management. Waste avoidance is suitable at the point of source in its application. Producers should be examining how

waste can be eliminated in the production process. This can involve modifying or changing the process, adopting new technology or using another material as substitute to prevent waste generation. Consumers can change their shopping behaviour, such as by buying in bulk, choosing products with an appropriate lifespan in minimal packaging, refusing disposable carry bags, or bringing along their reusable shopping bags.

2. Reduce- This can involve redesigning packaging to use less materials and cutting out unnecessary packaging, looking into using materials more efficiently, implementing new processes and technology, and replacing disposal products with reusable and durable ones where practical.

3. Reuse- Reusing the product more than once in its original form avoids the excessive consumption of resources and waste generation. Examples include the refillable drink container, reusing shipping pallets and passing unwanted clothing, books, toys, old furniture, etc. onto others who can use them.

4. Recycle-When reuse can no longer be carried out, the materials should be recycled back into similar products or become secondary raw materials for the production of new products. Generally producing new products from recycled materials consumes less energy and spares the environment from further abuse and degradation through mining for the primary virgin materials. Composting is also a form of recycling. Recycling also saves landfill space, an important universal issue as most cities are rapidly running out of space to store their rubbish.

5. Recover-Energy recovery can be a viable option after reduction; reuse and recycling have been fully explored and generally is the final step in the exploitation of maximum benefits from waste. It involves the incineration of waste and the recovery of the latent heat energy of the materials. The heat energy can then be converted into power to be used commercially or domestically.

Least Preferred:

1. Treatment and Disposal- The left over waste has to be treated and disposed of properly to safe guard against environmental risks, pest problems, social, health and safety issues. Problems concerning landfills are carbon dioxide and methane emission, leachate contamination of underground water, aesthetic degradation from increased dust, litter, noise, vermin, increased traffic congestion and property devaluation.

Strategic Aspects of Solid Waste Management

To achieve sustainable and effective waste management, development strategies must go beyond

Purely technical considerations to formulate specific objectives and implement appropriate measures

With regard to political, institutional, social, financial, economic and technical aspects of MSWM:

Political aspects concern the formulation of goals and priorities, determination of roles and jurisdiction, and the legal and regulatory framework:

- Society's goals and priorities regarding environmental protection and equitable service access must be clearly articulated in order to mobilize popular support and resources required for their realization.
- A clear definition of jurisdiction and roles is essential to the political sustainability of MSWM systems. The .strategic plan. for MSWM provides a basis for putting the defined roles of government authorities and other actors into effect.
- Bylaws, ordinances and regulations for MSWM should be few in number, transparent, unambiguous and equitable.

Institutional aspects concern the distribution of functions and responsibilities and correspond to

Organizational structures, procedures, methods, institutional capacities and private sector involvement:

- Effective MSWM depends upon an appropriate distribution of responsibilities, authority and revenues between national, provincial and local governments. In metropolitan areas, where MSWM tasks extend across several local government units, inter-municipal cooperation is essential.

- Decentralization of responsibility for MSWM requires a corresponding distribution of powers and capacities. It normally calls for revised organizational structures, staffing plans and job descriptions of the local agencies concerned.
- Capacity-building measures for MSWM should give primary attention to strategic planning and financial management. Discrepancies often exist between MSWM job requirements and the actual staff qualifications; training and human resource developments are thus important components.
- Private sector involvement in MSWM implies a shift in the role of government institutions from service provision to regulation. Essential conditions for successful private sector involvement include competitive bidding, technical and organizational capacity, regulatory instruments and monitoring and control systems.
- The contribution of informal waste collection workers may be significantly improved through appropriate organizational measures.

Social aspects of MSWM include the patterns of waste generation and handling of households andother users, community-based waste management and the social conditions of waste workers:

- Waste generation patterns are determined by people's attitudes as well as their socio-economiccharacteristics. Attitudes towards waste may be positively influenced by awareness-building campaigns and educational measures.
- In many low-income residential areas, community-based solid waste management is the only feasible solution. Functional links between community-based activities and the municipal system are very important, however.
- Even where municipal waste collection services are provided, user cooperation is essential to efficient MSWM operations. Cooperation may be promoted through general awareness-building programs as well as focused MSWM information campaigns.

Financial aspects of MSWM concern budgeting and cost accounting, capital investment, cost recovery and cost reduction:

- Although they are essential to effective MSWM, available practical methods of budgeting, cost accounting, financial monitoring and financial evaluation are too seldom employed. Their application should be actively promoted within institutional development programs.
- The main options for financing capital investment for MSWM include local budget resources, loans from financial intermediaries and special central government loans or grants. While central financing is often needed, investment authority should be devolved to local governments.
- The main options for financing recurrent MSWM costs are user charges, local taxes and intergovernmental transfers; clear preference should be given to user charges. To achieve equitable service access, some degree of cross-subsidization and/or financing out of general revenues is often needed, however.
- MSWM fee collection performance is often poor. Improvement can often be achieved by attaching solid waste fees to the billing for another service, such as water supply.
- The potential for increasing MSWM revenues is usually limited; cost reduction, "doing more with less" is almost always the best way to improve financial sustainability.

Economic aspects of MSWM are concerned with the impact of services on economic activities, cost-effectiveness of MSWM systems, macro-economic dimensions of resource use and conservation, and income generation:

- Solid waste generation and the demand for waste collection services generally increase with economic development.

— A trade-off is normally required between the objectives of low-cost collection service and environmental protection.
— The economic effectiveness of MSWM systems depends upon the life-cycle costs of facilities and equipment and the long-term economic impact of services provided.
— Economic evaluation constitutes an important input to strategic planning and investment programming for MSWM.
— Measures should be introduced which discourage wasteful use of materials and encourage waste minimization.The best way to promote efficient use and conservation of materials is to internalize the costs of waste management as far as possible in the production, distribution and consumption phases.
— Private sector involvement in waste management may actually reduce the number of jobs in the sector. Economic strategies should seek, firstly, to increase effectiveness and labor productivity of MSWM and, secondly, to generate employment by expanding service coverage.

Technical aspects of MSWM are concerned with the planning and implementation and maintenance of collection and transfer systems, waste recovery, final disposal and hazardous waste management.

— Technical facilities and equipment must be designed and selected with careful regard to their operating characteristics, performance, and maintenance requirements and expected life-cycle costs. Close attention should be paid to preventive maintenance, repair and spare parts availability.
— Design of transfer facilities and equipment must match the characteristics of local collection systems and the capacity of existing disposal facilities. Local collection systems should be designed with active participation of the communities concerned.
— Informal waste recovery and scavenging may be rendered more productive through support measures and appropriate technical design of the waste management systems tominimize their environmental impact, landfills must be carefully sited, correctly designed and well operated. Sources of hazardous waste materials must be identified, registered and targeted for appropriate management; special attention needs to be paid to infectious healthcare wastes.

SELECTION OF APPROPRIATE PROJECT

Depending upon the availability of land and its topography, economic .viability, available technology and social conditions any one or more of the following techniques could be employed:

1. Land Fills- Disposing of waste in a landfill involves burying the waste, and this remains a common practice in most countries. Landfills were often established in abandoned or unused quarries, mining voids or borrow pits. A properly-designed and well-managed landfill can be a hygienic and relatively inexpensive method of disposing of waste materials. Older, poorly-designed or poorly-managed landfills can create a number of adverse environmental impacts such as wind-blown litter, attraction of vermin, and generation of liquid leachate. Another common byproduct of landfills is gas (mostly composed of methane and carbon dioxide), which is produced as organic waste breaks down anaerobically. This gas can create odor problems, kill surface vegetation, and is a gas. Design characteristics of a modern landfill include methods to contain leachate such as clay or plastic lining material. Deposited waste is normally compacted to increase its density and stability, and covered to prevent attracting vermin (such as mice or rats). Many landfills also have landfill gas extraction systems installed to extract the landfill gas. Gas is pumped out of the landfill using perforated pipes and flared off or burnt in a gas engine to generate electricity.

2. Open Dumping- The cheapest and the oldest method of USW disposal is 'open dumping' where the refuse is dumped in low-lying areas on the city out-skirts and leveled by bull-dozers from time

to time. In spite of its simplicity in execution, the financial involvement for this traditional method of waste management has been quite high particularly for the big metropolis. As for example, the corporation of greater Bombay spends around 9% of its annual budget which is over 17 crore of rupees per year with an average disposal cost of around Rs. 150 per tonne of USW.

In spite of heavy financial involvement, the drawbacks of open dumping are:

(i) exposure to flies and rodents,
(ii) a source of nuisance from smell and repulsive appearance,
(iii) partial disposition of the loose refuse by the action of wind, and
(iv) Serious pollution of surface and ground water.

With horizontal growth of cities, particularly metropolis, new housing colonies are coming up close to the former dumping areas and essentially for this reason 'open dumping' should be discontinued in a phased manner.

3. Incineration (with or without power generation) - Incineration is a disposal method that involves combustion of waste material. Incineration and other high temperature waste treatment systems are sometimes described as "thermal treatment". Incinerators convert waste materials into heat, gas, steam, and ash. Incineration is carried out both on a small scale by individuals and on a large scale by industry. It is used to dispose of solid, liquid and gaseous waste. It is recognized as a practical method of disposing of certain hazardous waste materials (such as biological medical waste). Incineration is a controversial method of waste disposal, due to issues such as emission of gaseous pollutants.

4. Pelletisation/ Densification- means a process whereby pellets are prepared which are small cubes or cylindrical pieces made out of solid wastes and includes fuel pellets which are also referred as refuse derived fuel;

5. Anaerobic digestion- means a controlled process involving microbial decomposition of organic matter in the absence of oxygen; if the organic waste is buried in pits under partiallyanaerobic conditions, it will be acted upon by anaerobicmicroorganisms with the release of methane and carbondioxide; the organic residue left is good manure. This processis slower than aerobic composting and occurs in fact naturally in landfills. However, thermophilic digestion for biomethanation is much faster and has been commercialized.

Anaerobic digestion leads to energy recovery throughbiogas generation. The biogas, which has 55–60% methane,can be used directly as a fuel or for power generation. It isestimated that by controlled anaerobic digestion, 1 t ofMSW produces 2–4 times as much methane in 3 weeks incomparison to what 1 t of waste in landfill will producein 6–7 years. Studies reveal that in all situations (rural, urban orcity, etc.) where space is available, composting is the betteroption because it prevents the load on municipalities forcollection and transport of MSW and then reduces thepressure on the landfills. It also provides a valuablebyproduct for agriculture.

6. Composting- The bacterial conversion of the organics present in MSW in the presence of air under hot and moist conditions is called composting, and the final product obtained after bacterial activity is called compost (humus), which has very high agricultural value. It is used as fertilizer, and it is non-odorous and free of pathogens. As a result of the composting process, the waste volume can be reduced to 50–85%. The composting methods may use either manual or mechanical means and are accordingly termed as a manual or mechanical process.

7. Pyrolysis- Pyrolysis is an irreversible chemical change brought about by the action of heat in an atmosphere devoid of oxygen. The process is carried out at temperature between 500 - 1000 °C to produce three component streams, namely gas, liquid (tar) and solid (char). Various advantages claimed of the process are:

(a) Substantial volume reduction (50 - 90%),
(b) Production of solid, liquid and gaseous fuels,
(c) Storable / transportable fuel or chemical feed stock is obtained,
(d) Minimal environmental problem,
(e) Less capital investment compared to the incineration process, and
(f) Once started, the process is self - sustaining.

REGULATIONS ON SOLID WASTE MANAGEMENT IN INDIA: PAST AND PRESENT

The uncontrolled growth in urban areas has left many Indian cities deficient in infrastructural services such as water supply, sewerage and municipal solid waste management. Solid Waste Management is a part of public health and sanitation, and according to the Indian Constitution, falls within the purview of the State list.

Since the activity is non-exclusive, non-rivaled and essential, the responsibility for providing the service lies within the public domain and is entrusted to the Urban Local Bodies. The Urban Local Body undertakes the task of solid waste service delivery, with its own staff, equipment and funds. It is estimated that the total solid waste generated by 300 million people living in urban India is 38 million tonnes per year. The collection and disposal of municipal solid waste is one of the pressing problems of city life, which has assumed great importance in the recent past. With the growing urbanization as a result of planned economic growth and industrialization, problems are becoming acute and calls for immediate and concerted action. The proper disposal of urban waste is not only absolutely necessary for the preservation and improvement of public health but it has an immense potential for resource recovery.

Since the experience in the towns all over India has not been encouraging and since the states were not observed to take any specific initiative in this regard various committees were appointed by the Central Government and as a result of these committees various projects were initiated.

This section describes the actions taken at different times and then indicates the lessons that can be drawn from the experience so gained.

In the 1950s, the **Ministry of Food and Agriculture**, offered soft loans for promoting composting of urban solid wastes.

The first effort to obtain an authentic idea about the existing solid waste management practices, quantities and characteristics of the Indian Municipal Solid Waste was made by **National Environmental Engineering Research Institute (NEERI) in 1971.**

The Committee on Urban Waste was constituted by the Ministry of Health and Family Planning on 6-5-1972 under the Chairmanship of Mr. B. Sivaraman, Vice-Chairman, National Commission on Agriculture.

Subcommittees were appointed for different aspects such as collection & transportation equipment, garages and mechanical composting plants. A subcommittee also visited a few South-East Asian countries namely Singapore, Thailand, Phillipines, Hongkong and Japan to get acquainted with the SWM practises and policies there.

As a result of the Report submitted by the Sivaraman Committee in Dec. 1975, a central scheme on Solid Waste disposal was initiated in the year 1975 during the Fifth Five Year Plan period. The scheme involved provision of grants for efficient collection and transportation and for construction of compost plants.

As this scheme was mainly aimed at a few large urban centers the situation in a large majority of the towns continued to deteriorate.

The Government of India appointed a committee in October 1994 with Prof. J.S. Bajaj, Member Planning Commission as its Chairman. **The Bajaj committee** deliberated during a number of meetings and submitted its **report on Urban Solid Waste Management in India** in September 1995 wherein a long term strategy that needs to be adopted was delineated. Detailed recommendations on all aspects of solid waste management were also made.

The existing situation was critically analyzed, lacunae identified and prioritized, by the **World Bank in collaboration with Ministry of Environment and Forests (MoEF) and Ministry of Urban Development (MoUD) jointly sponsored a study at NEERI**, with the report released in Feb. 1996.

Yet it did not stand at par with the expectations. Therefore, the **Burman Committee** appointed by the Supreme Court for Class-I cities reviewed all aspects of the problem and made several recommendations in its interim report of June 1998 and the final report submitted in March 1999. The committee authorized the Government to exercise the powers under the Environment (Protection) Act of 1986 and also recommended the constitution of a technology mission for improving SWM practices in the country within five years.

Following the recommendations of the

Committee the Ministry Urban Development, in August 1999, constituted a **Technology Advisory Group on Solid Waste Management** to collect information on various proven technologies for processing & disposal of wastes, identifying appropriate and cost effective technologies suitable to Indian conditions, and to suggest any pilot projects where felt necessary and to provide technical guidance to the State Governments and Urban Local Bodies for adopting and suggesting feasible technologies. This Group submitted its report in 2002. The report contains information relating to waste processing or treatment technology, waste handling vehicles and equipment's, financial resources, sectoral lending by financial institutions and the potential for private sector participation in this activity. The report highlights support that the Central and State Governments could render to ULBs in capacity building, research and development, and the role that non-governmental and community based organizations and public as a whole could meaningfully play in the management of urban solid waste. The report principally covers the details of various technologies available within and outside the country for the treatment of municipal solid waste and deriving compost, RDF, power, etc. from the waste, their merits, de-merits limitations, etc.

The roles and objectives of the Technology Advisory Group can be summarized as follows:

a) To provide technical assistance to ULBs for adopting suggested technologies wherever feasible.

b) To channelize and make optimum use of funds earmarked for SWM projects in the various Ministries, such as MoEF, MoUD, Ministry of Non-Conventional Energy Resources, Ministry of Agriculture, the Planning Commision, financial institutions and other international donor agencies.

c) To develop IEC (Information, Education and Communication) material for awareness programs and disseminate the same through mass and print media with the cooperation of State Governments and ULBs.

d) To arrange, promote and coordinate inter-city, inter-state meets for SWM personnel to exchange information on various aspects of SWM.

e) To provide a forum for public interaction in the field of SWM and strengthen and support participation by NGOs and citizens.

f) To keep the MoUD informed about the various action points required to be undertaken by the Technology Advisory Group, MoUD, other Ministries and institutions.

Court Proceedings related to Municipal Solid Waste

Pursuant to Hon'ble Supreme Court's direction (S.L. Wadhera Vs Union of India), Central Pollution Control Board has been carrying out inspection bi monthly since 1996. The case was referred to Delhi High Court in 1998 and CPCB has since then carrying out inspection once in four months and regularly submitting reports to the Hon'ble Court. Eleven reports have been submitted to Hon'ble Supreme Court twenty nine reports have been submitted to Hon'ble High Court since 1998. Reports highlighted status of collection, storage, transportation, processing and disposal of Municipal Solid Waste in Delhi.

Based on the recommendations of the various committees, the Ministry of Environment & Forests promulgated the **Municipal Solid Waste (Management & Handling) Rules, 2000** under the Environment (Protection) Act of 1986. The Rules provide detailed guidelines on various aspects of Solid Waste Management and identifies the Central Pollution Control Board as the nodal agency to monitor its implementation directly in the Union territories and in the case of the States through State Pollution Control Boards.

It outlines the responsibility of the municipal authority as:

1. Every municipal authority shall, within the territorial area of the municipality, be responsible for the implementation of the provisions of these rules, and for any infrastructure development for collection, storage, segregation, transportation, processing and disposal of municipal solid wastes.
2. The municipal authority or an operator of a facility shall make an application in Form-

I, for grant of authorization for setting up waste processing and disposal facility including landfills from the State Board or the Committee in order to comply with the implementation program laid down in **Schedule I.**

3. The municipal authority shall comply with these rules as per the implementation schedule laid down in **Schedule I.**
4. Any municipal solid waste generated in a city or a town, shall be managed and handled in accordance with the compliance criteria and the procedure laid down in **Schedule-II.**
5. The waste processing and disposal facilities to be set up by the municipal authority on their own or through an operator of a facility shall meet the specifications and standards as specified in **Schedules III** and **IV.**

SCHEDULES OF MSW RULES, 2000

***SCHEDULE 1*: Relates to implementation Schedule**

SCHEDULE 2:Specifications relating to collection, segregation, storage, transportation, processing and disposal of municipal solid waste (MSW). :

Sl.no	Parameters	Compliance criteria
1.	**Collection of municipal solid wastes**	1. Littering of municipal solid waste shall be prohibited in cities, towns and in urban areas notified by the State Governments. To prohibit littering and facilitate compliance, the following steps shall be taken by the municipal authority, namely :- i. Organizing house-to-house collection of municipal solid wastes through any of the methods, like community bin collection (central bin), house-to-house collection, collection on regular pre-informed timings and scheduling by using bell ringing of musical vehicle (without exceeding permissible noise levels); ii. Devising collection of waste from slums and squatter areas or educator localities including hotels, restaurants, office complexes and commercial areas; iii. Wastes from slaughter houses, meat and fish markets, fruits and vegetable markets, which are biodegradable in nature, shall be managed to make use of such wastes; iv. Bio-medical wastes and industrial wastes shall not be mixed with municipal solid wastes and such wastes shall follow the rules separately specified for the purpose; v. Collected waste from residential and other areas shall be transferred to community bin by hand-driven container carts or other small vehicles;vi. Horticulture and construction or demolition wastes or debris shall be separately collected and disposed off following proper norms. Similarly, wastes generated at dairies shall be regulated in accordance with the State laws; vii. Waste (garbage, dry leaves) shall not be burnt; viii. Stray animals shall not be allowed to move around waste storage facilities or at any other place in the city or town and shall be managed in accordance with the State laws. 2. The municipal authority shall notify waste collection schedule and the likely method to be adopted for public benefit in a city or town. 3. It shall be the responsibility of generator of wastes to avoid littering and ensure delivery of wastes in accordance with the collection and segregation system to be notified by the municipal authority as per para 1(2) of this Schedule.
2.	**Segregation of municipal solid wastes**	In order to encourage the citizens, municipal authority shall organize awareness programs for segregation of wastes and shall promote recycling or reuse of segregated materials.The municipal authority shall undertake phased program to ensure community participation in waste segregation. For this purpose, regular meetings at quarterly intervals shall be arranged by the municipal authorities with representatives of local resident welfare associations and non-governmental organizations.
3.	**Storage of municipal solid wastes**	Municipal authorities shall establish and maintain storage facilities in such a manner as they do not create unhygienic and insanitary conditions around it. Following criteria shall be taken into account while establishing and maintaining storage facilities, namely : i. Storage facilities shall be created and established by taking into account quantities of waste generation in a given area and the population densities. A storage facility shall be so placed that it is accessible to users; ii. Storage facilities to be set up by municipal authorities or any other agency shall be so designed that wastes stored are not exposed to open atmosphere and shall be aesthetically acceptable and user-friendly; iii. Storage facilities or 'bins' shall have 'easy to operate' design for handling, transfer and transportation of waste. Bins for storage of bio-degradable wastes shall be painted green, those for storage of recyclable wastes shall be printed white and those for storage of other wastes shall be printed black; iv. Manual handling of waste shall be prohibited. If unavoidable due to constraints, manual handling shall be carried out under proper precaution with due care for safety of workers.
4.	**Transportation of municipal solid wastes**	Vehicles used for transportation of wastes shall be covered. Waste should not be visible to public, nor exposed to open environment preventing their scattering. The following criteria shall be met, namely: i. The storage facilities set up by municipal authorities shall be daily attended for clearing of wastes. The bins or containers wherever placed shall be cleaned before they start overflowing; ii. Transportation vehicles shall be so designed that multiple handling of wastes, prior to final disposal, is avoided.
5.	**Processing of municipal solid wastes**	Municipal authorities shall adopt suitable technology or combination of such technologies to make use of wastes so as to minimize burden on landfill. (i) The biodegradable wastes shall be processed by composting, vermicomposting, anaerobic digestion or any other appropriate biological processing for stabilization of wastes. (ii) Mixed waste containing recoverable resources shall follow the route of recycling. Incineration with or without energy recovery including pelletisation can also be used for processing wastes in specific cases.
6.	**Disposal of municipal solid wastes**	Land filling shall be restricted to non-biodegradable, inert waste and other waste that are not suitable either for recycling or for biological processing. It shall also be carried out for residues of waste processing facilities as well as pre-processing rejects from waste processing facilities.

SCHEDULE 3: Specifications for land filling indicating; site selection, facilities at the site, specifications for and filling, Pollution prevention, water quality monitoring, ambient air quality monitoring, Plantation at landfill site, closure of landfill site and post care.

Site Selection

1. Responsibility of the Development Authorities or the concerned Municipal Authorities to identify landfill sites.
2. Selection of landfill sites shall be based on examination of environmental issues.
3. Biomedical wastes shall be disposed off in accordance with the Bio-medical Wastes (Management and Handling) Rules, 1998 and hazardous wastes shall be managed in accordance with the Hazardous Wastes (Management and Handling) Rules, 1989, as amended from time to time.
4. The landfill site shall be away from habitation

clusters, forest areas, water bodies monuments, National Parks, Wetlands and places of important cultural, historical or religious interest as well as from airport and airbase.

Facilities at the Site

11. Landfill site shall be fenced or hedged and provided with proper gate to monitor incoming vehicles or other modes of transportation and prevent entry of unauthorized persons and stray animals.
12. The landfill site shall have wastes inspection facility to monitor wastes brought in for landfill, office facility for record keeping and shelter for keeping equipment and machinery including pollution monitoring equipments.
13. Utilities such as drinking water (preferably bathing facilities for workers) and lighting arrangements for easy landfill operations when carried out in night hours shall be provided.
14. Safety provisions including health inspections of workers at landfill site shall be periodically made.

Specifications for land filling

15. Wastes subjected to land filling shall be compacted in thin layers using landfill compactors to achieve high density of the wastes.
16. Prior to the commencement of monsoon season, an intermediate cover of 40-65 cm thickness of soil shall be placed on the landfill with proper compaction and grading to prevent infiltration during monsoon. Proper drainage berms shall be constructed to divert run-off away from the active cell of the landfill.

Pollution prevention

22. In order to prevent pollution problems from landfill operations, the following provisions shall be made, namely:-
    a. Diversion of storm water drains to minimize leachate generation and prevent pollution of surface water and also for avoiding flooding and creation of marshy conditions;
    b. Construction of a non-permeable lining system at the base and walls of waste disposal area. For landfill receiving residues of waste processing facilities or mixed waste or waste having contamination of hazardous materials (such as aerosols, bleaches, polishes, batteries, waste oils, paint products and pesticides) minimum liner specifications shall be a composite barrier having 1.5 mm high density polyethylene (HDPE) geomembrane, or equivalent, overlying 90 cm of soil (clay or amended soil) having permeability coefficient not greater than 1×10^{-7} cm/sec. The highest level of water table shall be at least two meter below the base of clay or amended soil barrier layer;
    c. Provisions for management of leachates collection and treatment shall be made. The treated leachates shall meet the standards specified in Schedule- IV;
    d. Prevention of run-off from landfill area entering any stream, river, lake or pond.

Water Quality Monitoring

23. Usage of groundwater in and around landfill sites for any purpose (including drinking and irrigation) is to be considered after ensuring its quality.

Ambient Air Quality Monitoring

24. Installation of landfill gas control system including gas collection system shall be made at landfill site to minimize odour generation, prevent off-site migration of gases and to protect vegetation planted on the rehabilitated landfill surface.
25. The concentration of methane gas generated at landfill site shall not exceed 25 per cent of the lower explosive limit (LEL).

Plantation at Landfill Site

26. A vegetative cover shall be provided over the completed site in accordance with the and following specifications, namely:
    (a) Selection of locally adopted non-edible perennial plants that are resistant to drought and extreme temperatures shall be allowed to grow;
    (b) The plants grown be such that their roots do not penetrate more than 30 cms. This condition shall apply till the landfill is stabilised;
    (c) Selected plants shall have ability to thrive on low-nutrient soil with minimum nutrient addition;
    (d) Plantation to be made in sufficient density to minimize soil erosion.

Closure of Landfill Site and Post-care

27. The post-closure care of landfill site shall be conducted for at least fifteen years and long term monitoring or care plan shall consist of the following, namely :-
    (a) Maintaining the integrity and effectiveness of final cover, making repairs and preventing run-on and run-off from eroding or otherwise damaging the final cover;
    (b) Monitoring leachate collection system in accordance with the requirement;
    (c) Monitoring of ground water in accordance with requirements and maintaining ground water quality;
    (d) Maintaining and operating the landfill gas collection system to meet the standards.
28. Use of closed landfill sites after fifteen years of post-closure monitoring can be considered for human settlement or otherwise only after ensuring that gaseous and leachate analysis complies with the specified standards.
29. **Special provisions for hilly areas**- Cities and towns located on hills shall have location-specific methods evolved for final disposal of solid wastes by the municipal authority with the approval of the concerned State Board or the Committee. The municipal authority shall set up processing facilities for utilization of biodegradable organic wastes. The inert and non-biodegradable waste shall be used for building roads or filling-up of appropriate areas on hills. Because of constraints in finding adequate land in hilly areas, wastes not suitable for road-laying or filling up shall be disposed of in specially designed landfills.

SCHEDULE 4: Indicate waste processing options including; standards for composting, treated leachates and incinerations.

Standards for Composting, Treated Leachates and Incineration

1. The waste processing or disposal facilities shall include composting, incineration, pelletisation, energy recovery or any other facility based on state-of-the-art technology duly approved by the Central Pollution Control Board.
2. In case of engagement of private agency by the municipal authority, a specific agreement between the municipal authority and the private agency shall be made particularly, for supply of solid waste and other relevant terms and conditions.
3. The incoming wastes at site shall be maintained prior to further processing. To the extent possible, the waste storage area should be covered. If, such storage is done in an open area, it shall be provided with impermeable base with facility for collection of leachate and surface water run-off into lined drains leading to a leachate treatment and disposal facility;
4. Necessary precautions shall be taken to minimize nuisance of odour, flies, rodents, bird menace and fire hazard;
5. In case of breakdown or maintenance of plant, waste intake shall be stopped and arrangements be worked out for diversion of wastes to the landfill site;
6. Ambient air quality monitoring shall be regularly carried out particularly for checking odour nuisance at down-wind direction on the boundary of processing plant.

While discharging treated leachates into inland surface waters, quantity of leachates being discharged and the quantity of dilution water available in the receiving water body shall be given due consideration.

Note: Suitably designed pollution control devices shall be installed or retrofitted with the incinerator to achieve the above emission limits, if necessary. Wastes to be incinerated shall not be chemically treated with any chlorinated disinfectants. Chlorinated plastics shall not be incinerated. Toxic metals in incineration ash shall be limited within the regulatory quantities as specified in the Hazardous Wastes (Management and Handling) Rules, 1989 as amended from time to time. Only low sulphur fuels or Diesel shall be used as fuel in the incinerator.

One of the thrust areas for the Abatement of Pollution (2007-08) identified by the Ministry of Environment and Forests under the National Environment Policy (NEP) and also as per the issues raised by the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) has been updating status of management of municipal wastes (sewage and solid); review of the existing and evolving pollution prevention technology and clean technologies for reduction in Green House Gases for management of solid and hazardous waste in integrated iron and steel plants, paint, aluminium, textile and dying industries, follow up Supreme Court's directives on Waste Management, especially relating to identification of dumpsites, developing guidelines and preparing remedial plans for identified sites; coordination with SPCBs and concerned State Governments on implementation of rules relating to plastics and municipal solid wastes among others.

OVERALL ANALYSIS OF RULES AND POLICIES ON MSWM IN INDIA

While the Rules are comprehensive in terms of specifying responsibilities and procedures, in the context of this report the following discussion is restricted to only treatment and disposal aspects.

As per these Rules, every municipality is responsible for providing integrated services and infrastructure facilities for solid waste management within its jurisdiction. Its responsibilities are defined all the way from preparing the community for segregated collection to inoffensive storage, transportation, appropriate processing and safe disposal from environmental and health point of views.

For the collection stage, the Rules recommend door to door collection of segregated waste, as well as separate collection from slaughter houses, meat and fish markets, fruit and vegetable markets etc. with the objective of 'managing to make use of' highly biodegradable wastes. While horticulture waste is supposed to be collected separatoly and disposed off by following 'proper norms', the Rules do not clarify what these norms could be. Similarly no norms are specified for dairy waste management; instead reference is given to state laws. However, the Rules clearly prohibit open burning of any kind of waste during the collection stage.

With regard to treatment, the Rules recommend adoption of a suitable technology or a combination there of with the objectives of making use of wastes and to minimize burden on the landfill. While this is laudable and desirable from the point of view of the '3R' paradigm, it is at this point that the Rules make a risky proposition and eventually create a potential situation of crossing the paradigm of 'safeguarding public health'. For the biodegradable fraction of waste the Rules recommend treatment by composting, vermicomposting, anaerobic digestion or any other appropriate biological process so as to stabilize it. In other cases, options of incineration with or without energy recovery and pellatisation are also suggested. In case of any other state-of-the-art technologies, the Rules recommend to get the approval of the Central Pollution Control Board before developing any project.

For the last element in the supposedly integrated chain, i.e., disposal, the Rules recommend land filling of only that type of waste which is neither recyclable nor biologically processable. The Rules do not recommend land filling of mixed waste as long as it is found to be suitable for any processing. From that point of view, setting up of a bioreactor based landfill gas recovery system is considered not permissible and setting up a processing plant is considered to be a precondition for commissioning a sanitary landfill site.

With regard to ambient air quality management at a landfill site, the Rules require installation of a landfill gas collection system from the point of view of odour control and safety of nearby properties. The Rules further go on to suggest gainful utilization of the recovered gas through thermal application or power generation. It is intriguing that the Rules suggest this as an option while at the first place prohibiting disposal of degradable in a landfill which is the fundamental cause of gas production. When the system is not allowed for maximization of gas

generation, it is obvious that return on investment on gas recovery and accompanying power generation system will be unviable.

Standards for pollution prevention from composting process and leachate discharge are incorporated. For a composting plant the Rules recommend to maintain rotting waste in an enclosed area during pre-processing stage and take necessary precautions to minimize nuisance of odour, flies, rodents, bird menace and fire hazards. Secondly, the process rejects are required to be disposed off in a landfill without impairing the aesthetics of the processing area. Lastly, excess leachate after recycling is required to be treated and comply with discharge standards. However, given the current planning and design practices of the technology providers for windrow composting typically found in the country, these aspects are invariably not taken into account. As a result their environmental and social acceptance and functional sustainability is severely undermined.

MANAGEMENT OF MUNICIPAL SOLID WASTES IN INDIA

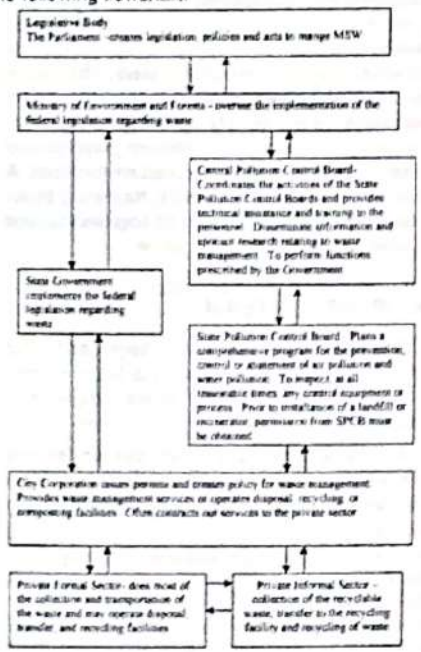
The ULBs are responsible for the provision of solid waste collection and disposal services. They become the legal owner of waste once it is collected or put out for collection. Responsibility for waste manage-ment is usually specified in bylaws and regulations and may be derived, more generally, from policy goals regarding environmental health and protection. Besides their legal obligations, local governments are normally motivated by political interests.

Effective solid waste management depends upon the cooperation of the population, and local governments should take measures to enhance public awareness of the importance of MSWM, generate a constituency for environmental protection and promote active participation of users and community groups in local waste management. Effective decentralization makes solid waste management more flexible, efficient and responsive to local requirements and potentials. At the same time, the devolution of decision-making, financial management, procurement and implementation functions reduces the load on the central authorities, allowing them to focus on their main responsibilities in the areas of legislation, definition of standards, environmental monitoring and support to municipalities.

The way informal recycling activities are organized has important consequences for income generation, working conditions and social status. As a general rule, the less organized the informal recycling sector is, the less the people involved are capable of adding value to the secondary raw materials they collect, and the more vulnerable they are to exploitation from intermediate dealers.

The process of pyrolysis, though the most promising method of USW treatment both from the point of view of economic viability and social acceptability, yet not much headway have been made as regards setting up of full scale commercial plants. A scheme for setting up of a methanol plant based on the pyrolysis of Bombay city garbage is under active consideration. Capital investment for the project when finalized in 1994 was around Rs. 232 crore. Gross profit was estimated to be Rs. 63.5 crore amounting to 27.4% return on capital.

The broad framework of the entire management of Municipal Solid Wastes in India is represented by the following flowchart:



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CASE STUDY: DELHI

THE WASTE MANAGEMENT SYSTEM

There are three agencies that are responsible for solid waste management: the Municipal Corporation of Delhi (MCD), the New Delhi Municipal Corporation (NDMC), and the Delhi Cantonment Board (DCB). Of these, the Conservancy and Sanitation Engineering Department of MCD bears the maximum burden, as it is responsible for 1399 sq.km of the total territory of 1484.5 km2. There is no overlap between the service areas of various authorities.

Waste from the generators such as households, institutions etc. is brought either to the Street Corner Bins (SCB's) or the Waste storage Depots (WSDs) according to their convenience. The responsibility of conveying the waste from the point of generation to the SCBs lies in the hands of the generators. Usually the street sweepers or the rag pickers are employed by the people for this purpose. The waste is segregated at the disposal sites by the dahlia workers and the rest is taken away by the vehicles. An appreciable amount of wet waste is taken to the centralized compost plant at Bhalaswa. The rest is taken to the Bhalaswa landfill. The waste segregated is then taken to the central workshop at Subhash Nagar where the waste is further segregated into different streams and is taken in bulk for recycling. A centralized segregation facility has also been proposed and will be developed as soon as the land is provided by the MCD for the same.

THE OPERATION TEAM

The whole task of collection, segregation and transportation is given shape by a team of field supervisors, office/tech. staff, drivers, helpers and dhalao workers.

All the wards have been put under the governance of a team leader. Under every team leader there is a set of field supervisors who are responsible for the following:

- familiarizing with the assigned area(ward)
- Keeping a track of daily waste collection.

Optimizing the number of dhalao workers and maximizing their productivity by assigning them adequate responsibilities.

educator

- Visiting the dhalaos within his scope of vigilance at least twice a day.
- Maintaining vehicle time and route plan.
- Ensuring that the dhalao workers are well accoutered in all respect and dhalaos are thoroughly disinfected.
- Ensuring that their respective staff (helpers, drivers, dhalao workers) are punctual and are following adequate safety and hygiene norms.
- Identification of critical points under his area, where garbage is being dumped or there is a lack of a dhalao and placement of adequate number of bins in those critical areas.
- Keeping liaisons with local residents, residential welfare associations (RWA's), councilors, MCD officials and to work in close co-ordination with them.

Dhalao workers come next to the field supervisors in the organization hierarchy. Number of dhalao workers recruited at a particular dhalao depends upon the size of the dhalao and the load received by it. Optimization of dhalao workers at dhalaos in an area is done by the field supervisor. However, on an average 3 dhalao workers look after the maintenance of 1 dhalao. They are responsible for receiving the waste from the neighborhood directly in the dhalaos and from the bins that are placed in the area surrounding the dhalao.

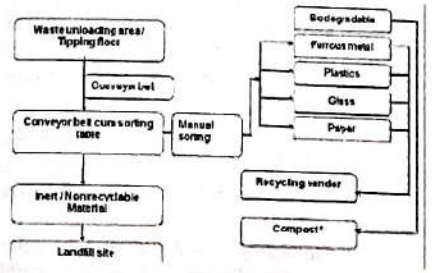
THE COLLECTION AND TRANSPORTATION SYSTEM

The collection system has undergone a drastic change since the inception of the private sector in solid waste management. Prior to the privatization, waste from the waste storage depots was collected in open trucks. The problems such as waste spillage and odour were common. Moreover the staff since the privatization. Compactor loaders are being used for the transportation of the waste. Containerized mechanical loading and unloading is done which avoids multiple handling, reduces spillage, ensures hygienic environment around the WSD's and also reduces environmental and health risks. Moreover separate vehicles are used for bio-degradable (green) and non-biodegradable waste (blue). A major chunk

of the biodegradable portion is sent to a centralized composting facility. The whole transportation activity is managed by a fleet of vehicles including, compactors, mini Refuse Collectors (RCs) and high capacity dumper trucks operated by a number of drivers and helpers. They are directly managed by a strong team of supervisors (including team leaders). The movement of the vehicles takes place according to the proper schedule and is tracked by a state of the art command and control system. Command and control communication devices comprise of 34 wireless sets on vehicles, 32 wireless handsets with operational and technical staff and 50 cellular phones. Moreover, the on road movement of the vehicles is tracked by a special Global Positioning System (GPS) enabled system. 100 percent waste collection and disposal is ensured within 24 hours and is achieved in 3 shifts of 6 hours each. Breakup vehicles are also maintained to keep the stability of the system intact in the case of vehicular breakdown and also for handling complaints.

Proposed Semi Mechanical Waste Sorting Facility

A semi mechanical central waste segregation facility has been proposed by the Metro Waste Handling Pvt. Limited which is waiting the allocation of the land by the MCD. The waste from different wards will be brought in to this facility and segregation will be performed. The flow chart below shows the proposed mechanism:



MSW COMPOSITION AND DISPOSAL

The organic content of the waste was found to vary considerably at various sites owing to variations in origin of waste, ranging from as low as 23% to as high as 58% in the areas in vicinity to restaurants. The average share of this biodegradable component was found to be 38% against 35% for the national average of class-I cities. Compared to this, the average organic waste content of USA is 11.2% (EPA, 2004). The reasons for the high decline in the biodegradable in USA may be assigned to the increased use of methods (such as dish washers) that put the waste into the wastewater system rather than in MSW, and increased use of preprocessed and packaged food both in homes and in commercial and institutional food services. These differences in the waste compositions highlight the fact that universal MSW management strategies are not easy to evolve, since societies can have wide variations in the type of solid wastes they generate.

The total quantity of MSW generated in Delhi is around 10,000 tonnes /day. Discussions with the MCD authorities indicated that 15–20% of the generated waste does not reach the disposal sites since part of it gets recycled even before reaching the dumps, part is dumped locally in rural areas, and part of it remains uncollected. The solid waste collected is disposed off by uncontrolled dumping at several sites such as Bhalswa, Ghazipur, and Okhla, and the areas covered by the sites normally range from 40 to 75 acres. The average composition of the MSW was determined by MCD and is exhibited inthe following table. It is evidentthat the biodegradables and inert materials constitute the bulk of the waste, rendering thetask of recycling more laborious and time consuming.

Table : 1

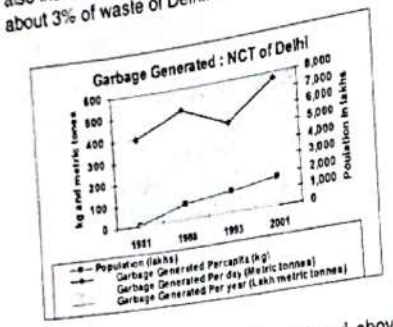
Physical characteristics of municipal solid waste in Delhi, India

Parameters	Average share (%)
Biodegradable	38
Plastic	6
Metal	0.25
Glass and crockery	1
Bio-resistant (leather, rubber, bones)	14
Inert (stone, brick, ashes)	34.75
Paper	6

EVALUATION OF MSWM IN DELHI

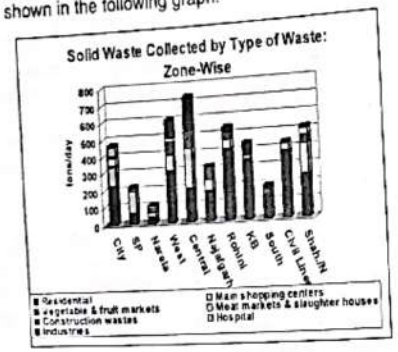
According to the 2001 Census, Delhi has the highest percentage of urban population and there has been a 46.31% growth of its population between 1991 and 2001, as compared to 21.34% for all India. With the present pace of growth, the population by 2021 shall be around 22 million and the garbage generation

in Delhi is likely to increase to 18,000 tonnes per day by that time. The preparation to manage municipal solid waste in Delhi is inadequate – the region lacks sanitary land fill sites for disposal of its waste. Day by day getting additional sites will become more and more difficult and therefore, this issue needs immediate action. Facilities to process wastes are also insufficient - the facility at Okhla composts only about 3% of waste of Delhi.



Households with Rs.8000/month and above, generate about 900 gms of waste per capita every day, whereas Rs.2000/month generates just 200 gm of waste per day. The percentage of biodegradable is the highest (38.6%) in the municipal solid waste of Delhi (nationalaverage: 35%).

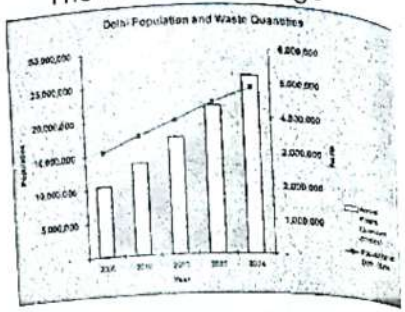
The *Central Zone* of MCD is the highest waste producer. The waste collected is 732 tons/day, as shown in the following graph:



The house to house collection system does not have 100% coverage. Burning of solid waste at source is widely prevalent and burning of PVC plastics, medical wastes, chlorinated paper etc produces Dioxins which are very harmful to health. The funds available with the ULBs are not adequate and almost the entire sum is spent on salary of the staff. There is hardly any money left for maintenance of the SWM equipments available with the ULBs. Thus the ULBs are not in a position to provide the most basic service of providing the SWM. The failure in managing the solid waste causes other problems as well. Due to inadequate solid waste collection, most of the drains are blocked. The capacities of drains are reduced significantly. Stagnant drains are places for mosquito breeding, unhygienic and insanitary conditions. Stagnant drains also cause pollution in water supply due to cross connections.

The following graph shows the pitiable state of Delhi, where annual waste generated has overtaken the rate of growth of populations to around two times.

The Waste Challenge



Realizing the importance of Municipal Solid Waste Management, the Regional Plan 2021, examined various issues related to solid waste management and recommended various policies in this regard including 100% collection and management of the Municipal Solid Waste Management in the Delhi-NCR.

The issues which came to the notice of the study group constituted for the purpose are:

- lack of knowledge & technical staff in the local bodies,
- non-availability of suitable land for solid waste disposal/treatment in environmental friendly manner,
- lack of public awareness,
- non-availability of funds, piecemeal approach for handling of solid waste,

- dependence on departmental staff causing labor related problems,
- poor collection system,
- mix of domestic & hazardous waste.

The Regional Plan 2021 recommended the preparation of detailed Solid Waste Management Plan for each town in NCR, adoption of CPHEEO norms, identification of land for solid waste disposal & treatment in the Master Plans, resource recovery, promoting waste minimization&recycling, creation of public awareness, resource mobilization, institutional improvement & the capacity building, etc.

There is a need for the DDA, the ULBs and the Developing Authorities in the NCR, to reserve adequate land for landfill sites and also to initiate a dialogue for setting up common landfill sites in the regional context by providing suitable compensation for ULBs/ States which allow wastes from other ULBs/ States to be disposed in their landfill sites and by ensuring scientific disposal of waste using suitable technologies.

In Dec, 2007, **Delhi Mayor Ms. Arti Mehra** today unveiled MCDs Comprehensive Master Plan for management of solid waste in the National Capital to work out a holistic approach to make it a worthy, liveable, clean and eco-friendly world-class city. The Mayor said an assessment of available and required manpower and machinery has been made in the plan which also assesses the administrative system of Environment Management Services.

Among the salient features of the plan are ensuring attendances of safai karamcharis through biometric system to avoid absenteeism. segregation at source, door to door collection, decentralized local level composting at individual/community level to avoid transportation, introduction of sweeping of main roads by mechanical sweeper, processing of waste through cost-effective/innovative technologies to suit the local waste quality, processing of construction and demolition waste, proper management of horticulture waste, procurement and up gradation of various machines, enforcement of anti-littering through ex-servicemen and disposal of solid waste and its concern with environment.

Mayor informed that the Master Plan makes appreciable improvements in the existing system in all respects of solid waste management. In the existing system, households have one bin today which is transported through waste collector in one bin rickshaw to 'dahalao' having single compartment. The waste is then transported to landfill sites. In the proposed system, the households will have two bins, one for bio-degradable and one for non-biodegradable wastes. The system will be implemented through RWAs who will implement and monitor the scheme. From the household level, it will be taken in two bin rickshaws to integrated treatment and disposal facility. The system will abolish dahalaos In phases. The manual street sweeping will be replaced by mechanized main road sweeping.

As per the recentpipeline projects being undertaken by the MCD include:

1) 2000 tonnes of solid waste will be converted into 16 MW of power;
2) 1200 tonnes of solid waste at corporation's Ghazipur landfill site will be converted into 12 MW of power.

ASSESSMENT OF THE STATUS OF IMPLEMENTATION OF MSW RULES

Assessment of status of solid waste management is based on annual reports being furnished by local bodies to State Pollution Control Boards and forwarding consolidated Annual Report (2008-09) to CPCB.

Implementation of Schedule-II

Efforts are being made by many local bodies for creating awareness in the citizens for ensuing proper management of waste including systematization of procedures relating to waste collection, segregation, storage and transportation. However, such efforts are either restricted to a few localities/ wards within the town or a few ULBs taken up such efforts at entire town level.

It has been observed that collection of waste from door-step is the most critical issue in the entire management of MSW.

Implementation of Schedule-III (Landfilling)

Disposal of waste is still continued through open dumping.

Implementation of Schedule-IV (Waste Processing)

There has been a positive movement on setting up of waste processing facilities as compared to the efforts made in the previous years. In many States, several towns have responded that there is partial composting/ vermi-composting facilities.

It has been observed that 'composting' and 'vermi-composting' is preferred as easy technological option by local bodies and other options like thermal processing (incineration, pyrolysis etc.) are not attempted due to non-availability of operating experiences.

In India, incinerators for MSW are not used owing to the fact that MSW contains a high amount of sand and silt from open drainage or improper drainage, unmetalled roads, street sweepings and ash from coal burning.

Manual composting is carried out in smaller urban centers and mechanical composting plants have been set up in big Indian cities.

The process of pyrolysis, though the most promising method of USW treatment both from the point of view of economic viability and social acceptability, yet not much headway have been made as regards setting up of full scale commercial plants. A scheme for setting up of a methanol plant based on the pyrolysis of Bombay city garbage is under active consideration. Capital investment for the project when finalized in 1984 was around Rs. 232 crore. Gross profit was estimated to be Rs. 63.5 crore amounting to 27.4% return on capital.

There has been no major effort to create community awareness either about the likely perils due to poor waste management or the simple steps that every citizen can take which will help in reducing waste generation and promote effective management of solid waste generated. The degree of community sensitization and public awareness is low. There is no system of segregation of organic, inorganic and recyclable wastes at household level. Door to door collection is not practiced in most of the cities.

It is estimated that about 1,00,000 MT of Municipal Solid Waste is generated daily in the country. Per capita waste generation in major cities ranges from 0.20 Kg to 0.6 Kg. Generally the collection efficiency ranges between 70 to 90% in major metro cities whereas in several smaller cities the collection efficiency is below 50%. It is also estimated that the Urban Local Bodies spend about Rs.500 to Rs.1500 per tonne on solid waste for collection, transportation, treatment and disposal. About 60-70% of this amount is spent on street sweeping of waste collection, 20 to 30% on transportation and less than 5% on final disposal of waste, which shows that hardly any attention is given to scientific and safe disposal of waste. Landfill sites have not yet been identified by many municipalities and in several municipalities, the landfill sites have been exhausted and the respective local bodies do not have resources to acquire new land. Due to lack of disposal sites, even the collection efficiency gets affected.

CONSTRAINTS / DIFFICULTIES IN IMPLEMENTATION:

- Non availability of suitable land and handing over of the same to concerned local bodies.
- Lack of technical awareness among personnel's with respect to waste processing technologies, selection of proper waste processing technology with respect to waste quantum generation, development of landfill sites.
- Non availability of sufficient funds with local bodies.
- Lack of public awareness/participation.
- A negligent / reluctant personnel'sin ULB's.
- Inadequate manpower with the Board for implementation and compliance verification with MSW Rules.

POLICY RECOMMENDATIONS

In order to have a satisfactory, efficient, and a sustainable system of solid waste management, the following aspects need consideration:

1. Door to door collection of the waste may be adopted and the job may be assigned to the rag pickers. Aided by proper awareness building mechanism, good results may be obtained in terms of waste segregation and improvement in the state

of the rag pickers. The financial sustainability of the setup may be achieved by asking for a nominal fee from the generators or/and handing over the recyclable waste to the rag pickers.

2. Decentralized community based composting plants may be developed which will not only improve the quality of the compost but also save a considerable transportation cost.

3. More efforts are required to make dhalao workers habitual with the use of safety equipments.

4. Targeting waste reduction at source: Waste reduction at source can be accomplished in three ways:

(1) Fees and tax incentives to promote market-mechanisms to effect source reduction,

(2) Mandatory standards and regulations,

(3) Education and voluntary compliance with policies by business and consumers.

Market actions for waste reduction- By charging for the environmental and economic costs of production and disposal of waste upfront, market forces can be employed to improve the efficiency of waste management. By incorporating the cost of disposal also in the production cost, tendency to use less packaging or adoption of the recyclable/reusable packaging material would be promoted. At the consumer end also the tendency to reuse the material would be promoted.

Mandatory standards for waste reduction- Setting mandatory standards could make business responsible for the waste it generates. For instance, Germany has implemented a mandatory recycling program in which, theoretically, the seller of consumer goods must take back all the package waste that is produced. In India the regulatory agencies should take the lead in setting up rules prescribing targets for waste reduction in various manufacturing sectors.

Education and voluntary compliance - The alternative policy consists of a voluntary program of consumer education and business initiatives. One of the tools to achieve this could be adoption of EMS (Environmental Management System) which is necessarily a voluntary initiative. The industries adopting EMS have achieved economic benefits also while achieving better environmental performance.

5. Technological interventions- India has lagged behind in terms of adopting technologies for solid waste management. In particular, collection, treatment and disposal of waste require urgent consideration.

Collection of waste - The preferred option would be to revamp the existing collection service structure to provide community with waste bins, conveniently placed for the people to deposit domestic waste, and door to door collection of waste. This along with separation of waste, at source, into biodegradable and non-biodegradable components would not only reduce the cost of transportation for final disposal but also provide segregated organic waste stock for waste to energy activities.

Treatment and disposal - Proper segregation of waste would lead to betteroptions and opportunities for its scientific disposal.

Recyclables for example, could be straightaway transported to recycling units, which, in turn, would pay the corporations for it, thereby increasing their income. Finally, the inert material that will be required to be sent to landfill would be of much lower quantity compared to un-segregated waste, consequently increasing the life of our existing disposal facilities.

6. Efforts towards institutional and regulatory Reforms-

The financial constraints, institutional problems within the departments, fragile links with other concerned agencies, lack of suitable staff, and other allied problems prevent the urban local bodies from delivering and maintaining an efficient waste management system. In this context, it is also necessary to harness and integrate the role of three other emerging actors in this field— the private sector, NGO's, and rag pickers—into the overall institutional framework. The private sector is now becoming a key player in a number of industrialized nations. Private sector participation can help upgrade technical and managerial expertise, increase efficiency in operation and maintenance, and improve customer services, apart from bringing in the capital to support the government in its efforts at waste management. There is a strong case for comprehensively involving the private sector and encouraging it to invest in waste management in India. Private entrepreneurs in India are entering into activities like the collection and transportation of waste, and lately into treatment processes. Private

companies can, along with door-to-door collection, take on such tasks as secondary collection and transportation including vehicle-maintenance. Non-governmental organizations can play an important role in effectively projecting the community's problems and highlighting its basic requirements for urban services. They could help in organizing the rag pickers into waste-management associations/groups under the supervision of the urban local body and the relevant residents' associations or market associations. The strategies discussed above show the broad path that India needs to follow for efficient management of the solid waste, which is being increasingly generated in large quantities.

7. The informal policy of encouraging the public to separate MSW and market it directly to the informal network appears to be a better option. The involvement of people and private sector through NGOs could improve the efficiency of MSWM. Public awareness should be created among masses to inculcate the health hazards of the wastes.

8. The rule "POLLUTER PAYS" should be strictly applied. Littering of MSW should be prohibited in cities, towns and urban areas notified by the state government.

9. The collection bins must be appropriately designed with features like metallic containers with lids, and to have a large enough capacity to accommodate 20% more than the expected waste generation in the area, with a design for mechanical loading and un-loading, placement at appropriate locations, etc. Municipal authorities should maintain the storage facilities in such a manner that they do not create unhygienic and unsanitary conditions.

10. Proper segregation would lead to better options and opportunities for scientific disposal of waste. Recyclables could be straightway transported to recycling units that in turn would pay a certain amount to the corporations, thereby adding to their income. This would help in formalizing the existing informal set up of recycling units. It could lead to several advantages such as enabling technology up gradation, better quality products, saving of valuable raw material resources of country, reducing the need for landfill space, a less energy-intensive way to produce some products and employing labor in recycling industries.

11. Organizing the informal sector and promoting micro-enterprises are an effective way of extending affordable services.

12. Promotion and development of recycling is a means of upgrading living and working conditions of rag pickers and other marginalized groups.

13. Landfilling should be restricted to non-biodegradable, inert waste and other waste that are not suitable either for recycling or for biological processing. The current regulations (MSWM rules, 2000) are very stringent. Norms have been developed to ensure a proper MSWM system.

14. Reducing, reusing and recycling :

A) Saves money- There is less need to buy and consume, we get more out of what we buy and there is less cost in waste disposal. Manufacturers and businesses become cleaner and more efficient, use fewer raw materials and spend less on waste disposal and pollution clean-up. In addition less money's spent on solid waste collection, transportation and on the development and management of landfill sites.

B) Reduces environmental harm: When less virgin raw materials are required for manufacturing as a consequence of waste minimization, there is a resultant decrease in environmental degradation from resource extraction and processing. There is less consumption of fossil fuel leading to a reduction in greenhouse gases and associated pollutants.

C) Less solid waste also means less need for landfill space, and therefore a reduction in leachate and underground water contamination risks.

CONCLUSION

Most of the MSW in India is dumped on land in an uncontrolled manner. Such inadequate disposal practices lead to problems that will impair human and animal health and result in economic, environmental and biological losses. Although, norms have been developed to ensure a proper MSWM system. Unfortunately, clearly there is a large gap between policy and implementation.

Waste disposal needs immediate attention and strict monitoring. The setting up of engineered

sanitary landfill sites has to speed-up and this needs to be given top priority. The number of treatment process plants has to be increased to manage total quantity of waste generated. Many new techniques have been implemented for storage, collection, transfer and transportation. These techniques have brought about many positive changes and have increased the efficiency of the MSWM system. However, segregation of waste at each step is not being carried out. The segregation of waste during storage, collection and transportation has to be set in place for the efficient running of the process plants.

In Delhi, the recycling of MSW is currently carried out by an informal sector comprising cyclists at the lowest end and a succession of dealers. The process creates a market of recyclables, and value addition occurs for the various recyclables in the recycle stream. It is possible to attempt to formally organize the recyclable activity, so that the recyclists lead a secured and better life.

The informal policy of encouraging the public to separate MSW and market it directly to the informal network appears to be a better option. The involvement of people and private sector through NGOs could improve the efficiency of MSWM.

Proper training and education needs to be provided to the workers and public awareness programs should be conducted regularly. The occupational and health and safety measures taken by the authorities are not sufficient. Health and safety programs have to be conducted regularly to check the health condition of the workers in the various areas of MSWM and they should be educated on the health hazards related to their work and the importance of wearing the safety gear.

Finally, the study concluded that the lack of resources such as financing, infrastructure, suitable planning and data, and leadership, are the main barriers in MSWM. The increase of service demands combined with the lack of resources for municipalities are putting a huge strain on the existing MSWM systems.

It is reasonable to conclude that while, in general, re-source constraints do limit the extent and quality of the services delivered by these cities. There is scope for both generating more resources and for using them more effectively and efficiently through improved planning, supervision and management.

REFERENCES

Ahmed K., Mahmood G., Sharholy M., Trivedi, R.C. Municipal solid waste management in Indian cities – A review Annual Report- Central Pollution Control Board (2006-07)

Bhide, A.D.,Lessons from Solid Waste Management Projects in India – A Historic perspective

Christen J, Schübeler P., Wehrle K., Conceptual Framework forMunicipal Solid Waste Managementin Low-Income Countries, SKAT August 1996, Working Paper No. 9

Ministry of Environment and Forests, Notification, New Delhi, the 25th September, 2000

MSW Rules, Report of Technology Advisory Group on Solid Waste Management, Constituted by the Ministry of Urban Development, Government of India.

Municipal Solid Waste, Studies of Central Pollution Control Board

Report of the TAG on SWM constituted by the Govt. Of India, Ministry of Urban Development May 2005

Roy,G.K., Economics of Urban Solid Waste Management

Shastri, Satish C., Solid Waste Management—An Indian Legal Profile

Stuligross D., The Political Economy of Environmental Regulation in India, Pacific Affairs, Vol. 72, No. 3 (Autumn, 1999), pp. 392-406

Subash A., Community Participation in Solid Waste Management, SWM specialist, TNUDP-III

Logistics Management of Agricultural Products: Its Present Status and Future Challenges in Rajasthan

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Abstract : The total loss due to poor post-harvest processing of agricultural products in Rajasthan when valued in monetary terms reflects a tremendous loss in the economy. In 2010-11 post-harvest losses of oil seeds, wheat, sugarcane, pulses, oil seed, vegetables fruits and root crops due to inadequate processing and preservation reached 20 MMT. These losses were valued in Rs. 28957.90 million. The loss continued to increase and reached 21.5MMT amounting to Rs. 44865.00 million in 2011-12. Deficits in food items or financial loss should not have occurred if post-harvest losses were reduced through proper processing and preservation from harvest to consumption. Post-harvest losses in durable crops ranged between 10-15 percent; loss in semi-perishable crops was 15-30 percent and that of perishables, 25-40 percent (Hussain, 1993). Such a situation doesn't only reduce the national income but also leads to malnutrition and socio-economic problems. Both the government and private sector need to invest much effort in research and extension towards improving and modernizing post-harvest facilities for attaining more efficient market infrastructure and distribution channels. Research and extension activities have to be closely coordinated particularly in the public sector for the benefit of farmers, traders, and consumers.

INTRODUCTION

Rajasthan has an agrarian economy in which 26 percent of the country's GSDP comes from its agriculture. This provides employment to 2/3 population. wheat and oil seeds are main cash crops. Other crops are maize, jwar, bajra, fruits, vegetables, spices, jo, and cotton. The major industries in Rajasthan are wheat and oil seeds processing followed by textile, steel, garments, and pharmaceuticals. The agricultural sector has been showing steady growth during the past few years.

The post-harvest technological scenario in cereals, grain legumes, oilseeds, fruits, vegetables, tubers, roots etc. of Rajasthan presents a dismal picture, and is mostly comprised of traditional techniques practiced by growers, traders and the processors resulting in considerable deterioration of physical and nutritional qualities of harvested crops. Crops can be classified into various categories based on their degree of perishability: durable crops (cereals, pulses, oilseeds, spices and condiments), semi-perishable crops (Potato, Onion, sweet potato) and perishable crops (fruits and vegetables).

Improvement of these age-old practices and development of new technologies through organized research efforts has become obligatory to prevent huge post-harvest losses of grain and horticultural crops with a view to meeting the demand for food. In view of the serious nutritional deficiencies in the diet of the people, production of more food grains, fruits and vegetables coupled with an efficient post-harvest management system can ensure adequate and wholesome food for the people.

Success in production has led to great post-harvest losses due to inadequate capacity of farm-level storage facilities, lack of modern drying methods and inefficient grain handling practices. Harvests of fruits, vegetables, are done in specific seasons, while their supply becomes limited in the off-season. The

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situation is further aggravated by huge post-harvest losses both in quantity and quality due to improper handling, storage, and marketing. There is an urgent need to increase shelf-life to extend the period of availability. Retention of physical and nutritional qualities of the produce can be ensured by developing appropriate post-harvest technology.

Post -harvest technology of crops is a recent concept in the agriculture of Rajasthan. The national institutions like Food Corporation India (FCI) & Rajasthan krishi vigyan kender have been conducting research on post-harvest processing of mandated crops. Studies indicated that post-harvest losses in durables ranged between 7-10 percent and loss in perishable crops, 20-40 percent of the total production with a net value of Rs. 50,000.00 -60,000.00 million. These losses occur at several stages in the post-harvest management viz harvesting, grading, packing, transport, storage and marketing.

Agro- Economic Zones of Rajasthan

The Planning Commission has divided the country into four agro- economic zones on the basis of certain agro-economic characteristics like level of land productivity, incidence of rural poverty etc, these are as below.

Zone I: Area with relatively high level of productivity with either high levels of irrigations or high assured rainfall and low incidence of poverty – No district of Rajasthan falls under this zone.

Zone II: Area with relatively low productivity, high rainfall, low level of irrigation and high incidence of poverty – Chittorgarh and Jhalawar.

Zone III: Area with low productivity, low rainfall and high incidence of poverty – Ajmer, Alwar, Banswara, Bharatpur, Bhilwara, Bundi, Dholpur, Dungarpur, Sri Ganganagar, Jaipur, Jhalawar, Kota, Pali, Sawai Madhopur, Sirohi, Tonk and Udaipur.

Zone IV: Ecological fragile areas of the north Himalayan belt, north-eastern region and desert area of Rajasthan and Gujarat. This zone has lot of intra-zonal variation in the levels of productivity, poverty, and irrigation etc. The desert districts of Rajasthan, i.e., Barmer, Bikaner, Churu, Sikar, Jaisalmer, Jalore, Jodhpur, Nagaur, and Juhnjhunu are covered in this zone.

Types and causes of losses

The post-harvest losses of wheat are estimated lo the tune of 8 per cent of production. There are different estimates on post harvest losses in foodgrains. According to one estimate, the harvest and post harvest losses are as follows:

S. No	Losses(during and other causes)	Percentage (of losses)	S. No	Losses(during and other causes)	Percentage (of losses)
1	Threshing	1.50	5	Birds	0.5
2	Transportation	0.5	6	Insects	3.0
3	Processing	-	7	Moisture	0.5
4	Rodents	2.50		Total	8.0

Losses of mustard -rapeseed occur during post harvest operations like handling, transportation and storage by producer's, trader's, wholesaler's level, which vary from 0.2 per cent to 2.0 per cent as given in Table

Percentage of Mustard at different level

S.No.	level	Percentage of losses
1	Producer	0. 25 per cent
2	Wholesaler/Trader	2. 00 per cent
3	Miller	1.50 per cent
4	Govt Agencies	2.00 per cent
	Total	**5.75 percent**

Different losses of mustard –rapeseed may occur as following

- Loss in weight in dry season.
- Due to improper method of harvesting and ignoring the symptoms of harvesting, deterioration of the quality of seeds of mustard-rapeseed is occurred
- During handling/ lifting of bags, use of too much hooks by labourers causing spillage loss
- Due to rodent attacks on bags which results in spillage waste and losses during storage.

It is only in recent years that post-harvest losses of agricultural products mainly food items gained the

attention of policy makers. Based on the report "Crop loss and Waste Assessment" 2011, post-harvest losses of different food items in Rajasthan ranged from 10 to 26 percent. During the peak season for example, about 50 percent fruits mainly pineapple, watermelon, jackfruit, tomato etc. is lost due to inadequate processing facilities in Rajasthan (Hussain)

Rajasthan has been suffering from food losses for a long time due to various reasons such as:

- Inadequate post-harvest activities,
- Inefficient marketing system,
- Absence of adequate government support for research and extension,
- Absence of adequate processing and preservation facilities all over the state particularly for fruits and vegetables,
- Poor handling during loading and unloading at market points,
- Bruising, puncturing, and crushing due to improper packing.
- Absence of grading especially for fruits and vegetable.

A comparison of losses at different handling points reveals that at the wholesale level, losses are alarmingly higher than those at the retail level. Post-harvest losses from farms to wholesale markets are due to poor handling during loading and unloading and transportation. Packing losses are attributed mainly to the type of containers and manner in which food items are packed. Because of limited capital, rural farmers usually buy the cheapest and most available containers in their area, even if these are of inferior quality. The traditional types of packaging material are used. The products are often badly damaged due to bruising, puncturing, and crushing. In the absence of grading, high losses are incurred because of cross-contamination after some period between decayed items and good quality ones.

Marketing

Marketing channel from farmers to consumers

There are about 1954 villages in Rajasthan. These villages are served by approximately 6500 primary markets which constitute principal center of exchange in rural areas. Next are the secondary markets which serve both as assembly centers for the surplus supplies moving from the primary markets and as wholesale outlets for the supply of grains to primary markets in deficit areas. The secondary markets also forward grains, fruits and vegetables to major urban consumption centers. There are about 450 secondary markets in Rajasthan. The final group is the terminal markets, which serve the major urban population centers of the country. There are four major ones and several minor ones. They collect and assemble grains usually from the secondary markets and re-distribute these supplies to consumption areas particularly in urban regions. Most have major commission agents for these services.

There is virtually no product-oriented market study on processed fruit and vegetable products. Generally, the affluent urban society is perceived as the potential market for processed fruits and vegetables, which is, paradoxically, limited to only about 1 to 2 percent of the population of the country. Nevertheless, the market is expanding. Because of slow growth of local processing industries, the import of processed fruits and vegetables has been increasing rapidly. Advertising is playing a significant role. The rural market for processed fruit and vegetable products is also expanding.

World wide, differentiated import-export data are not available. Food statistics of FAO show that export potential for processed fruits and vegetables exists both in developed and in developing countries.

Future challenges/strategies

The foregoing discussions reveal that significant amounts of post-harvest losses affected the economy and welfare of farmers, consumers, and traders. Therefore, some of the important socio-economic and technological issues of post-harvest processing and preservation need to be considered to reduce post-harvest losses. These include.

Size of land holding: The size of land holding has a significant effect on the extent of post-harvest losses at the farm and different handling points. A comparative study on of the various post-harvest practices among small, medium, and large farms would enable researchers and policy makers to identify the appropriate post-harvest loss reducing technologies for specific group of farmers.

Educational background and training of farmers and traders: The educational attainment of the farmer including his attendance in informal training related to post-harvest technology is another factor that needs to be considered. Their participation in various seminars, workshops, and informal training on farming techniques would enable them to be receptive to the adoption of appropriate technology.

Attitude of farmers: Some investigations of the farmers' attitude disclosed that some of them are not aware of proper handling practices since they are more concerned with pre-harvest losses due to flood, drought, insect damage etc. Others view, loss or gain as the result of God's punishment or God's mercy; others associated loss to chance or bad luck etc.

Level of income of farmer: Income is very important as it affects largely the level of capital investment of farms. The income generated from farm to off-farm sources would determine whether the farmer is financially capable of reducing post-harvest losses through investment on better packaging materials or storage facilities.

Low investment has been argued as the main chain effect of low income. The lack of adequate capital inhibits farmers from buying recommended containers for transport. Most often, farmers may harvest immature crops mainly fruits and vegetables during times when they need immediate cash for the family and/or when spoil seeds are high. Harvesting of immature commodities result in poor quality products.

Presence of middlemen in marketing channel: In Rajasthan middlemen are the common source of financing for small farmers. Usually the rate of interest in cash or kind is very high. A well-managed and organized cooperative is expected to reduce post-harvest losses compared with individual farmer operation.

Capital investment and financing: Capital investment of some middlemen like exporters, truckers, and cold storage owners is high because of high cost of buildings, vehicles, equipment and machinery and other related costs. A much higher capital investment is expected in the operation of cold storage facilities. The relationship between big capital investment and post-harvest losses, and information on post-harvest practices should be collected through research.

Consumer's behavior: The extent of post-harvest losses at the consumer level can be related to their educational level, income, taste and preference, attitude, and family size. It is expected that the higher the educational attainment of the consumer, the lesser will be the food losses or vice-versa. The relationship between these two variables needs to be empirically tested. A few studies show that household income appears to have a strong relationship between the choice of sorted and assorted food items specially fruits and vegetables. In Metropolitan area, high -income groups prefer to purchase sorted products for assurance of good quality and convenience in preparation. Low-income groups however, prefer assorted fruits and vegetables due to lower spoil seeds.

Role of mass media: Dissemination of post-harvest information through the mass media as a strategy to minimize losses at the consumer level, advertisements and promotion programmers' on post-harvest practices of food items should be carried-out to motivate proper attitudes towards reducing food losses.

Participation of policy makers: Participation of policy makers in the development of postharvest industry is essential, considering their capacity to create the required policy and climate conducive to adopting post-harvest practices. Thus, an intensive and more effective extension effort would be required by policy makers who set national priorities. Providing policy guidelines for increasing post-harvest research and development activities carried out by research institutions and universities to determine the best-suited technology at the farmer and grain processor levels is also needed.

Adaptation of modern agriculture practices and use of technology is inadequate.

Overregulation of agriculture has increased cost, price risks and uncertainty.

Insufficient supply chains.

Improving input use efficiency of seeds, chemicals and fertilizers and water through engineering interventions

Reducing cost of cultivation

Improvement in production and productivity diversification necessary to substitute crops requiring high inputs (need for multi faceted ventures)

Reducing post harvest losses and facilitating non-land primary and secondary processing for value addition and by product utilization

Providing nutritional security for rural population checking and reducing environmental degradation (soil and water)Checking over exploitation of natural resources (Ground water and soil nutrients)Improving power availability and energy use efficiency easing the pressure on conventional energy sources by substitution with renewable energy options in crop production and processing

Bringing more area under efficient water application methods and harnessing available resources through watershed management, rainwater harvest and ground water recharge

Making the foodgrains of R&D in engineering, available to farmers through effective transfer of technology and commercialization

Making agriculture information-driven and the farmers information-guided

Empowerment of women by forming cooperatives and evolving woman friendly technologies;

Farmers have limited access to the latest equipment and technology. This results in high production cost and difficulty in competing in international market for sale of surplus produce. Further, there is little feed back from the farmers for product improvement and assessment of product acceptance. There is a need top generate more interaction among the farmers, R&D workers, departments of agriculture and industry.

There are wide technological gaps in meeting the needs of various cropping systems and regions. Urgent steps need to be taken to make farm machinery R&D Base stronger. Reduction of drudgery and improvement of safety and comfort in agricultural sector;

Empowerment of farmers for equitable distribution and efficient utilization of water, energy, agro processing and marketing of farm produce. The widely fragmented and scattered land holdings in many parts of the country need to be consolidated to give access to the benefits of agricultural mechanization. Appropriate equipment is required to improve moisture conservation and timeliness of operations in rainfed agriculture.

Future strategies on post-harvest research in Rajasthan

The future strategies of post-harvest research in Rajasthan should be determined keeping the following constraints in view:

Climatic constraints at harvesting: Due to delays and unpredictable weather rainfall harvesting, threshing and drying of wheat grains. The rainfall at this time favors disease and pest infestation as well as reduces seed quality. High temperature reduces yield and increases disease incidence. Rainfall and hailstorm in the later part of winter and during summer cause reduction in millet grain yield and quality.

Harvesting, threshing, cleaning, and sorting: Appropriate machines need to be developed/adopted through research and extension.

Drying and field transportation systems:- The drying problem is acute, particularly when there is rainfall. It is a very serious problem in the eastern region of the country where the wet period is longer. The problem is more acutely felt in the case of grain legumes since they lose viability more rapidly at high humidity. Large quantities are further spoiled by fungal attack.

Storage:- In spite of some research conducted on storage of food grains, legumes and oilseeds the most suitable storage technologies are yet to be developed. Development of home level techniques for drying and storage of various crops is required. About 70% of farm produce is stored by farmers for their own consumption. Farmers store grain in bulk, using different types of storage structures made from locally available materials. The pre-treatment necessary for better storage life is cleaning and drying of the grain, but storage structure design and its construction also play a vital role in reducing or increasing the losses during storage. Storage losses constitute a major share of food grain loss in postproduction operations .When scientifically constructed storage structures are available, it is essential that the grain being loaded is of good quality. Therefore, the grain is cleaned to remove impurities, fungus infestation, and rotten seeds, and then dried to a safe storage moisture level. The present trend is to harvest the crop at high moisture content. Therefore, grain moisture is generally twice the safe limit at the time of harvesting. Oilseeds and vegetable seeds are harvested at 3-7 times higher moisture than their safe storage moisture content. The safe storage moisture limits for major food grains

Storage Structures at Farmer Level:

Various research and development organizations in India have identified some proven, age-old structures from certain areas of the country and based on these, some improvised storage structures have also been developed and recommended for use at farmer level.

- *Coal Tar Drum Bin*
- *Domestic Hapur Bin*
- *Chittore Stone Bin*
- *Double-Walled, Polyethylene-Lined Bamboo Bin*

Upper limit of grain moisture content for safe storage.

Commodity	Moisture content (% wet basis)
Paddy, rice (raw)	14
Rice (Parboiled)	15
Wheat Kabuligrun, Bengal gram	12
Sorghum, maize, barley, ragi, bajra, pulse, turmeric, wheat atta maida besan	12.5
Coriander, chillies	10
Groundnut pods	6-7
Mustard seed	5-6

Source: Agricultural Engineering Directory.

On-farm food grain storage

- Method of Constructing Pusa Bins
- Bulk storage of food grains in India
- Cover and Plinth Storage
- Community Storage Structures
- Rural Godowns
- Silo System

Comparative costs for silo and godown storage.

ITEM	SILO SYSTEM (Rs.*)	GODOWN SYSTEM (Rs.*)
Capital costs		
Land	20 0000 (1850 m²)	60 000 (5550 m²)
Construction	6 500 000	3 940 000
Total	6 520 000	4 000 000
Recurring costs/year: grains/year		For grain -1 year of storage / For oilseeds 4- 6 months storage
Loss due to moisture	40 000 (0.2%)	200 000 (1%) / 100 000 (0.5%)
Loss due to rodents, insects, fungi, and handling	40 000 (0.2%)	1 600 000 (8%) / 800 000 (496)
Operational costs		
Electric power	27 500	80 000 / 40000 (Fumigation)
Fuel for dryer (Manual handling)	37 500	25 000 / 25000
Total	145 000	1905 000 / 965 000

Source Sawant (1984)

*Conversion rate adopted: 1 = 10 Indian Rupees.

Handling and transportation: Inadequate transport, lack of mechanical handling facilities, lack of mobile refrigeration facilities are some of the acute problems encountered during handling and transportation. Development of improved packaging technologies for fruits, vegetables, tubers and spices, and processed products is needed.

Processing and preservation: Utilization of fruits, vegetable and tuber crop wastes, extension of shelf life of fresh fruits, vegetables and spices, and home-level processing technologies should be promoted.

Agricultural mechanization should contribute to sustainable increase in yields and cropping intensity so that the planned growth rates in agricultural production are achieved.

The income of agricultural workers (cultivators and labourers) should increase at a satisfactory rate so that the disparity between urban

and rural income is eliminated so that agricultural workers are able to lead a dignified life and prevent them migrate to urban areas.

The benefits of agricultural mechanization should be extended to all categories of farmers with due consideration to small and marginal framers and to all regions of the country especially the rainfed areas.

Agricultural mechanization should make the environment worker-friendly especially for the women workers by reducing drudgery and health hazards and by improving safety in production operations.

Agricultural mechanization should contribute to conservation of land and water resources and more efficient use of inputs such as seeds, chemicals, fertilizer and energy.

Loss of agricultural production, both in quality and quantity should be reduced through timely operations and improvement in equipment and techniques. Equipment, technologies and approaches need to be developed for loss reduction and value addition of agriculture produce in production catchments.

Development of appropriate technologies for value addition, handling, packaging, storage, transportation and marketing of agricultural products for safe and quality food.

Agricultural mechanization should lead to a reduction in costs of production of different commodities, increase in income of farmers and an increase in the competitiveness of Indian agricultural produce and products in the world market. Regular training to scientists and farmers are to be extended to acquaint them with modern technologies such as precision farming for higher input use efficiency.

Conservation agriculture technologies such as zero-till drill, till pant machine, roto-till drill, strip till drill, raised bed and furrow planting systems with straw management will have to be adopted on large area.

Scientific water resource management through in-situ and ex-situ harvesting and conservation of rainwater and its recycling, consumptive use of rain and ground water, increasing ground water efficient through efficient irrigation, ground water recharge as well as ensuring management of watersheds and command areas.

For optimum utilization of scarce natural resources, efficient irrigation systems such as drip and sprinklers with high precision and on farm water management practices will have to be adopted. Improving efficiency of irrigation systems and pumping systems is essential to save energy and water.

Sustainable management of soil resources by devising efficient agricultural production strategies and developing crop models/farming system

Integrated nutrient and pest management

Farm mechanization through custom hiring of package of farm equipment with high capacity and high labour productivity.

Adopting farmer-friendly farming systems approach instead of the cropping system approach. This approach would call for diversification of agriculture to include livestock fisheries, horticulture, agro-forestry etc.

Partnership and participatory research by involving private sectors and NGOs

Promoting agri-business such as processing, marketing, infrastructure and environments.

Promoting post-harvest technologies and value addition.

Ensuring environmental sustainability.

Reorienting agricultural research priorities. It should be programme based, demand driven, problem solving and participatory mode.

High labour intensive farm operations for horticultural crops and hill agriculture needs to be appropriately mechanized for drudgery reduction and productivity enhancement.

CONCLUSION

Cereals (oil seeds and wheat) have almost doubled as compared to last record but in case of other crops, no such improvements have been attained. On the other hand, population growth rate has not been reduced substantially.

The post-harvest losses of different food items especially fruits and vegetables, are a great concern to us. Post-harvest losses due to inadequate facilities of processing and preservation must be given due

importance to ensure the food security both at macro and micro levels.

In Rajasthan, oilseeds are an economic and political crop. It has gained more government support in terms of credit facility, research and extension services, poil seeds support programmes, storage facilities at public and private sector levels, etc. However, fruits and vegetables have lagged behind and have been perennially burdened by the problem of high post-harvest losses and extremely low poil seeds due to inadequate post-harvest facilities.

Annual total production of different crops in Rajasthan (Lac MT)

Season	Crops	Avg.05-06 to 09-10	10-11	11-12
KHARIF	Rice	2.10	2.28	2.66
	Jowar	2.74	1.04	5.09
	Bajra	32.39	20.53	60.91
	Maize	14.33	11.49	20.53
	S.Millets	0.04	0.012	0.08
	Total	51.61	35.36	89.27
RABI	Wheat	71.07	75.01	104.24
	Barley	6.17	6.2	9.55
	Total	77.24	81.21	113.79
	Total Cereals (R +K)	128.85	116.57	203.06

REFERENCES

- Amiruzzaman, M. 2001. Post-harvest processing, handling and storage of crops, Rajasthan Agricultural Research Institute, jaipur.
- Agriculture statistics of Rajasthan, Dir Economics & statistics rajasthan, jaipur 2005-06 to 2011-12.
- Ali, N. 2008. Farm Mechanization, Status, Policies and Issues. Preceding of Tractor & Farm Machinery Manufacturers' Meet, Nov. 16-17, 2007, CIAE, Bhopal.
- Baqui, et. al. 1994. *Oil seeds Post-harvest Processing in Rajasthan: Strategies for Development both for Domestic Need and Export.* A paper presented in the National Workshop on "Post Harvest Processing and Preservation of Agricultural Products its present Status and Future Strategy in Rajasthan, held at BARC 26-27 June, 1994.
- Baqui, et. al. 2000. *Oil seeds husk briquetting: A sustainable technology for biomass energy development in Rajasthan.* A paper presented in the International conference on Agricultural Engineering at the University of Warwick. United Kingdom. 2-7 July 2000.
- Baqui et. al. 1996-97. *Processing technologies of oil seeds in Rajasthan.* Paper presented in the National workshop on Post Harvest Processing BARC, Dhaka, June 1994.
- CIDA. 1993. *Review and suggested Fiscal policies for promoting Agro -Industries of Rajasthan.* A report Presented in the BARC workshop of post-harvest processing and Preservation of Agricultural Products- its present Status and Future Strategy in Rajasthan, held at BARC 5-6 April. 1993.
- FAO & BRRI. 1986. Farm and village level post-harvest oil seeds loss assessment; Action programme for the prevention of food losses.
- FAO. 1997. *Statistical data bases for primary agricultural production.* Internet Website, http://www.fao.org/
- Hussain, M. A. 1993. *Nutrition and socio-economic dimensions of post-harvest processing and preservation of agricultural products.* A paper Presented in the National Workshop on post-harvest Processing and Preservation of Agricultural Products - its present status and future strategy in Rajasthan held at BARC May - 25-26, 1993
- Kulkarni SD. 2005. Food Safety and Security Issues in India: Challenges and Approach. Lead Paper for presentation in National Seminar on *Post Production Systems and Strategies to the Issues and Challenges of Food Safety and Security* during Sept. 22-23, 2005 at TNAU, Coimbatore –641003
- *PHD RESEARCH BUREAU, Compiled from RBI and Economic Review of Rajasthan 2010-11.*
- RBS. 1999. Rajasthan Bureau of Statistics Published by Rajasthan Bureau of Statistics. Statistics division, Ministry of Planning, Government of the People's Republic of Rajasthan.

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A Study of Inventory Management as a Tool of Effective Supply Chain Management

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Abstract : In this millennium, competition will be across supply chain, not in individual companies. Supply Chain Management (SCM) refers to a managerial process of a joint approach of all supply chain participants to design, develop and operate a system which responds to customer expectations. The aim of every business is to deliver the right product, in the right quantities, at the right place, at the right time at minimal costs. This in turn translated into the interrelated issues such as customer satisfaction, inventory management, flexibility of supply chain etc. In today's scenario almost every organization faces the paradox that holding inventory is a expensive and speculative yet market demand is often immediate and highly uncertain. Also inventory is a major source of cost in a supply chain and it has a huge impact on responsiveness. For this paper the data have been collected of few manufacturing companies in NCR. The present paper makes an effort for establishing norms and the designing the effective inventory management system for a better Supply Chain Management. It was observed inventory management is an integral part of Supply Chain Management in manufacturing company. It is also observed that Inventory Management and Supply Chain Management bring the cost effectiveness in the companies manufacturing process.

Key words: Supply Chain Management, Inventory Management

INTRODUCTION

Since the beginning of the 1990's, there has been a paradigm change in the business scenario, mainly due to the liberalization policy of various economies all over the world, and revolutionary innovations in the field of science and technology. To sustain themselves in such an erratic environment, firms need to have core competency and productivity. In this millennium, competition will be across supply chain, not in individual companies. The central aim of any business is to have the right products in the right quantities, at the right place, at the right time at minimal costs. This in turn translated into the interrelated issues of customer satisfaction, inventory management and flexibility. Customer satisfaction to a high degree is dependent on the flexibility of the supply chain, i.e., its ability to respond to change in demand. Many companies like Godrej Locks- a division of Godrej & Boyce Company has reduced its order-to-delivery cycle from three weeks to only three days and HP has cut the duration of its cycle to deliver to customers in India from the US by one third, all this happened because of higher and systematic Supply Chain Management.

SUPPLY CHAIN MANAGEMENT

Supply Chain Management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible. Supply Chain Management spans all movement and storage of raw materials, work in progress and finished goods from point of origin to point of consumption.

A supply chain is a network of facilities and distribution options that performs the functions of procurement of material, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers. Supply chain exists in both service and manufacturing organizations, although the complexity of the chain may vary greatly from industry to industry and firm to firm.

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According to the CSCMP, a professional association that developed definition in 2004, Supply Chain Management "encompasses the planning and management of all activities involved in sourcing and procurement, conversion and all logistics management activities. It also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers. In essence, Supply Chain Management integrates supply and demand management within and across companies."

INVENTORY MANAGEMENT

In business management, inventory consists of a list of goods and material held available in stock. The dictionary meaning of inventory is 'Stock of Goods'. An inventory may be defined as a stock of goods, which are held for the purpose of future production or sale. Inventory serves as a cushion between the production and consumption of goods necessitated by the technological demands of production and transportation and customer needs.

Inventories are generally justifiable and there are obvious economic reasons for their existence. Since there are several costs associated with the inventories, an effective inventory management boils down essentially to setting a balance between the opposing cost factors. So, there is urgency of inventory control. Inventory control means controlling the inventories in the organization. It is a technique of maintaining stock items at desired levels, whether they may be a raw material, work in progress or finished goods.

OBJECTIVES OF STUDY

This study deals with performance measurement and improvement of supply chain processes. An important level in this respect is inventory management. On the one hand, different types of inventory are necessary to buffer against market and operational uncertainties but, on the other hand, inventory is sometimes the result of inefficient management of the supply chain processes. Therefore, inventory management has been a focal point of managing supply chain processes.

The Incidental objectives that contribute to the main objective have been :

- To know the effectiveness of Inventory management in supply chain management.
- To find that Inventory Management getting to our premises the right way or not.
- To analyze that whether inventory management is an integral part of Supply Chain Management or not
- To find that Cost effectiveness of manufacturing industries is also depends on Inventory management and supply chain management.
- To study the effectiveness of Existing inventory management strategies in Supply chain management.

Research Methodology:

The current study is descriptive one designed to identify the effectiveness of the role of inventory management in supply chain management of manufacturing industry. Keeping into consideration the various objectives this study involved collection of both primary and secondary data. The sample was chosen on the basis of Random Sampling technique.

Data Collection Tools : Questionnaire was developed to survey five manufacturing industries about their inventory management. The opinions are also sought about the specific role and importance of Inventory management in Supply Process Management.

Nature of Data : Primary data is collected directly from the target respondents; it could be collected through Questionnaire surveys, interviews etc.

Secondary Data was collected through already available and published which originates from the specific field or area where research is carried out.

Data Collection : Primary Data was selected from the sample by a self-administrated questionnaire in presence of interviewer.

Sample Size : The Survey is conducted among 5 manufacturing industries of NCR.

Sample area : NCR Delhi.

Secondary Data : Secondary data has been used which is collected through

Articles.
Reports.
Journals.
Magazines.
Internet.

Analytical Tools : Simple Statistical tools have been used in the present study to analyze and interpret the data collected fro the respondents.

Role of Inventory in SCM : It is worth noting that neither high nor too low levels of inventory are favorable for the health of any organization. At the same time, there is no cut-and dried formula to estimate or predict demand as there is no thumb-rule to forecast demand, especially in the highly dynamic marketplace. Furthermore, globally, companies are continuously under the thrilling pressure to cut down their total logistic cost, especially inventory costs. Inventory exists in the supply chain because of a divergence between supply and demand. There are certain reasons behind a gap between demand and supply, namely; time, discontinuity, uncertainty and economy. This divergence is deliberate at any manufacturing industry, where it is economical to manufacture in large lots that are then stored for future sales. An important role that inventory plays in the supply chain is to increase the amount of demand that can be satisfied by having product ready and available when the customer wants it. Another significant role inventory plays is to reduce cost by exploiting any economics of scale that may exist during both production and distribution.

Most of the researches in supply chain areas are concerned about optimizing the supply chain in terms of its efficiency and competence in the product market, but only limited studies are done considering the inventory management in supply chains. In manufacturing industries, inventory contributes a major part of the total cost.

The objective behind proper inventory management is to ensure the availability of materials at the right time, in the right place, at the right cost. The various elements of costs are:

(i) *Procurement Cost* : This cost includes cost of order processing, cost of transmission of an order from the purchase department to the supplier, cost of transportation etc.

(ii) *Carrying Cost* : This cost includes Space rent for the storage of goods, cost of insurance of goods, Cost of working capital locked in the inventory, cost of obsolescence, cost of deterioration etc.

(iii) *Stock-out Cost* : it is the economic consequence of either an external or an internal shortage.

Effective inventory management in a supply chain can play a vital role in cutting inventory holding costs across the different stages of the supply chain, thus emphasizing the need of a general model for managing inventories within a supply chain. Baganha & Cohen (1996) developed a stabilizing model for effective inventory management for supply chains. Supply chain materials management methods could be made complex considering a multi product scenario and discontinuous supply chains. So the models developed should have room for all kinds of supply chain variability. Lee & Billington (1993) developed a model for inventory management considering decentralized supply chains.

Inventory is extending all over the supply chain from raw materials to work in process to finished goods those suppliers, manufacturers, distributors, and retailers hold. Inventory is a major source of cost in a supply chain and it has a huge impact on responsiveness. If we think of the reaction gamut, the location and quantity of inventory can move the supply chain from one end of the gamut to the other. For example, a manufacturing supply chain with high inventory levels can manufacture and deliver the goods immediately. It has a high level of responsiveness because it fulfills the orders immediately. In contrast, a manufacturing supply chain with little inventory would be very unresponsive. A customer, who wants the goods, would have to order it and wait several weeks or even months for it to be manufactured, depending on how little inventory existed in the supply chain.

As discuss earlier that too much and too high inventory level are not good for the health of the organization. If company holds too much of inventory, it may be capable enough to meet unforeseen demand and generate additional sales volume due to advantages of impulse buying tendency , but at the same time, it leads to undue carrying and holding charges and blockage of working capital. On the other hand, if a company hold too little inventory, there will be alternate needs such as too frequent ordering, loss of quantity discount etc. The overall impact may be understood with the help of the following table:

TABLE 1

Too much vs Too Low Inventory Level and Their Impact

Too High	Factors	Too Low
High	Total Distribution cost	Low
High	Volume of Sales	Low
High	Inventory Carrying cost	Low
Low	Procurement Cost	High
Low	Stock-out cost	High
Low	Profitability	Low
Easily	Availability	Short-supply
Huge	Working Capital Need	Least
Decrease with the passage of time due to obsolescence	Value of product	Middlemen get advantage of shortage
Adverse	Long-run Effect	Adverse

On the basis of data collected of various manufacturing companies, it is observed that inventory plays a significant role in effective Supply Chain Management. So, there is an urgent need of proper inventory management. By managing the inventory, the cost of inventory may be reduced as well as the overall cost of supply chain will also be minimize and benefit can be share amongst the all the partners of supply chain.

It is also observed that inventory management is an integral part of SCM in manufacturing companies as inventory constitutes almost 70% of the cost of the goods. In this competitive environment, it is important for every manufacturing company to reduce the cost of inventory. The element of cost of inventory, as discuss earlier, are procurement cost, Carrying cost and stock- out cost. So, these costs can be control by implementing the proper inventory management system. Most of the companies are using the traditional method for managing their inventories such as EOQ (Economic order quantities), ABC analysis, VED analysis etc. But experts have introduced several new methods, such as Material Requirement Planning (MRP), Distribution Requirement Planning (DRP), and Just in Time (JIT) etc., which can be used by such companies for better inventory management.

It is also observed that by managing the inventory by using traditional methods, Companies are reducing around 10 to 15% of their Supply chain cost, if they also implement the new methods so cost may be further reduced by 4 to 5%.

CONCLUSION

The supply chain management revolution is in its early stages the basis of its development is based on men steady progress and technological advancement. Supply chain management is very essential tool in this competitive era because it can simultaneously reduce cost, increase revenue and improve services.

The logical conclusion here is that inventory and flow time are synonymous in a supply chain. managers should use actions that lower the amount of inventory needed without increasing cost or reducing responsiveness, because reduces flow time can be a significant advantage in a supply chain. The present paper established norms and the design the effective inventory management system for a better Supply Chain Management. It is concluded that inventory management is an integral part of Supply Chain Management in manufacturing company. It is also concluded that Inventory Management and Supply Chain Management bring the cost effectiveness in the companies manufacturing process. By using the inventory management, manufacturing companies can reduced the cost by 10 to 15%. There are many method developed by experts such as JIT system , MRP , DRP etc., for inventory management to control the cost of inventory and by using these method the overall cost of supply chain can be further reduced. So, it may be concluded from the above discussion that inventory manage-ment plays a significant role for effective Supply chain management.

REFERENCES

1. Agarwal, D. K. : Textbook of Logistics and Supply Chain Management, 2003
2. Chen, I. J., Paulraj, A. (2004): Towards a theory of supply chain management: the constructs and measurements. In: Journal of Operations Management, 22/2: 119-150
3. David Simchi Levi, Philip kaminsky, and Edith Simchi Levi. Designing and Managing the Supply Chain: Concepts, Strategies, and Case Studies. Irwin McGrawHill, 2000.
4. Harland, C.M. (1996) Supply Chain Management, Purchasing and Supply
5. R.B. Handfield and E.L. Nochols, Jr. Introduction to Supply Chain Management. Prentice Hall, 1999.
6. Rolf G. Poluha: *Application of the SCOR Model in Supply Chain Management*. Youngstown, New York 2007, ISBN 1934043230.
7. Sridhar Tayur, Ram Ganeshan, Michael Magazine (editors). Quantitative Models for Supply Chain Management. Kluwer Academic Publishers, 1999 Supply Chain Management, (Hartmut Stadtler, 1st Edition).
8. Sunil Chopra and Peter Meindel. Supply Chain Management: Strategy, Planning, and Operation, Prentice Hall of India, 2002.

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A Study of Consumer Attitude Towards MLM Companies – Case of Amway & Avon

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Abstract : Multi-level marketing is a strategy in which the sales force is compensated not only for sales they personally generate, but also for the sales of others they recruit, creating a chain of distributors and a *hierarchy* of multiple levels of compensation. Other terms for such concept include network marketing, pyramid selling and *referral marketing*. Salesmen are expected to sell products directly to consumers by means of relationship referrals and *word of mouth* marketing. Some people equate MLM with *direct selling*, although MLM is only a part of direct selling. MLM companies had been subject to criticism as well as the target of lawsuits. Criticism has focused on their similarity to illegal *pyramid schemes*, high initial start-up costs, encouraging if not requiring salespeople to purchase and use the company's products, potential exploitation of personal relationships which are used as new sales and recruiting targets, tedious and sometimes exaggerated compensation schemes. However not all MLM companies operate the same way, and MLM groups have persistently denied that their techniques are anything but legitimate business practices. Companies like Amway and Avon have been frontrunner in this concept and people have always relied and had faith on such companies. *This Paper has been done to find out the perception of the people of Haryana regarding these MLM Companies with the help of Chi-Square Test.*

Keywords: Marketing, Network, Consumer, Pyramid, Referral.

INTRODUCTION TO INDUSTRY

Multi-level marketing (MLM) schemes are one of the fastest growing types of business. However, little has been written about the ethics of MLMs. This oversight is somewhat surprising, especially because some prominent MLMs have been accused of being pyramid schemes. Pyramid schemes were the number one type of internet fraud in 1996, and the fourth most common for mlm of internet fraud in 1997. In the aftermath of recession has witnessed a boom in direct selling schemes also known as pyramid selling, multi-level marketing or network marketing. Boasting huge annual sales they provide 'get-rich-quick' opportunities for thousands of potential entrepreneurs. Alternatively, recent court judgments have labeled such schemes 'a swindle on the public', and 'an illegal lottery relying on misleading literature to obtain subscriptions **(Sarker, 1996)**. This study examines the nature of MLMs and their similarities with and differences from pyramid and endless chain schemes. The paper argues on the fact that MLMs pose some unique ethical issues, issues that are not easy to address or resolve. Multi-level marketing, also known as network marketing, is practice of distributing, selling or supplying products or services through various levels of independent agents (contractors, distributors, etc.). Agents are paid commissions, bonuses, discounts, dividends or other forms of consideration in return n for selling products or services and/or for recruiting other agents. The party who recruits another individual is the "upline" of the recruit. The recruited party is supposedly the "downline" of the recruiter.

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SELLING TO FAMILY MEMBERS AND FRIENDS

Some MLMs encourage participants to sell product to family members and Friends and/ or to recruit them into the MLM. Such marketing strategy poses certain ethical difficulties. Participants, desperate to succeed at their new MLM business, may feel dr iven to pressure relatives and friends into buying cosmetics, water filters, jewelry, etc. In other words, MLMs can alter human relationships, encouraging people to "instrumentalize" relations rooted in love and affection. Relatives may feel somewhat forced into buying goods in order to keep their sons or daughters from feeling ashamed, to show support or to avoid a big fight within the family.

EXPLOITING THE HOST-GUEST RELATIONSHIP

A related concern: MLM participants typically pitch their products inside potential customers' homes. If you invite the Avon lady (whom you may know personally) into your home, you naturally will feel that you need to be a good host. Ho st should be polite. The feeling that you should feed the "guest" when of course, this guest is not your usual guest. A "guest" does not come into your house and then try to sell you something. MLMs blur the line between the social setting and the selling setup. What the guest wants to receive is the host's order for product and money and/or a commitment to join the MLM. Since the host is accustomed to being responsive, this situation easily can be exploited by the MLM participant. This possibility, though, is not one that MLMs either warn about or guard against. On the contrary, MLMs advocate getting inside people's homes in order to make the sale.

APPEALING TO GREED

Prospects are encouraged to dream and to envision themselves earning millions of dollars, living in large houses, driving expensive cars. Indeed, MLMs circulate tales of people who have been wildly successful using their techniques. Success is always measured in purely material terms. These "success stories" may not be good parents or citizens, but they do dr ive luxury cars and wear costly clothing.

INTRODUCTION TO AMWAY

The Year was 1959, when Rich DeVos founded Amway Corp. with his longtime friend and partner, the late Jay Van Andel. Amway now operates in more than 80 countries and territories around the world, and enables people to own independent businesses. The AMWAY business model is based on the AMWAY Business Owner Compensation Plan – a low-risk, low-cost business opportunity that is open to everyone. An AMWAY business rewards for selling products and for sponsoring others who do the same. In this business one can earn income from:

- Retail profit on product to customers. (Retail margins on health, beauty, and home care products average about 29% when these products are sold at Suggested Retail price.)
- Monthly performance bonuses ranging from 3% to 25% of business volume, depending on monthly productivity.
- Monthly and annual leadership bonus & cash awards with business incentives based on group performance.

Are you working towards a better life for you and your family? Are you in control of your future? Are you getting the rewards your hard work deserves? Your life doesn't have to be a trade-off between making the money you need and having the flexibility and time to live your life to the fullest. The Amway Sales and Marketing Plan put you in control, allowing you the flexibility to work where and when you want, giving you time for family and friends as well as the opportunity to earn a good income. It adapts easily to your needs and ambitions, and grows with them, offering you all the personal support and assistance you require to become the Business Owner you want to be. To start the Amway Business one needs to buy the Amway Business Kit and be sponsored in the business by an already existing Amway Business Owner. Despite what you may have heard, starting an Amway business doesn't involve handing over large amounts of cash. With your efforts and our knowledge, the Amway opportunity can become everything from a means of earning a little extra cash to building an international business. Where do you want to go? The Amway Sales and Marketing Plan is a low risk, low start-up cost business opportunity that is open to everyone. It allows you to build your business through retailing products and sponsoring

other people who, in turn, can retail products and offer the business opportunity to others. By passing your sales and marketing knowledge to your developing team, you not only build your own business network but also enable others to build one of their own. The Amway Sales and Marketing Plan have been operating for over 40 years and is available in over 80 countries and territories around the globe. The core of the Amway Sales and Marketing Plan's income opportunity is the sale of quality AMWAY products to retail customers. As your Amway business grows, the rewards you earn grow in proportion. The Amway Sales and Marketing Plan do not compensate anybody for simply recruiting others as Amway Business Owners.

INTRODUCTION TO AVON (*THE COMPANY FOR WOMEN)*

Avon is the company that invented the direct selling/network marketing industries. Founded by David H. McConnell as California Perfume Company, Avon has since grown to an international organization with more than 5 million representatives worldwide. Company is working more then 120years. It was the company's first sales employee, Mrs. P.F.E. Albee, who pioneered the direct sales. The company's business model offered women a chance to earn their own money in an era where the vast majority of women couldn't find work outside the home. Avon aggressively added new product lines to target additional market niche including upscale jewellery, a youth line called mark, and clothing. Avon has also partnered with existing brand names like Curves and Liv Botanicals in arrangements that are beneficial for both the brands. Today Avon isn't cosmetics, fragrance and skin care company so much as it is a mall ahere each store's content is availability by direct sales.Avon is internationa;y known as corporate sponsor of women's charities. Avon's Compensation Plan stresses product sales over recruitment. The plan is very generous with commissions, with the potential to earn up to 50% depending on the size of each order placed. In addition, representatives can "jump start" their Avon businesses by becoming Leadership Representatives and recruiting others as company representatives. Leadership Representatives earn commissions on the earnings of up to a 3-member downline. The company also pays commissions on Internet sales made through its representatives' personal websites.

DIFFERENCE BETWEEN AMWAY & AVON

The differences between Avon and Amway are not only in the sales method but also the distribution of profits. Avon uses a one-leveled method, in which the income of sales personnel depends on the sales volume. Amway, however, takes the multi-leveled way. The sales people make money not only from sales volume, but also gain commissions from the achievement of the sales people on the lower levels. At times such methods could easily become the notorious 'pyramid sales,' when sales people only focus on developing lower level representatives rather than improving their own sales achievement. But from consumer point of view Amway representatives will offer more direct service to its customers. However it is also seen that too strict control over the selling mode would hinder the development of direct selling, which has many advantages over traditional retail methods, due to the lower costs and more direct service. Again the perceived difference has to do with the company's business model, they are all MLM companies, which has more to do with the products themselves and the way the companies choose to execute that strategy. Amway is perceived as a cult because it acts like one, trying to portray itself more as a lifestyle than a business opportunity. However Avon works with bit more class, and sells reasonably good quality products with a narrow focus. Distributors for Amway tend to concentrate on recruiting rather than on retail sales. The compensation plans promises huge earnings for those who have a large network of distributors under them, simply selling the product is not very lucrative. Contrastingly, when people are called for Avon party they are not surprised with anything that fosters discomfort. People who decide to sell Avon are actually committed to sell the product. Avon promotes itself as a company which makes its customers to earn something extra on the side.

LITERATURE REVIEW

According to **Bloch, (1996)** people promoting multilevel marketing praise it as an opportunity of a lifetime with no catch. Claims that there is indeed a serious catch: the conventional process of promoting this so-called opportunity to friends and virtually everyone else in someone's circle of acquaintance

is, for the most part, unacceptable in western society. Maintains that truly determined sellers may well make money, but most will not, capitulating rather in the face of rejection ranging from disinterest to serious disapproval and resentment of the matter having been raised at all. **Msweli & Adrian Sargeant, (2001)** indicated that a number of the characteristics of NWM organisations, and those of the individual distributors themselves, could offer considerable utility in allowing NWM organisations to predict the duration of the relationship that they might expect to develop with a particular distributor. Observation by **Palmer, (1996)** suggested that there has been considerable recent interest in evolving forms of network organizations, and notes the suggestion that organizations are developing increasingly fuzzy external boundaries as ongoing relationships with external subcontractors are developed. Findings of a research by **Salciuviene et al., (2011)** suggested that trust, locus of control and shared values are moderated by channel commitment of the downstream channel members. Findings of a Study by **Hillebrand & Biemans, (2011)** suggested that firms are aware of the importance of downstream customers, but frequently fail to establish effective relationships with them, further they also identified several barriers that hamper an orientation on downstream customers and shows how firms may deal with these barriers. According to **Berman & Thelen, (2004)** A well-integrated multi-channel format enables consumers to examine goods at one channel, buy them at another channel, and finally pick them up at a third channel. Multichannel retailing offers synergies, as it can result in an increased customer base, added revenue, and higher market share. Research by ***Daryl Koehn*, (2001)** revealed that Pyramid schemes were the number one type of internet fraud in 1996, and the fourth most common form of internet fraud in 1997, also MLMs pose some unique ethical issues, issues that are not easy to address or resolve. Value equity and brand equity respectively have significant effects on customer acquisition and customer retention. Customer acquisition has a significant "feedback" effect on value equity, and relationship equity affects brand equity positively **Chang & Tseng, (2005)**. Trust is relevant but not in itself a sufficient condition for the development and sustaining of buyer-supplier relationships. The objective rationality requires that business relationships are centered on organizational needs and benefits which necessitate the rational standard of inter organizational reliance **Jiang et al., (2010)**. A study on customer supplier relationship by **Laeequddin & Sardana, (2010)** revealed that the trust focus on partner's characteristics such as benevolence, honesty, reliability, credibility, integrity, contracts, agreements etc., in the context of B2B relationship these perspectives can only help the partners in evaluating the other partner as trust worthy. Once the partners engage in the relationship the orientation will change towards perspectives of rational risk.

RESEARCH METHODOLOGY

Objective of Study

Main objective

To study the awareness of people about multi level marketing (networking) and also about there response about Avon and Amway (networking company)

Sub objectives

- To create the awareness about multi level marketing.
- To know the level of awareness about various networking companies.

JUSTIFICATION OF THE STUDY

The study attempts to identify the role of networking in human life, which would help them to take the decision that they should invest in networking or not. Some people thought that the networking companies are fraud and are just to make there own profit and nothing to do with there agents and customers. The study also identifies the attitudes of the customer towards such companies. The scope of this study is very wide with the help of it we will be able to know the investing pattern of people. This will also help in spreading awareness among customers about networking companies.

RESEARCH DESIGN

The research design of this project is Descriptive in nature.

DATA COLLECTION

➢ **Secondary data like** Bocks, magazines, Reports, website have been used for the purpose of this research.

DATA COLLECTION

100 Questionnaire are being framed for this research, taking into consideration the various aspects.

SAMPLE AND SAMPLING DESIGN

A random sample of 100 respondents was selected for research purpose. The sample was drawn from Haryana. After scrutinizing the filled questionnaires, 90% of respondents said that they know about multi-level marketing whereas 10% respondents didn't even understood this word.

HYPOTHESIS

Following Hypothetical assumptions has been used:

$1H_0$: There is no significant difference between the satisfaction and experience for Avon and Amway.

$2H_0$: There is no significant difference between the money spent by respondents on product of Avon and Amway.

$3H_0$ There is no significant difference between the usage period of Avon and Amway.

DATA ANALYSIS TECHNIQUES

The statistical tools used for data analysis includes Bar diagrams, & Chi-square test. Chi-square test is applied to test the goodness of fit, to verify the distribution of observed data with assumed theoretical distribution. Therefore it is a measure to study the divergence of actual and expected frequencies.

LIMITATIONS

The Respondents were sometimes unable to spend much time for filling up the, questionnaire. So, the chances for bias in the respondents answer were on the higher side. Lack of time is also a reason of some in comprehensiveness. There is possibility of sampling errors in the study. The responses obtained might be inaccurate or biased, inadvertently or deliberately. Due to limited time, in depth study was not possible.

DATA ANALYSIS

90% of respondents have positive response that they know about multi-level marketing whereas 10% deny that they don't know about multi-level marketing. So, awareness about multi-level marketing among people is good but this concept should be known to everyone. 55% know about Avon Company whereas 30% knows Oriflame, 10% Amway and only 5% people have knowledge about all the mentioned companies. So, the conclusion is that the awareness about Avon is highest among all of the mentioned companies. 69% of respondents have preference for Avon over Amway and 31% has preference for Amway over Avon. This concludes that people have more preference to Avon. 54% of respondents use Avon whereas only 27% uses Amway and there are only 19% uses both. 73% of respondents prefer Avon, but only 27% has good brand value for Amway. So, the conclusion is that brand value of Avon is more than Amway. 52% respondents prefer Avon products, 10% Amway, 27% Oriflame and 9% Modicare and 2% others. So, the usage of product of Avon is maximum.

43% respondents are highly satisfied by the product and experience of Avon and 29% respond that product are good 15% says that product are average and 13% says that product are bad. 49% respondents are highly satisfied by the product and experience of Amway and 23% respond that product is good 13% says that product is average and 15% says that product is bad. 25% spent money between Rs. 0-10,000, 23% Rs.10,000-15,000 whereas 5% responded to Rs.20,000 and above. 56% spent money between Rs. 0-10,000, 10% Rs.10,000-15,000 whereas none responded to Rs.20,000 and above. 10% of respondents says that there is no risk

with networking, 14% says 0-30% and 26% responds that there is more than 90% risk in investing money in networking. 74% of respondents are satisfied with Avon products. This clears that maximum number of person are satisfied with Avon products. 67% of people says that there neighbour prefer Avon over Amway. 3% of people have never used the Avon products while 14% is using Avon from last 1-2 year and 16% are using Avon from more than 3years. 22% of people have never used the Amway products while 29% is using Amway from last 1-2 year and 9% are using Amway from more than 3year.

STATISTICAL ANALYSIS

Test of Hypothesis

Statistical (Chi-Square) Analysis

S. NO.	Hypothesis	Calculated Value of chi sq	Tabulated value of chi sq.	D.O.F.	Status
1	There is no significant difference between the satisfaction and experience for Avon and Amway.	54.72	9.01	3	Rejected
2	There is no significant difference between the money spent by respondents on product of Avon and Amway.	84.72	9.01	3	Rejected
3	There is no significant difference between the using period of Avon and Amway.	33.48	6.26	4	Rejected

Interpretation 1: 43% of respondents responses that they are highly satisfied using Avon 29% are satisfied using Avon product and 15% says that they are average satisfied by Avon whereas 49% of respondents responses that they are highly satisfied by Amway and 23% are satisfied and 13% are average satisfied using Amway and this is also supported by CHI-SQUARE test.

Interpretation 2: 25% of respondents responses that they spent Rs. 0-10,000 whereas 47% respondents says they spent 15,000-20,000 whereas only 56% of respondents responses that they spent Rs. 0-15000 on Amway and 34% spent Rs. 15,000-20,000 and this is also supported by CHI-SQUARE test.

Interpretation 3:- 3% of respondents responses that they had never used Avon product and 56% says they are using Avon product from last 2-3 year and 16% are using them from more than 3years whereas 22% of respondents responses that they have never used Amway product and 13% has used the product of AMWAY from last 2-3 years and only 9% is using them for more than 3years this is also supported by CHI-SQUARE test.

FINDINGS

In working with clients it was seen that payment services underperforms or do not provide certain capabilities sought by clients. These include:

- Majority of respondent's i.e. 90% know about MLM whereas 10% doesn't know about networking.
- Majority 55% know about Avon Company whereas 30% knows Oriflame, 10% Amway and only 5% people have knowledge about all the mentioned companies.
- Majority 54% of respondents uses Avon whereas only 27% uses Amway and there are only 19% uses both.
- 73% of respondents prefer Avon But only 27% has good brand value for Amway. So, the conclusion is that brand value of Avon is more than Amway.
- 43% respondents are highly satisfied by the product and experience of Avon and 29% respond that product are good 15% says that product are average and 13% says that product are bad.

SUGGESTIONS

- Networking companies should take initiative in providing awareness amongst the people about the multi-level marketing.
- Networking companies should take initiative in providing awareness amongst the people about the products available.
- Multi-level marketing is still not recognized as a good business due to risk factor.

- Company should increase the commission they are giving to agents.
- Proper dealings with clients need to be taken care of.
- A major problem faced by customer is the knowledge about the plan given by networking company as they are very tough to understand.
- Agents and customers should be well informed about the benefits by investing in networking company.

CONCLUSION

As a project-based enterprise, Networking is very old and highly popular concept.Most of the people are aware about word "Networking" but they get confused when they listen to word "Multi-Level Marketing".There is a need of creating more awareness about networking in people.Person uses the product but they are not aware about the companies and moreover person who know about the companies fails to understand the palns of companies, commission which will be given to them for selling the product and advantage of being in branches i.e. networking or multi level marketing. From the study it may be concluded that people think that most of the networking companies are fraud and there is no use of investing in such type of networking companies. Also the risks associated with these companies are very high as concluded by study (thinking of respondents). There is a need that companies should inrease there product line.

BIBLIOGRAPHY

1. Adrian Palmer, (1996) "Linking external and internal relationship building in networks of public and private sector organizations: a case study", International Journal of Public Sector Management, Vol. 9 Iss: 3, pp.51 – 60.
2. Ai'hwa Chang, Chiung-Ni Tseng, (2005) "Building customer capital through relationship marketing activities: The case of Taiwanese multi-level marketing companies", Journal of Intellectual Capital, Vol. 6 Iss: 2, pp.253 – 266.
3. Barry Berman, Shawn Thelen, (2004) "A guide to developing and managing a well-integrated multi-channel retail strategy", International Journal of Retail & Distribution Management, Vol. 32 Iss: 3, pp.147 – 156.
4. Bas Hillebrand, Wim G. Biemans, (2011) "Dealing with downstream customers: an exploratory study", Journal of Business & Industrial Marketing, Vol. 26 Iss: 2, pp.72 – 80.
5. Brian Bloch, (1996) "Multilevel marketing: what's the catch?", Journal of Consumer Marketing, Vol. 13 Iss: 4, pp.18 – 26.
6. *Daryl Koehn*, (2001) "Ethical Issues Connected with Multi-Level Marketing Schemes", Journal of Business Ethics, Volume 29, Iss: 1-2, pp. 153-160.
7. Laura Salciuviene, James Reardon, Ville Auruskeviciene, (2011) "Antecedents of performance of multi-level channels in transitional economies", Baltic Journal of Management, Vol. 6 Iss: 1, pp.89 – 104.
8. Mohammed Laeequddin, G.D. Sardana, (2010) "What breaks trust in customer supplier relationship?", Management Decision, Vol. 48 Iss: 3, pp.353 – 365.
9. Pumela Msweli, Adrian Sargeant, (2001) "Modelling distributor retention in network marketing organisations", Marketing Intelligence & Planning, Vol. 19 Iss: 7, pp.507 – 514.
10. Rinita Sarker, (1996) "Pyramid Selling", Journal of Financial Crime, Vol. 3 Iss: 3, pp.266 – 268.
11. Zhizhong Jiang, Stephan C. Henneberg, Peter Naudé, (2010) "Exploring trust vis-à-vis reliance in business relationships: A qualitative analysis in the UK construction industry", Marketing Intelligence & Planning, Vol. 28 Iss: 6, pp.706-722.

WEBSITE:

1. http://www.amway.in/HomePage.aspx Accessed on 5th Jan 2014.
2. www.avon.com Accessed on 5th Jan 2014.

Empirical Study of Some aspects of Linkages between Foreign Direct Investment and Economic Growth in India

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Ram Gati Singh

Abstract : There is an extensive economic literature on trends of inflows of foreign direct investments (FDI), on their impact and their determinants in India. As may be well known know that FDI inflows have shown some erratic trends, if not consistently declining trends in post US sub prime crisis of 2008. The study tries to capture some of the trends in inflows of FDI and FIIs in India for the last 15-20 years since the ascendancy of neoliberal orthodoxy. The main objective of the study is to provide a robust and generalized empirical analysis and conclusions by employing data set on FDI, FIIs, GDP, Trade Openness Indicators, and Gross Public Sector Capital Formation (GPCF) a long time period. We have examined the economic linkages between the variables by employing graphical, tabular and regression analysis to find out the fact that it is the GPCF that emerges as the most substantively significant variable determining the inflows of FDI in India in the last twenty or so. We have found in our analysis the much talked indicators of fiscal deficit and trade openness explains very little of the variations in FDI over the duration of previous two decades. In the analysis of sectoral distribution of FDI in India the study clearly explains that top five economic centres accounts for more than three fourth of the total FDI inflows to India and this trend has been intact for the years 2008 and 2012, with Mumbai and New Delhi taken together, accounted for roughly 57% in 2008 and 53% in 2012 respectively. After analyzing briefly the steps taken by authorities, both fiscal and monetary, in India to ameliorate the recessionary trends following subprime crisis, the paper concludes that the role of monetary authority in India in managing liquidity and forex reserves, in conjunction with accommodation fiscal policy of the government, in the aftermath to contain the contagion and ensuing economic and financial repercussions were laudable and saved the economy from slipping into the grip of deep recession.

Keywords: Economic Growth, Empirical, Foreign Direct Investment, India, Liberalization.

INTRODUCTION

Investigations pertaining to determinants of economic well being are wide ranging in their theoretical drive, methodology pursued, and inferences derived. Despite being the basis for a wide body of research, very little consensus exists about what factors lead to improvement in enhancing the standard of living of the masses. However, there is near consensus among the economists that economic growth, as measured by annual increase in goods and services produced within a geographical boundary, are necessary, if not sufficient, condition for improving the wellbeing of the country.

The idea that increasing the size of the pie to be distributed should be accorded economic policy priorities, be it fiscal, monetary, trade or whatever, receives overwhelming support of the mainstream academia, media and policy maker alike. Among the major financial variable typified as the driver of ascendancy of growth figures in post liberalization period in India, financial liberlisation and the attendant flood of foreign direct investment have been the central point of discussion.

The cut throat competition for attracting foreign funds has resulted in rat race of providing priority status to multinational companies among developing countries by providing a vector of concessions and

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incentives over the years. Attracted by the strong fundamentals of these economies and anticipated profit making potential through investment in stock market, volatile financial funds in the form of financial institutional investment funds have poured in, though their flows have been erratic and opportunistic.

During the past two decades foreign direct investment (FDI) by multinational enterprises, particularly since the mid-eighties, has played a key role in the process of globalisation. Some noticeable changes in technologies, pervasive liberalisation of trade and investment regimes, and deregulation and privatisation of financial markets in developing countries like India have led to unprecedented FDI inflows into the country.

As is well known, capital formation is crucial determinant of economic growth, along with technological parameters embodies in capital-output ratio. While domestic investments add to the capital stock in an economy, FDI plays a complementary role in overall capital formation and in filling the gap between domestic savings and investment.

At the macro-level, FDI is a non-debt-creating source of additional external finances that does not affect the debt position of the country. At the micro-level, FDI is expected to boost output, technology, skill levels, employment and linkages with other sectors and regions of the host economy. Foreign direct investment is generally seen as a composite bundle of capital stock and technology, and Empirical literatures have shown that economic growth cannot be separated from R&D expenditure, and that the latter in turn is dependent on FDI and financial development. While rapid growth and high ratios of inward FDI to GDP tend to be witnessed together, causality mechanisms are not easily discernible through aggregate analysis because FDI is often associated with other growth-promoting factors, for example the ratio of investment to GDP and the degree of openness of the economy, among others determinants.

Apart from the issues of effectiveness and independent effects of FDI on economic growth and wellbeing, maintenance and sustainability of these flows becomes relevant points of discussion particularly during the periods of financial crises in the countries wherein these funds are coming from.

As empirical results from time series and cross country studies suggest, FDI inflows have shown consistent trends over the years. However, financial flows in the garb of foreign institutional investments (henceforth, FIIs) that also augment resource crunch of the firms, have shown highly erratic trends in the post financial liberalization period in developing countries, including India. These forms of 'hot' money "on wings" that flows in typically to exploit instant profit making opportunities and abruptly may leave the host country with all its attendant adverse impacts on financing and growth prospects.

It may be worthwhile to refer to the brief sketch of historical facts regarding growth, trade expansion and financial inflows in developing countries and elsewhere. The emerging and developing economies, typically Asian Countries registered a remarkable economic boom in the last five years immediately before the financial crisis that surfaced in 2007, growing at a staggering growth rate of 7% per annum. The boom was fueled by a mix of four ingredients prevailing in global markets: exceptional financing, high commodity prices and, for a significant number of countries, large flows of remittances. The rise of an alternative Asian engine, with China at the center, is a fourth element, which has had a strong influence on world trade and commodity prices.

These conditions have been replaced since mid-2008, particularly since September 2008, by the effects of financial turmoil that erupted in mid-2007 in the U.S. which has now become the worst global financial crisis and the worst recession since the Great Depression. For a year since the crisis erupted, commodity prices continued to boom. This factor, together with high foreign exchange reserves, helped to attract capital to emerging markets even after the outburst of the subprime crisis.

One of the key channels for transmission of the crisis from developed to developing countries is via private capital flows. The effects take place both through volumes and associated costs of such flows. However, vulnerability of developing countries to rapid deterioration in capital flows has been diminished by the fact that, as a result of their good policies and resulting strong macroeconomic fundamentals, many of these countries have far higher levels of foreign exchange reserves and lower levels of external debt than in the past. A word of caution here is warranted. On account of ever increasing extent of opening of

trade, dismantling of regulations, new sources of vulnerability have also opened up, such as the volatility of portfolio investments made into the growing domestic capital markets of developing countries.

It is in this context that the paper an empirical account of a theoretical debate and presents a critical understanding of the linkages between FDI, FIIs and economic growth, typically during the periods of economic recession following global financial turmoil. In following section II, the article analyses global trends in FDI inflows across country groups. With reference to India, we examine time series and spatial allocation of FDI flows across major urban centers in the pre and post periods of the global financial turmoil of 2007-08, precipitated by US subprime crisis.

Section III of the paper discusses empirical analysis based on secondary data sources regarding the extent and strength of linkages between GDP growth and FDI. FDI can provide direct financing for the acquisition of new plants and equipment, and be an important catalyst of economic restructuring. It can also directly transfer technology to foreign affiliates, as well as indirectly diffuse or "spill over" into local economies. While rapid growth and high ratios of inward FDI to GDP tend to be witnessed together, causality mechanisms are not easily discernible through aggregate analysis because FDI is often associated with other growth-promoting factors, for example the ratio of investment to GDP, and the degree of openness of the economy, among others determinants. In this context, and conditioned by the data availability, we will examine the relation between GDP growth, FDI, Public Sector capital Formation, Gross Savings ratio, trade openness indicators using regression analysis and other relevant tools.

Section IV will be concluding section summarizing the results and insights of the paper and the way forward to promote growth, the trickle down of which has been postulated as the necessary and sufficient conditions for improving well being of the masses and also to suggest ways and means to insulate the economy from the contagion and the ensuing economic repercussion. Before jumping to analysis contained in Section II of the paper, it is pertinent to delineate the objectives of the paper and the data and methodology applied to achieve the objectives.

I: OBJECTIVES AND METHODOLOGY

Central Theme of the Paper: The paper aims to investigate the trends and patterns of foreign financial inflows (FDI, Portfolio investment), before and after the US subprime crisis period. One of the central objective of the paper is to collate different arguments, proposition relating to the strengths of association between FDI and real sector variable, namely GDP growth.

Data and Methodology Ved: The paper relies exclusively on the secondary data set provided by UNCTAD in its World Investment Report and the data provided by Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Government of India on inflow of FDI and portfolio investment. Further, since the study investigates the extent of association of FDI with real sector variable, namely GDP, Savings Ratio, Gross Public Sector Capital Formation, Manufacturing Output, Incremental GDP, we have taken recourse to browsing relevant dataset from the websites of National Accounts Statistics,(Ministry of Statistics and Programme Implementation, GoI), Economic Survey 2012-13 published by Ministry of Finance, and Reserve Bank of India website and typically its annual publication namely ,A handbook of Statistics on India Economy. In order to make inferences about the degree of association between relevant variables under investigation, we used Tables, Charts and Regression Analysis.

II: PATTERNS AND TRENDS OF FDI INFLOWS: GLOBAL AND INDIA SPECIFIC ANALYSIS

Global Patterns and Trends in FDI

Before deliberating upon the empirical trends in financial flows after the US sub prime crisis in 2007-08, it may be worthwhile to recall some macro-economic arguments in favour of foreign funds in general, and foreign direct investments in particular. Indeed, foreign inflow of funds to host countries is like walking on a tight rope and this analogy typically valid for short term bank lending and portfolio investments in stock markets and mutual funds.

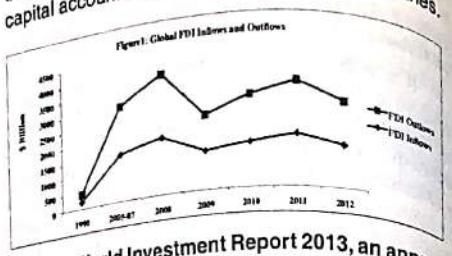
As is well known from the two-gap analysis, a

country's development depends on domestic and external financing. Developing countries have many developmental needs, and they often have a savings or trade gap. In an economy in equilibrium, it is an accepted identity that savings equals investment (S = I). However, economies are seldom in equilibrium, and in a developing economy, a shortfall normally exists between savings and the desired level of investment, which countries seek to fill by capital inflows. As such, external financing is important for economic and social development.

Clearly, since the early 1980s, private capital flows, particularly foreign direct investment (FDI), have grown at a phenomenal rate. FDI has become an important source of private external finance for developing countries. It is distinct from other major sources of external private flows in that it is guided largely by investors' long-term prospects of making profits from production activities that they control. Foreign bank lending and portfolio investment, in contrast, are invested in activities which are often motivated by short-term profit considerations. These investments can be influenced by a variety of factors (e.g. inflation expectations, fiscal and trade imbalances, monetary policy vectors including interest rates), and they are prone to herd behavior.

In so far as financial flows at global upto the period of onset of financial crisis of 2007-08 is concerned, since 1990, private flows had increased by almost tenfold in 2007, whereas official flows had more or less remained static. The growth spurt was continuous, until the Asian and Latin American crises in 1997 and 2001, where private capital to developing countries started to slow down. Investors and equity, debt, and bond holders liquidated their holdings, resulting in a huge capital outflow. But as developing economies started to recover, private flow increased again, until 2008, when the U.S. and European crises had investors withdrawing from developing countries.

As may be evident from the following chart showing trends in global FDI inflows and outflows (both in billion USD), there was a sharp rise in FDI inflows during period between 1990 and 2008. However, since the onset of US subprime crisis in 2007-08, FDI inflows plummeted dramatically in 2009. Since 2009, it has recovered. However, the pace of recovery is not sufficient enough to cover the lost ground in one year. As may be seen from the chart below, in 2012, it was well below the level achieved in 2008. The same trend was observed in outflows, though with less dramatic downturns owing to some capital account restraints imposed in host countries.



Source: World Investment Report 2013, an annual publication of UNCTAD

As per World Investment Report 2013, an annual publication of UNCTAD, Foreign Direct Investment (FDI) fell by 18 per cent to $1.35 trillion in 2012. This massive turn down was in sharp contrast to other key macro-financial economic indicators such as GDP, trade and employment, which all recorded impressive growth at the global level. Economic vulnerability and policy paralysis in a number of large economies gave rise to bearish behaviour among investors. Furthermore, many MNCs re-sketched their investments contours overseas, including through restructuring of assets, divestment and relocation. The path of FDI recovery is, thus, on a sticky terrain and hence proving rough and recovery may take longer duration than anticipated and desired.

Trends and Patterns of FDI: Indian Context

FDI flows to developing economies proved to be much more resilient than flows to developed countries, recording their second highest level – even though they declined slightly (by 4 per cent) to $703 billion in 2012. They accounted for a record 52 per cent of global FDI inflows, exceeding flows to developed economies for the first time ever, by $142 billion. The global rankings of the largest recipients of FDI also reflect changing patterns of investment flows: 9 of the 20 largest recipients were developing countries with India being placed at rank 15.

Trends in inflows and outflows of FDI in India are presented the table given below. As is evident from the table, there is no noticeable pattern of decline in FDI during the post subprime financial crisis period. Financial outflows from the country are also erratic and show no discernible increasing trends in the post crisis period. In may be pertinent to here that despite

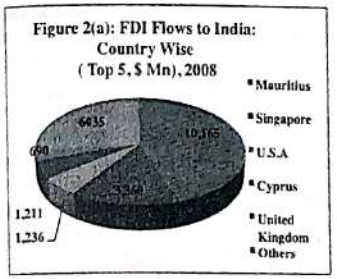
range of financial liberalization policies put in place, there still exist substantial capital account controls and this fact is, in the main, accountable for India being able to withstand financial crunch to the extent experienced by other developing and developed economies who had embarked on a fully fledged mission of full capital account convertibility policy regime.

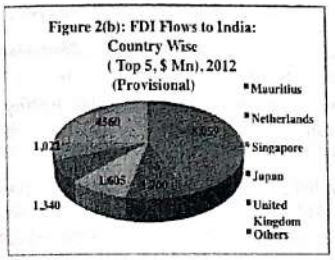
Table1: FDI in India: Some Recent Trends during 2007-2012 (Millions of dollars)

	Inflows	Out flows	Net	in flows	In flows	Out flows	Net flows
2007	25350	17234	8116	2010	21125	15933	5192
2008	47139	21147	25992	2011	36190	12456	23734
2009	35657	16031	19626	2012	25543	8583	16960

Source: Handbook of Statistics on Indian Economy, Reserve Bank of India

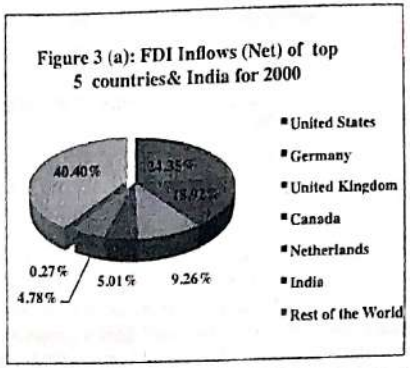
The following charts depict largest home countries which contribute substantially to FDI inflows in some recent most years. As is obvious from the chart, Mauritius, Singapore, Japan, UK, US, Netherlands and more recently Cyprus are the biggest contributors to FDI inflows in 2008 and 2012.

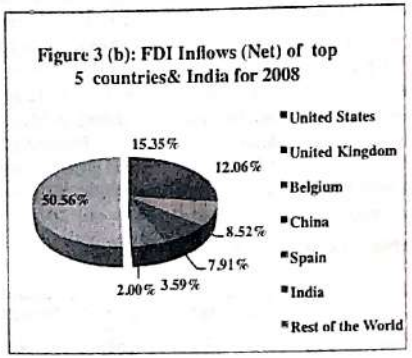




Source: Handbook of Statistics on Indian Economy, Reserve Bank of India

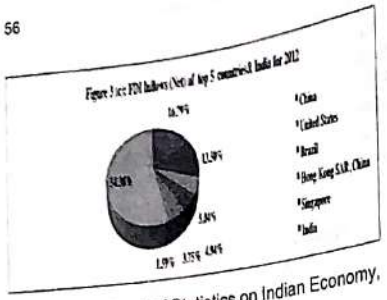
The following pair of charts reflects shares in total FDI to India and different other major countries. As can be seen, US with a share of 50.56% in 2008 and 40.4% in 2000 remain the largest FDI recipient, while UK, Germany, Canada, Netherlands, China, Spain and Belgium are the among the top FDI inflows destinations.





Source: Handbook of Statistics on Indian Economy, Reserve Bank of India

The chart given below shows the most recent trends in net FDI inflows, and the configuration now changes substantially with China becoming the largest recipient of FDI with a staggering share of 16.79% in 2012 while the United States being pushed at distant second place with a share of 13.5%. Brazil (5.04%), Hong Kong, SAR (4.94%), Singapore (3.35%), are among the top 5 destinantions of FDI inflows in 2012. India with a share of 1.59 % remains stranded at 15th rank in the ordering.



Source: Handbook of Statistics on Indian Economy, Reserve Bank of India

In so far as the spatial distribution of FDI inflows across regions in India concerned, patterns and trends remained intact in the post crisis period with Maharashtra, Delhi and NCR region, Karnataka, Gujarat, Tamil Nadu, Andhra Pradesh being the most favored destinations during the period between 2008-09 and 2012-13. These six states taken together, accounted for 81%, 84%, 69% and 61% in financial years 2008-09, 2009-10, 2010-11 and 2011-12 respectively.

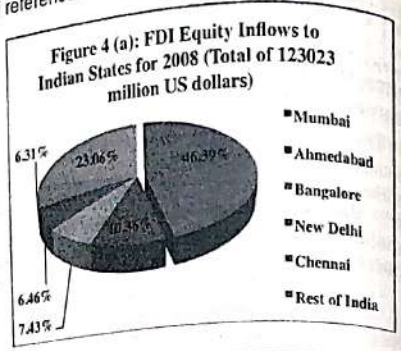
It is evident that the most backward regions of country, namely the so called BIMAROU states have not so far been able to receive FDI inflows corresponding to their developmental and financial needs. It may be pertinent to note here that Bihar, Odisha, Himachal Pradesh are fastest growing (as measured by GDP growth rate figures) regions of the country in some recent years.

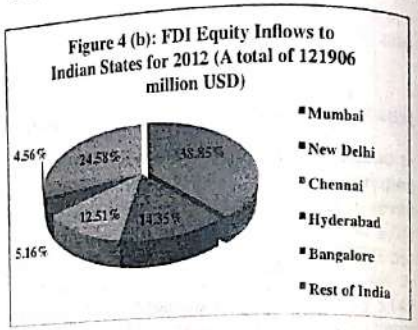
Table2: FDI Equity Inflows to Indian States (US $ million)

	2008-09	2009-10	2010-11	2011-12
Maharashtra	12,431	8,249	6,097	9,553
Delhi	1,868	9,695	2,677	7,983
Karnataka	2,026	1,029	1,332	1,533
Gujarat	2,826	807	724	1,001
Tamil Nadu	1,724	774	1,352	1,422
Andhra Pradesh	1,238	1,203	1,262	848
Subtotal Top 6 States in Total FDI in India	22,113	21,757	13,444	22,340
Share of Top 6 States in Total FDI in India	81	84	69	61
Total	27,332	25,834	19,427	36,504

Source: Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry

The chart given below shows distribution of FDI inflows in India across major urban centres in 2008 (with a total FDI equity inflow of USD 123023.00) and 2012 (with a total of USD 121906.00). Mumbai and New Delhi taken together, accounted for roughly 57% in 2008 and 53% in 2012 respectively. Chennai, Hyderabad, Bangalore and Ahmadabad being placed in the order mentioned for the two suggested years of reference.





Source: Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry

The follwing table presents trends in shares in total FDI inflows of different metropolitan centres in India for the years 2008 and 2012. The top five centres accounts for more than three fourth of the total FDI inflows to India and this trend ha been intact for the years 2008 and 2012.

Table 3: FDI Equity Inflows to Indian States

Top 5	% Share	2008-09 (Rs crore)	Top 5	% Share	2012-13 (Rs crore)
Mumbai	46.39	57066	Mumbai	38.85	47359
Ahmedabad	10.36	12,747	New Delhi	14.35	17,490
Bangalore	7.43	9,143	Chennai	12.51	15,252
New Delhi	6.46	7,943	Hyderabad	5.16	6,290
Chennai	6.31	7,757	Bangalore	4.56	5,553
Rest of India	23.06	28,367	Rest of India	24.58	29,962
Total	100	123023	Total	100	121906

Source: Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry

Notes: 1. FDI Equity Flows includes equity capital component only. 2. Delhi includes New Delhi, and part of UP and Haryana; Chennai includes Tamil Nadu and Pondicherry; Mumbai includes Maharashtra, Dadra & Nagar Haveli and Bangalore includes KarnatakaDaman & Diu; Ahmedabad includes Gujarat; Hyderabad includes Andhra Pradesh

It is relevant to note here that that these mesmerisingly inequitous trends in FDI inflows in India across regions is neither surprising nor is a new phenomena. A study of Morris (2004) clearly spell out that in India, FDI equity flows are concentrated in a few states. Of the total approved FDI flow, Maharashtra had accounted for the largest proportion with 46 per cent, followed by Gujarat with 15 per cent, and Delhi with 7.7 per cent in 2004. Other states with significant and large investments were Andhra Pradesh, Karnataka and Tamil Nadu.

More interestingly, among these states, only a few cities were involved in getting a significant amount of FDI.

The geographical distribution of FDI inflows in India is highly skewed in favour of relatively large cities including, apart from top guns of Mumbai and New Delhi, Ahmedabad, Bangalore, Kolkata, Chennai, Coimbatore, Goa, Hyderabad, Jamnagar, Kancheepuram, Mumbai, Pune and Raigarh, indicating that.

It may be clarified in this context that for all investments, it is these metropolitan centres that have the comparative and locational advantage in being the headquarters of the country operations of MNCs, thereby attracting the the significant chunk of FDI. Studies by various authors suggest that there are opportunities to be exploited by attracting FDI, especially in services and high-tech skilled labour-seeking industries.

Similrly, Aggarwal (2007) has shown that there are wide variations in the FDI inflow across the states of India. In his study on trends and distribution of FDI across Indian states, spanned over the entire decade of 1990s, he found that top seven states accounted for over 97 per cent of the total amount of export-oriented FDI and 83 per cent of total FDI approvals during 1991-2001.

The presence of Export Processing Zones was found to be a relevant pull factor in attracting export-oriented FDI. Further, while explaining the sensitivity of FDI to labour market conditions, the study revealed that labour market rigidities and labour costs are more pronounced for export-oriented FDI than for domestic market-seeking FDI.

III. ANALYSING THE ALLEGED LINKAGES BETWEEN FDI AND GROWTH: SOME THEORETICAL ARGUMENTS AND EMPIRICAL EVIDENCES

Before analysing the linkages of FDI with GDP growth in general, manufacturing sector and services sector growth in particular, it may be worthwhile to notice some recent efforts of attracting FDI by government of India in the aftermath of US subprime crisis and the ensuing recession which spread in length and breadth worldwide.

In some recent years, to counter adverse implications of worldwide recession attendant to US subprime crisis of 2007-08, to encourage foreign direct investment, India stepped on to further liberalization measures in a whole gamut of industries ranging from civil aviation, broadcasting, single and multi-brand retail trading, power exchanges, to foreign-owned non-banking financial companies, It also designed, at least in principle to a mechanism for FDI to and from Pakistan. It also raised the foreign ownership ceiling for FDI in asset construction companies from 49 per cent to 74 per cent, subject to certain conditions.

As has been the case in past years, Indian FDI liberalization and promotion policies dominated and targeted specific services, including wholesale and retail services and financial services. Between 2003

and 2012, on average approximately 68 per cent of all sector-specific liberalization and promotion policies have related to the service sector. In 2012, this development was most apparent in India, which relaxed FDI regulations in several industries. FTA between the EU and India, under negotiation since 2007, is expected to include a substantive investment protection chapter (also following the post-Lisbon approach).

Similarly, to garner more FDI inflows and revive electronics industry which a large market potential in India, the Indian Government has strengthened its efforts to attract FDI by establishing industrial zones for investors from particular countries within the Delhi-Mumbai Industrial Corridor (DMIC). Leveraging public funds from foreign countries, these bilateral efforts may result in an increasing amount of FDI inflows to industries such as electronics in India in the years to come.

More specifically, in February 2013, an agreement was reached between the Governments of India and Japan on the establishment of a special economic zone for Japanese electronics companies within the DMIC, most likely in Neemrana, Rajasthan proposed to be India's first industrial park officially established for firms in a single industry, as well as from a particular country. UNCTAD, 2013)

It may be mentioned here that Japan's FDI stock in India is larger than that of the Republic of Korea, but in the electronics industry, Japanese companies have lagged far behind their Korean counterparts in the Indian market. The establishment of the zone may help Japanese electronics companies expand their presence in India and narrow the gap with Korean companies. In the meantime, the Republic of Korea tried to enhance its first-mover advantages. In March 2013, the Korea Trade-Investment Promotion Agency signed a Memorandum of Understanding with the Rajasthan State Industrial Development and Investment Corporation, setting up an industrial zone in Neemrana dedicated to Korean companies. It is expected to attract considerable FDI flows from the Republic of Korea in the near future. Furthermore, the Government of India recently invited the Czech Republic to invest in an industrial zone in India. In this case, the targeted industry is automotives, in which the Czech Republic has established a strong competitive position. (UNCTAD, 2013)

There have been surge in FDI inflows after the opening up of the single-brand segment of the retail industry. The change in Government policies on the multiple-brand segment demonstrates that policymaking concerning inward FDI is at a crossroads in India. With the opening up of this segment, more FDI is expected in the retail industry. This demonstrates the Government's efforts to bring in more FDI to the country. Thus the government has taken giant steps in its stride to invite FDI as much as possible. It will be interseting to investigate whether such invitations to FDI are warranted in the face of current socioeconomic conditions and macro-economic scenario.

On the monetary policy front, in order to prevent the economy from sliding into the grip of massive recession the Reserve Bank of India took variou steps including reduction in lending rates to banks, adjustments in resource mobilisation through MSS, LAF which increased liquidity into the market and thesesteps to a certain extent amaeliorated the ensuing credit situation of the Indian firms and investors. In so far as fiscal stimulus to the economy is concerned, the Government of India slashed excise duties on various items of significance and provided a direct boost to the economy by spending more on infrastructure and social sectors. The fiscal stimulus and the accomodating monetary policy to manage liquidity and the cost of credit helped economy to maintain its pace of growth, though it slowed down on account of the natural process of business cycles.

The table given below shows the trends in growth and shares of various sub components of service sector vis-à-vis material producing sectors of agriculture and industry taken together. The hallmark of the Indian growth story in the later part of the liberalization has been the inflating growth of the service sector most prominent component being communication, financing, insurance, real estate, & business services, banking & insurance and construction sector. This spectacular growth of service sector has slowed down in most recent years, not as result of recession worldwide alone, but may possibly be result of downswing of the regular business cycle. Whatever be the underlying factors of mesmerizing growth of service sector in the decade of 2000-102, growth in material producing sector was consistently low, at least when compared with growth figures of the service sector. As may be evident from the figures provided in the table given below, service sector indeed has been the engine of growth and roughly 80 % of the GDP growth can be explained

by growth in service sector, while industry and agriculture sector taken together explains about 20% of the growth in GDP. It may be distressing to note that material producing sectors employs roughly 80% of the work force and growth of the Indian is disproportionately explained and contributed by service sector which accommodates only 20 % of the workforce. Such a skewed pattern of growth and the colossal disconnect of such growth from the employment situation begs some uneasy questions.

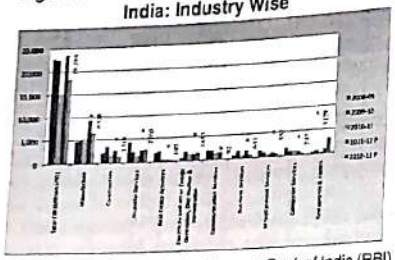
Table 4: Share and Growth of India's Services Sector and Material Producing Sectors (at factor cost)

	2000-01	05-06	06-07	07-08	08-09	09-10	10-11	11-12	2012-13
Trade, hotels, & restaurants: Share	4.6	16.7	17.1	17.1	16.9	16.5	17.2	18	25.1
Growth	5.2	12.2	11.1	10.1	5.7	7.9	11.5	6.2	5.2
Trade: Share	13.3	15.1	15.4	15.4	15.3	15.1	15.7	16.6	
Growth	5	11.6	10.8	9.8	6.7	8.5	11.5	6.5	
Hotels & restaurants: Share	1.3	1.6	1.7	1.7	1.5	1.4	1.5	1.5	
Growth	7	17.4	14.4	13	-3.3	1.9	10.8	2.8	
Transport, storage & communication: Share	7.6	8.2	8.2	8	7.8	7.7	7.3	7.1	
Growth	9.2	11.8	12.6	12.5	10.8	14.8	13.8	8.4	
Railways: Share	1.1	0.9	0.9	1	0.9	0.9	0.8	0.7	
Growth	4.1	7.5	11.1	9.8	7.7	8.8	5.9	7.5	
Transport by other means: Share	5	5.7	5.7	5.6	5.5	5.3	5.3	5.4	
Growth	7.7	9.3	9	8.7	5.3	7.3	8.2	8.6	
Storage: Share	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Growth	6.1	4.7	10.9	3.4	14.1	19.3	2.2	9.4	
Communication: Share	1.5	1.6	1.5	1.4	1.4	1.4	1.1	0.9	
Growth	25	23.5	24.3	24.1	25.1	31.5	25.4	8.3	
Financing, insurance, real estate, & business services: Share	13.8	14.5	14.8	15.1	15.9	15.8	16	16.6	17.2
Growth	4.5	12.6	14	12	12	9.7	10.1	11.7	8.6
Banking & insurance: Share	5.4	5.4	5.5	5.5	5.6	5.4	5.6	5.7	
Growth	-2.4	15.8	20.6	16.7	14	11.4	14.9	13.2	
Real estate ownership of dwellings & business services: Share	8.7	9.1	9.3	9.6	10.3	10.4	10.4	10.8	
Growth	7.5	10.6	9.5	8.4	10.4	8.3	6	10.3	
Community, social & personal services: Share	14.8	13.5	12.8	12.5	13.3	14.5	14	14	14.3
Growth	4.6	7.1	2.8	6.9	12.5	11.7	4.3	6	6.8
Public administration & defense: Share	6.6	5.6	5.2	5.1	5.8	6.6	6.1	6.1	
Growth	1.9	4.3	1.9	7.6	19.8	17.6	0	5.4	
Other services: Share	8.2	7.9	7.6	7.4	7.5	7.8	7.9	7.9	
Growth	7	9.1	3.5	6.3	7.4	7.2	8	6.5	
Construction: Share	6	7.9	8.2	8.5	8.5	8.2	8.2	8.2	8.2
Growth	6.1	12.8	10.3	10.8	5.3	6.7	10.2	5.6	5.9
Total Services: Share	50.8	53.1	52.9	52.7	53.9	54.5	54.4	55.7	56.5
Growth	5.4	10.9	10.1	10.3	10	10.5	9.8	8.2	6.6
Total Services (incl. Construction): Share	56.8	61	61	61.2	62.4	62.7	62.6	63.9	64.8
Service sector Growth	5.5	11.1	10.1	10.3	9.4	10	9.8	7.9	6.5
Total GDP: Share	100	100	100	100	100	100	100	100	100
GDP Growth Rates	4.3	9.5	9.6	9.3	6.7	8.6	9.3	6.2	5
GDP Growth explained by Service sector Growth	3.12	6.77	6.16	6.3	5.87	6.27	6.13	5.05	4.212
% of GDP Growth explained by Service sector	72.65	71.3	64.18	67.78	87.55	72.91	66	81.42	84.24
% points of GDP growth explained by material producing sectors (Agriculture and Industry)	1.18	2.73	3.44	2.99	0.83	2.33	3.17	1.15	0.79
Growth rates in Agriculture + Industry, taken together	2.72	7	8.82	7.72	2.22	6.25	8.46	3.19	2.24

Source: Based on Economic Survey 2012-13, Ministry of Finance, Government of India.

Before analyzing the strength of association and connect between FDI and various macroeconomic variable including savings ratio, GDP growth, public sector capital formation, manufacturing output, it may be pertinent to discuss at least very briefly the sectoral distribution of FDI across various sectors of the economy. As per the dataset of Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, out of total equity FDI inflows of USD 18286 Million, manufacturing sector accounted for USD 6528 Million, followed by Restaurants and Hotels (3129 Million USD), financial services (2760 Million USD), Electricity and other forms of energy (1653 Million USD), construction (1319 Million USD). As may be seen from the table given below, this pattern of sectoral distribution has remained intact barring the figures for Restaurants and Hotels which has increased in proportion very recently, while real estate activities and computer services have attracted progressively smaller amounts of FDI over time.

Figure 5: Foreign Direct Investment Flows To India: Industry Wise



Source: Handbook of Statistics, Reserve Bank of India (RBI).

Theoretical and Empirical Approaches to Investigating the linkages between Foreign Direct Investment and other Macroeconomic Variable of Relevance

At the theoretical level, as the complementarity between domestic and foreign, adequate levels of human capital, open trade regimes, and well developed financial markets have been identified as core variables that led to synergistic relationship between FDI and growth (Alfaro, 2003). FDI in manufacturing is generally believed to have a positive and significant effect on a country's economic growth (Alfaro, 2003). However, based on empirical analysis of data from cross-country FDI flows for 1981-1999, the author points out that the impact of FDI on growth is ambiguous. FDI in the primary sector tends to have a negative impact on growth, while investment in manufacturing has a positive effect, and the impact of FDI in services is ambiguous.

Borenzstein et al., 1998 suggest that FDI plays more of a complementary role than of substitution for domestic investment as FDI may be viewed as an important source for diffusion of technology and new ideas. FDI tends to expand the local market, attracting large domestic private investment. This "crowding in" effect creates additional employment in the economy. (Jenkins and Thomas, 2002). Further, FDI has a strong relation with increased exports from host countries. FDI also tends to improve the productive efficiency of resource allocation by facilitating the transfer of resources across different sectors of the economy (Chen, 1999).

In so far as Indian study is concerned, Bajpai (2004) study shows that India's labour-intensive manufacturing can potentially absorb a major section of the labour force and it holds the key to achieve dynamic growth in the country. At a different level, Aggarwal (2001) showed that high-tech industries are not attracting efficiency-seeking FDI; medium- and low-tech industries with foreign stakes seem to have performed better, indicating that India's comparative advantage in exports lies with low-tech industries. However, Siddharthan and Nollen (2004) showed that in the information technology sector, exports by MNE affiliates are greater when they have larger foreign equity stakes.

In order to examine the strength of relationship between FDI and other relevant macroeconomic variables we have applied regression analysis based on the FDI and other relevant data for the last 20 years. As may be evident from the regression output table given below where we have regressed GDP at Market Prices (current prices) on FDI, Portfolio investment and gross public sector capital formation data, we find that each of the three explanatory variables influences GDP with coefficients being (-)0.8442 for FDI, (-)0.0864 for portfolio investment and (+)1.85778 for public sector capital formation. Given the t-values, it may be claimed that FDI and Portfolio affect GDP negatively and public sector capital formation affects GDP positively. For one unit increase in public sector capital formation, GDP rises by 1.84 times. This is quite remarkable result. It becomes all the more significant as in current debates on growth and welfare, the role of public sector is being relegated to the backburner and catchy discussions on FDI and related topics overshadows every thing else. In fact, for increasing GDP and welfare, public sector investment, which invites further investment still holds the key.

Summary Output 1: Regression of GDP at Market Prices (t current prices) on FDI , Portfolio Investment, Public Sector Capital Formation

Regression Statistics		ANOVA						
Multiple R	0.996		Df	SS	MS	F	Significance F	
R Square	0.992	Regression	3	2.9585E+12	9.86166E+11	812.304	3.14405	
Adjusted R Square	0.99104	Residual	19	23066656778	1214034567			
Standard Error	34842.9988	Total	22	2.98156E+12		Observ-ations	23	
	Coefficients	Standard Error	t Stat	P-value	Lower	Upper 95%	Lower 95%	Upper 95.0%
95.0%								
Intercept	10165.033	14762.013	0.6885	0.4994	-20732.21	41062.282	-20732.21	41062.3
FDI	-0.8442	0.3964	-2.12	0.04652	-1.6741	-0.014401	-1.674	-0.014
Portfolio Investment	-0.0864	0.22819	-0.37	0.708	-0.564	0.391	-0.564	0.3911
Gross Capital Formation by Public Sector	1.85778	0.13606	13.6532	2.844	1.572	2.142	1.572	2.142

In almost every forum of discussion, be it academia, print or electronic media, FDI is proclaimed as the necessary ingredient for any policy vector designed to fight recession in manufacturing sector in India. In order to estimate the coefficient of association between manufacturing output and FDI for the last 20 years in India, we regressed log of manufacturing output on log of FDI. As may be evident from the coefficient estimated, the responsiveness (elasticity) of manufacturing for a one percent change in FDI inflows is 0.3981, far below from unity. Thus we have arrived at statistically significant result that, though the association remains positive, the strength of statistical connect between FDI and manufacturing output is far from being one-to-one.

Summary output 2: Regression of Log Manufacturing on Log FDI

Regression Statistics		ANOVA					
Multiple R	0.959694		df	SS	MS	F	Significance F
R Square	0.921012	Regression	1	13.8411302	13.84113	244.8632	4.75E-13
Adjusted R Square	0.917251	Residual	21	1.1870453	0.056526		
Standard Error	0.237752	Total	22	15.0281755			
Observations: 23							
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	
Intercept	8.87532	0.2523	35.17824	3.748	8.350643	9.4	
Log (FDI)	0.3981	0.0254	15.64811	4.74585	0.34521	0.45	

In order to study the major determinants of FDI in India, we run a regression, taking FDI as the dependent variable and gross savings, exports and annual addition to GDP at market prices as explanatory variables. We see from the regression result provided in the output table 3 below, exports and incremental GDP negatively affect FDI, though the result is statistically insignificant. However, gross savings positively affect FDI, with coefficient of 0.126455 and this statistical association is statistically significant. The strength of relation is statistically significant. The plausible explanation of this finding is that domestic savings, in the main finances domestic investment and domestic investments in turn provides a platform for foreign funds to engage in economic activities in the host country and reap the benefits.

Summary Output 3: Regression of FDI on Gross Savings, Exports, Incremental GDP

Regression Statistics		ANOVA	df	SS	MS	F
Multiple R	0.924424					
R Square	0.854559	Regression	3	7.63E+10	2.54E+10	35.2539
Adjusted R Square	0.830319	Residual	18	1.3E+10	7.22E+08	
Standard Error	26868.27	Total	21	8.93E+10		
Observations: 22						

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-16729.1	10061.33091	-1.66271	0.113684	-37867.2	4408.959
Gross Savings	0.126455	0.046150225	2.740073	0.013454	0.029497	0.223413
Exports	-0.076	0.065571109	-1.15899	0.261605	-0.21376	0.061764
Incremental GDP at market prices	-0.06253	0.071758989	-0.8714	0.395009	-0.21329	0.088229

Thus, going by the results of the existing study, one may claim that the impact of FDI on the economy is still not clear and there is little evidence on the economy-wide impact of FDI in India. However, there is great interest among academics and policy makers to critically examine the impact of FDI on the different sectors of the economy and various regions of the country. Infrastructure and regional development are found to be key factors in attracting higher FDI, both in the export and domestic market-seeking sectors.

IV. TOWARDS DIAGNOSIS OF INSULATION OF INDIA FROM CONTAGION OF FINANCIAL CRISIS AND THE WAY FORWARD

While majority of the open economies were feeling the heat quite ostensibly in the aftermath of global meltdown following US subprime financial crisis, India, however, was less affected than others solely on the back of the domestic demands, strict banking rules and vigilant monetary, credit and fiscal policies. The banking system in India is regulated and is under constant watch of the monetary authority. The government of India and RBI responded to the challenge strongly through its fiscal and monetary policies mutually accommodating one another. The government has introduced three fiscal stimulus packages. These are expanded safety- net programme for the rural poor, the farm loan waiver package and payout following the Sixth Pay Commission report for stimulating demand in the economy.

As a buffer measure to remain insulated from the repercussions and contagion of the global financial crisis, appropriate monetary and fiscal policy responses to ensure enough liquidity in the economy, the orderly functioning of markets and the financial stability are required. On the other hand in aftermath of the turmoil caused by bankruptcy in the US, the

Reserve Bank has announced a series of measures to facilitate orderly operation of financial markets and to ensure financial stability, which predominantly includes extension of additional liquidity support to banks. This had been facilitated by the suitable use of a range of instruments available for liquidity management with the Reserve Bank such as the Cash Reserve Ratio (CRR), which was reduced to 5% in July 2009 from 9% in August 2008 and Statutory Liquidity Ratio (SLR) stipulation and Open Market Operations (OMO) including the Market Stabilization Scheme (MSS) and Liquidity Adjustment Facility (LAF). Reduction in the repo rate (the rate at which RBI lends to the banks) from 9% as on October 2008 to 4.75% in July 2009 and the reverse repo-rate (RBI's borrowing rate) reduced to 3.25% in July 2009 from 6% as on October 2008 in order to improve the flow of credit to productive sectors at viable costs so as to sustain the growth. Furthermore, money market liquidity is also impacted by our operation in the foreign exchange market, which in turn, reflects the evolving capital flows. The existing set of monetary instruments has thus, provided adequate flexibility to manage the evolving situation. So the financial sector has emerged without much damage thanks in part of our strong regulatory framework and in part on account of most of the nationalized banking sector.

After a long spell of growth, the Indian economy is experiencing a downturn. Industrial growth is faltering, inflation remains at double-digit levels, the current account deficit is widening, foreign exchange reserves are depleting and the rupee is depreciating. The last two features can also be directly related to the current international crisis.

As has been the experience of every financial meltdown in recent years, the magnitude of the current crisis is distinctly associated with scanty regulation and supervision of banks and financial markets. Since the 1997 East Asian crisis, it became visibly clear that financial liberalization must be accompanied by stronger prudential regulation and supervision. This lesson was applied in many parts of the developing world but, paradoxically, was largely ignored in the United States and the United Kingdom, where liberalization was accompanied by deregulation and weak supervision of financial intermediation (Stiglitz, 2008). In this context, the role of monetary authority in India played in the aftermath to contain the contagion and ensuing economic and financial repercussions becomes all the more laudable.

SELECT BIBLIOGRAPHY AND REFERENCES

Abdur Chowhury, Goerge Mavrotas (2003), 'FDI and Growth: What Causes What?', WIDER Conference on Sharing Global Prosperity, Helsinki.

Baldacci, E. and Kumar, M. (2010), 'Fiscal deficits, public debt and sovereign bond yields', IMF Working Paper 10/184.

Barrell, R., Fic, T. and Liadze, I. (2009), 'Fiscal policy effectiveness in the banking crisis', *National Institute Economic Review*, 207.

Bende- Nabende, Anthony. (1998), 'A Static Analysis of the Impact of FDI on the Host Development Countries' Economic Growth: A case for the ASEAN-5 Economies. ', ESRC Conference on Finance and Development, Birmingham, UK.

Demelo, Luiz R.Jr. (1999), 'Foreign Direct Investment-Led Growth: Evidence from Time Series and Panel Data', Oxford Economic papers, 1999, 51(1).

Economic Survey (2010-11), Department of Economic Affairs, Ministry of Finance, Government of India, New Delhi

Graham, Edward H. (1995), 'Foreign Direct Investment in the World Economy', IMF Working Paper WP/95/59. Washington, D.C.

Hand Book of Statistics on Indian Economy (2013), Reserve Bank of India.

International Monetary Fund (2012), 'Global Financial Stability Report', Washington D.C. October

Jenkins Carolyn, Lynne Thomas (2002), 'Foreign Direct Investment in South Africa: Determinants, Characteristics and Implications for Economic Growth and Poverty Alleviation', Center for the Study of African Economies. University of Oxford.

Kohli, Atul (2009) 'Politics of Economic Growth in India, 1980-2005, Part II: The 1990s and Beyond' in Atul Kohli, *Democracy and Development in India, From Socialism to Pro-Business*. New Delhi: Oxford University Press, 164-185.

Krenn, R., and Gordon, R. (2010) 'The end of the great depression 1939-41: Policy contributions and fiscal multipliers'. *NBER Working Paper* 16,380.

Rodrik, Dani (2001) 'The Global Governance of Trade as if Development Really Mattered'. UNDP, New York.

Virmani, Arvind (2003) 'India's External Reforms: Modest Globalisation Significant Gains'. Economic and Political Weekly, Vol. XXXVII No. 32, pp. 3373-3390.

Major Controversies Relating to FDI in Multi Brand Retailing and its Policy Implications: An Analysis

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Abstract : With the ongoing wave of globalistaion, the companies are overhauling their approach to business practices worlwide in order to address the Opportunities and Challenges presented by the Multi Polar World. Therefore they are moving from conventional business practices to more geographical flexible approach and are aligning their strategies to the external environment. It is believed that Foreign Investment is a key component in the economic growth of any developing country. Foreign Direct Investment (FDI) truly act as catalyst in this context. Indian Retail Sector carry a large prospective for attracting FDI as it is expected to grow three times the current levels.i.e.660 US billion $ by 2015.Large Format Retailers have diminished the idea of "*Grow local and sell local*". But the latest move by the Indian government to allow 51% FDI in Multi Brand Retailing has attracted a huge debate in the country. It has been argued that the reforms will result in greater benefits to the economy, consumers and farmers but the concerns have been raised by some political parties and trade associations that the outcome would be opposite. *Henry Ford, the genius inventor said, "Don't find fault, find a remedy". This axiom reverberates ever so relevantly in today's Indian retail sector scenario like never before.* In this context, the present paper makes a modest attempt to analyse the controversial issues concerning the influx of FDI in multi brand retailing and also highlights the challenges and threats to all the players involved in it. This paper also reviews that adequate safeguards should be build by the Indian government so that it does not end up in losing proposition.

Keywords: Foreign Direct Investment, Retail Industry, Organised Retail Industry, Unorganised Retail Industry, Single Brand Retailing, Multi Brand Retailing, E-Retailing Major Controversies Relating to FDI in Multi Brand Retailing and its Policy Implications: An Analysis.

INTRODUCTION

India is a land of Retail Democracy which is characterized by High level of Livelihood through Employment, High level of Self Organisation, Low Capital Input and High Level of Decentralisation. India is the fifth largest Retail Market Globally. Retail contributes approx from 14%-15% of India's GDP.India has highest Retail Density in the World with 15 million Outlets. A T Kearney, an international management consultancy firm, has acknowledged India as one of the uppermost retail destinations. According to Technopak the Indian Retail economy is jump to mature to US$ 94.4 billion by FY12 and India has all the prospective needed to sustain this growth. According to a study conducted by PWC, Indian Retail Market currently stood at US $ 400 billion in 2009-10 which is approximate to reach US $ 573 billion by 2012-13 and is growing 30%-40% per annum.The India retail market is estimated at US$ 470 Billion in 2011, contributing for 35% of GDP and is expected to rise to US$ 675 Billion by 2016.The trend and the expected Total Retail Market and Organised Retail Market in India is exhibited in Graph 1 and Graph 2.

Research Scholar
Research Scholar, IGNOU
Research Scholar, Singhania University

Graph 1

Graph 2

Indian Retail Industry is divided into two sectors: Organised and Unorganised Sector. Indian retail market is highly dominated by decentralized unorganized market, which accounts for about 95% of the sales. The share of organized retailing in India, at around 2%, is too near to the ground, compared to 80% in the USA, 40% in Thailand, or 20% in China, thus leaving the huge market prospective largely intact. But, organised retail industry is one of the budding sectors with massive growth potential and with its emergence; Indian economy is surely going to gain from well capitalized retail industry. Since 1991, Due to Globalisation and Liberalisation, Retail Industry has grown exponentially in form of Foreign Direct Investment (FDI). Foreign Investment in India is governed by the FDI policy which is announced by the Government of India and the terms of the Foreign Exchange Management Act (FEMA) 1999, which was notified by Reserve bank of India This notification has been amended from time to time. The Ministry of Commerce and Industry, Government of India is the nodal agency for monitoring and reviewing the FDI policy on continued basis. The FDI policy is notified through Press Notes by the Secretariat for Industrial Assistance (SIA), Department of Industrial Policy and Promotion (DIPP). The foreign investors are liberated to invest in India, except few sectors where prior approval from the RBI or Foreign Investment Promotion Board ('FIPB') would be obligatory. The Government of India recognizes the momentous role played by foreign direct investment in accelerating the economic growth of the country and thus started a swing of economic and financial reforms in 1991. India is now planning to initiate the second generation reforms proposed for a faster assimilation of the Indian economy with the world economy. As an outcome, India has been rapidly altering from a restrictive regime to a liberal one. Many reforms have been done by Indian Government in this context which is shown in the figure1:

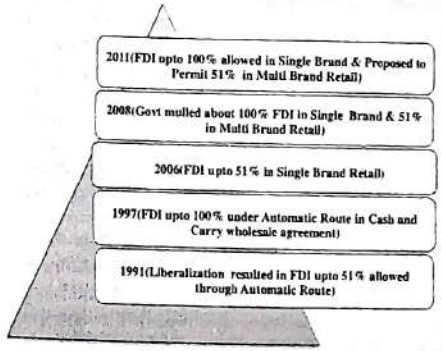

Figure 1

Among the emerging markets, in 2011, India is ranked as the fourth most Attractive Country for Retail Industry as per the Global Retail Development Index which is developed by A.T Kearney on the basis of 25 macroeconomic and retail specific variables. India is expected to lead one of the best retail economies by 2042s due to good talent pool, huge markets and availability of cheap raw material. Some studies have also state that variables like market size and differences in factor costs were found to be considerable in determining the FDI location as these are very important in determining the market economies and they cannot be achieved and oppressed till the time market achieves a certain size. (Markusen and Maskus, 1999). Foreign players may invest in the form of Single Brand Retailing and Multi

Brand Retailing. Organized retail has become a centre of attention for most of the leading international players. Retailing through formats such as supermarkets, hypermarkets, department stores and other forte chains are swelling. India's consumers chiefly fit in to the middle and lower financial strata of society and both these segments would desire shopping at multi-brand retail stores which provide them an extensive assortment of price points and options in each product class. A widely held retail companies, 33.6%, cater to the customers falling in Rs 100,000 to Rs 500,000 income group, followed by 26.2% companies catering Rs 500,000 to Rs 1,000, 000 income group, both of which are emergent segments in India.As far as shopping behaviour of Indian consumers is concerned, modern outlets are preferred because they associate entertainment with shopping and now-a-days it's a customer delight to go out for shopping and entertainment simultaneously (Sinha 2003). Retail stalwarts such as Wal-Mart, Tesco and Marks & Spencer have already made entry into the Indian retail industry and with multi-billion dollar funds by major household players such as Reliance Retail. The US-based world's largest retailer Wal-Mart has already recognized its existence in the Indian market through a wholesale cash and carry stores. The company at present operates 17 wholesale cash-and- carry stores under Best Price Modern Wholesale stores in India. This industry is expected to go from strength to strength and have bright future as a number of drivers are aiding the development of the Industry such as improved levels of income and increasing purchasing power etc. In 2006,Indian government sanctioned FDI up to 51% in single brand retailing now this cap has been increased to 100%,last year in November,2011,union cabinet allowed FDI up to 51% in multi brand retailing, but this reform was put on hold as lot of opposition and protest was generated by various state governments, political parties like Trinomial congress, small shopkeepers, small traders, trading associations, industrial associations on certain grounds which has compelled Indian government to scrutinize the long term implications of organized retail in India. The government is geared up with the policy and the verdict has already been permitted by the cabinet it is only the matter of removing the finger from the pause button.

In this backdrop the Objective of the study is:

- To discuss the present status and Policy Implications of FDI in Multi Brand Retailing.
- To Highlight the Major Controversies relating to FDI in Multi Brand Retailing in India.
- To Discuss the Challenges and Threats to the Foreign Retailers and Domestic Retailers.
- To provide various Suggestions to all the effected Players through approval of FDI in Multi Brand Retailing.

To achieve the objectives of the study, the paper is divided into following sections: SECTION I, the present section gives an overview of FDI in Organised Retail in India followed by SECTION II which contains Review of Literature. SECTION III exhibits the Present Status and the policy implications of FDI in Multi Brand Retailing and also highlights the Major Controversies relating to FDI in Multi Brand Retailng.SECTION IV Highlights the views of the Indian Government and the Foreign Retailers on the Issue followed by SECTION V states the Challenges and Threats which all the Players may encounter with. SECTION VI provides some Suggestions and Recommendations on the matter and SECTION VII entails the Conclusion followed by SECTION VIII gives the details about the References used in the study.

REVIEW OF LITERATURE

Reardon and Hopkins, 2006 Reardon and Berdegue, 2007 states that in underdeveloped countries Modern Retail arrived in Three Consecutive Waves. In the early hours of 1990s, the First Wave took place in South America, East Asia, China, North Central Europe and South Africa. The Second Wave took place in late 1990s in Mexico, Central Europe and Third Wave happened in the late 1990s and early 2000s in Africa, Central and South America, South East Asia, China India, Russia.They also state that the Third Wave Countries lagged behind due to the severe Foreign Policy on FDI in Retail Industry. China and Russia liberalized their FDI policy in 1990s and India did in early 2000s.In 2006, India sanctioned 51% in Single Brand Retail Joint Venture, but Multi Brand was still in debate at that time too.Koshy, Joseph, Partner, Joseph and Joseph law office describes in their article, FDI in Retail Sector, 2006 that Indian government has permitted FDI in several sectors but FDI in retail has been in debate in the country as it had been opposed by many State Government and Leftist. According to Report, "Corporate Hijack of Retail-Retail Dictatorship Vs Retail Democracy by Navdanya/Research foundation for Science, Technology and Ecology, the entry of Giant Corporations like Wal-Mart etc in the Indian Retail Industry will have undeviating impact on 650 million Indian farmers. A Report (Oligopoly Tnc, 2005, the ETC group) states that the main energetic forces in the Food Retail Sector are the Cut Throat Antagonism and Global Integration. If Giant Retail chains get footing in India, it will lead to disarticulation of small retailers and farmers.Dr Mandeep Singh, Associate Prof of Economics, The Earth Institute of Colombia University states in his article FDI in retailing in india, 2010, that the entry gate of FDI regime should be in phased manner as household retailers need adequate time period to adjust changes and compete with global retail giants. A publication by ICT by IANS, Theindian.com co. ltd, 2010 reveals the view point of heads of various Giant Retailers.FDI in Multi Brand Retailing: Time to expand the Horizons by Parekh, Paresh, Mumbai Agency, DNA, 2010 states that it is necessary to differentiate the Foreign Financial Institutions and Foreign Retailers for permitting FDI as Foreign Financial Institutions bring right talent and know how along with the capital which may be more pertinent to the profitable business in the sector. It also argues that Indian organised retailers may require finance for private equity than a premeditated alliance with foreign retailers. It further predicts that it is worth debating whether to place conditions before permitting FDI like rural employment creation, mandatory investment in back end infrastructure.Mukherjee and Patel,2005 reveal in their study that FDI through organised retailing have optimistic effect on the Indian industry in form of easy access to finance and global best practise through joint ventures Joseph and N sundarrajan, 2009 (the Indian council for research on international economic relations, ICRIER) in their study that only 17% of small shops were shut down due to competition from organised retailing. Through adoption of better business practise and technology, domestic retailers have competed effectively in opposition to organised retail. There has been an optimistic spill over effect on the Indian economy as its possession advantages get dispersal to household enterprises, thereby enhancing their productivity.

PRESENT STATUS OF FDI IN MULTI BRAND RETAILING IN INDIA AND THE MAJOR CONTROVERSIES RELATING TO IT AND ITS POLICY IMPLICATIONS

1. Present Status and Proposal as finalised by Indian Government

Indian government has opened Indian economy for global players as a part of an accord with World trade organisation (WTO) and also cheering foreign direct investment into the territory. After allowing 100% FDI in Single Brand Retailing, in 2011, UPA Government has allowed the decision of FDI in Multi Brand Retailing. The following proposal has been finalised by the government on this controversial issue:

- Government has legalized up to 51% of foreign direct investment (FDI) in multi brand retail trade.
- Fresh agricultural produce including fruits, vegetables, flowers, grains, pulses, fresh poultry, fishery, meat products etc may be unbranded.
- Minimum amount of US $ 100 million is to be brought in by foreign retailers.
- Out of the total amount brought in by foreign retailers at least 50% shall be invested in the back end infrastructure i.e. towards processing, manufacturing, distribution, design improvement, quality control, packaging, logistic etc.
- At least 30% of manufactured or processed products shall be procured from small domestic industries by the foreign retailers which have the total investment not exceeding US $ 1 million (without providing depreciation).
- Retail stores shall be established only in cities with population of more than 10 lakhs as per 2011 census and shall also cover area of 10 kilometres around the municipal/urban agglomeration limits of such cities.

2. Controversies relating to FDI in Multi Brand Retailing

Many Opponent political parties mainly BJP and Trinamool Congress have strongly protested against this decision. The most inopportune part is the UPA Government's validation of execution actions to be

kept invulnerable from parliamentary approval. 'Quit FDI Day' was observed on 9th august 2012 to protest against FDI in multi brand retailing by staging dharnas. According to Praveen Khandelwal, Secretary General of Confederation of All India Traders, foreign investments by global giant retailers would lead to closure of small business and lakhs of people will be jobless. He further added that it's highly undemocratic if Government will form an accord without traders assent. This issue have been encircled by number of controversies. The predicament arises whether opening up of FDI in multi-brand retail will build problems or endow with opportunities to local retailers. There is no appropriate response and apparent views have been seen in the favour and against FDI in multi-brand retailing. Some of the controversies are listed below:

Figure 2

1. Does India really need foreign retailers?

ACTUALITY : Indian economy is small with restricted superfluous capital and is already in force on budget defict. India need trillions of dollars to build its infrastructure and other facilities, it's simply not probable to back this expansion by domestic investors and Indian government, therefore international investment capital through FDI in obligatory. Apart from capital, Indian retail industry also call for knowledge and global amalgamation which can only be brought in by global retail leaders which can potentially unlock export markets for domestic farmers and producers.

2. Entry of Giant Retailer will result in Shutting down of independent stores leading to enormous job losses, only few jobs would be created but millions will be vanished?

ACTUALITY : Instead of job losses, retail reforms are likely to bring gigantic advancement in the Indian jobs as organised retail will call for workforce then millions of additional jobs will be formed during the building of and the maintence of retail stores, roads, cold storage centres, software industry and other retail supporting organisations. Walmart alone would employ 5.6 million citizens if it swell in India as much as their charisma in the USA and also if the staffing level is reserved at the same level as in the US stores. The accepted jobs in prospect Indian organised retail would total over 85 million.

3. Foreign players may practise dumping, get competition out of the way as they may become monopoly and raise prices?

ACTUALITY : Since 30 years, over 350 global retail companies like Wal-Mart, Carrefour, Tesco, Coop etc with annual sales over $ 1 billion have operated in several countries. Competition between Wal-Mart like retailers has set aside food prices in check. Country like Canada credits it's near to the ground inflation rates to Wal-Mart outcome. Price inflation in such countries has been 5-10 times lesser than price inflation in India. The consumer price inflation in Europe and US is less than 2% in comparison to India's double digit Inflation.Anti- Trust Laws and State Regulations like in Indian penal code have prevented Food Monopolies all over the world.

4. Indians will work hard and foreigners will reap profits?

ACTUALITY : With execution of 51% FDI limit in Multi Brand Retailing, just about half of the returns will remain in India as profits will be subject to taxes which will trim down the Budget Deficit of Indian Government. Eventually, retail companies will get returns all the way through hard work and by creating value.

5. Will Giant Retailers be able to avoid Pollution in terms of Carbon Footprints?

ACTUALITY : This question has mix response as India is already reeling with managing environmental crisis. India would not be able to avoid polluting more with the advent of large scale retail chains in India and it would make even harder to meet global norms. According to a survey, the Net GHG(Green House Gas) emission of 2005 of major Retailers – Wal-Mart, Carrefour, Tesco collectively was about 20 million metric tonnes which is corresponding to the 80 most polluting countries in the world.

VIEWS OF THE MAJOR PLAYERS

1. What Indian Government say on FDI in Multi Brand Retailing?

Inspite of lot of strong opposition on FDI in multi brand retailing, Indian government has been trying to counterfeit an accord on this extremely contentious issue, but several states still remain opposed to this idea. Till now only 10-11 Indian states and union territories like Delhi, Uttrakhand, Manipur, and Rajasthan etc have supported the centre's decision to permit FDI in Multi Brand Retailing. Delhi's Chief Minister, Shiela Dikshit stated that *FDI in Multi Brand retailing will benefit the Indian economy in many ways. She further states that this proposal would help in improving infrastructure, reduce waste, minimize the role of middlemen, reduce food inflation, stabilize prices, improve Agro Commodities management address gaps relating to post harvest infrastructure. The Indian Government need FDI to meet its foreign exchange requirements and government also believes that only global retailers can satisfy the rising and varied demands of Indian consumers.FDI in Multi Brand Retailing would improve the Agricultural Marketing, Revenue to the Government could also increase as large portion of Indian sector is unorganised and has low tax compliance. Profound FDI in the Multi-Brand Retail sector will upshot in gainful employment opportunities in agro-processing, sorting, marketing, logistics management and front-end retail management. In the next three years, minimum 10 million jobs will be produced in the retail sector. It will assist farmers' to get prices over the MSP by omitting manipulative middlemen. MNC Retailers and Foreign Retail Giants will make certain supply chain efficiencies for incessant supply of the products. Policy to make an urge for investing minimum of $100 million and out of which at least half the amount must be invested in back-end infrastructure, including cold chains storages, refrigeration, transportation, packing, sorting and processing which would definitely help in condensing post-harvest losses and costs. A condition to acquire minimum of 30% of goods from Indian micro and small industry will promote domestic manufacturing, thereby creating a manifold outcome for employment, technology up gradation and income creation.* At the World Economic Forum 2012 in Davos, India's Commerce and Industry Minister Anand Sharma told Wal-Mart president Doug McMillon and Metro board member Frans Muller that India's resolution to put foreign direct investment (FDI) in multi-brand retail on hold was "just a pause" strained by opposition. He further stated that the government is committed to take forward the reform agenda as the Indian retail market has massive scope for growth and development but many Indian retailers face a crunch in terms of financial support and supply chain management. So foreign players can come in and help them. He also said that FDI in multi brand retailing will not only improve the quality of goods but it will also enhance competitiveness. He also made a statement that no state will be forced to put into practice FDI in Multi Brand retailing. Uttrakand Chief Minister Vijay Bahuguna also favoured FDI in Multi Brand retailing saying that availability of Cold Storages and Proper Marketing Facilities will reduce the damage to the Agri-Horticulture-Organic produce which would ultimately result in increase in the income of rural farmers. The Deputy Chairman of the Planning Commission, Mr Montek Singh Ahluwalia also totally favours opening up of the sector for FDI.

Apart from Trinamool Congress the idea of FDI in multi brand retailing has been opposed by many other ministers and political parties. Minister of State for Commerce and Industry Jyotiraditya Scindia stated his view to the Rajya Sabha in written that without adequate safeguards FDI in multi-brand retail will lead to prevalent disarticulation and poor treatment of Indian workers in retail, logistics, agriculture and manufacturing. A written petition has been filed by Vandana Shiva, an NGO activist, in the Delhi High Court alleging that Bharti Wal-Mart and Bharti Retail are directly and indirectly carrying out retail trading in multi-brand in contravention of the FDI policy.BJP is also opposing entry of Foreign Direct Investment in multi-brand retail in the country on the ground that it will be an "injustice" to small traders.BJP leader LK Advani also said that sanctioning foreign brands to do retail trade in India is an injustice to retailers as it leave many small traders jobless.BJP President Nitin Gadkari stated that the country's economic condition is in a "sorry state" because of UPA government's erroneous economic policies, crooked practices and visionless leadership. Former BJP National President Rajnath Singh claimed that, *"If FDI is introduced in retail sector; it will break the backbone of Indian economy"*. According to Mr Viren Shah, President of Federation of Retail Traders Welfare Association and Mr B.C. Bhartia, National Federation of All India Traders, with the Entry of Global Giant Retailers into Multi Brand Retailing, the interests of the small retailers would be compromised.

2. What Foreign Retailers say on FDI in Multi Brand Retailing?

The President and CEO of Wal-Mart International, Mr Doug McMillon said at the World Economic Forum's Annual Meeting that FDI in Multi Brand Retailing will not impact the fortunes of small shopkeepers. He further stated by giving an example that after 20 years of retail business in Mexico,50% of retailing in Mexico is still done informally and fear of shutting down of independent and kirana stores is overstated. He also admitted that operating in India would pose challenges due to Regulations and High Real Estate prices in India. According to the CEO of US based Discount Department FDI in Multi Brand Retailing will help address inflation concerns for consumers as well as it will benefit the farmers in India.

CHALLENGES AND THREATS TO THE PLAYERS

Retail industry is the second largest employer in India and has remarkable growth potential and on the other hand foreign players have deeper pockets, ability and are in need to invest constantly to enlarge. In economies like china and japan,the retail industry are slowly reaching towards saturation point and many retailer are confronting increasing margin pressures.Therefore,global giant retailers are attracted towards developing economies like India which is mounting at a hasty velocity. Global retailers are interested to invest in India due to increasing urbanisation and favourable consumer base.FDI in multi brand retailing will generate employment opportunities, income, technology transfer and economic stability but still there are several factors like government regulations, lack of ample infrastructure and inadequate investments are the probable bottlenecks for retail companies. It may pose advantages as well as challenge for domestic retailer, foreign retailers and also for the Indian government. Therefore some of the challenges and threats are listed below in this context.

- FDI in Multi Brand retailing may lead to large scale disarticulation of employed in retail sector due to unfair competition which may eventually result in mass departure of domestic retailers.
- The domestic retailers may not be able to endure in the ex-parte competition as the Indian retail sector especially organised is in an embryonic stage.
- The existing firms may mislay their self competitive potency if they join forces with global biggies.
- Any MNC going to set up a multi-brand retail store across India will have to countenance vast licensing obligations in each state of its operation which could be a major obstacle in the way of FDI in multi-brand retail, they will have to get approval for investment as well from the central regulatory authority which, at present, is the Foreign investment promotion Board (FIPB).
- The foreign players may encounter Red-Tapism as prior to investment approval their application has to pass through various transfer channels which is highly subjugated by bureaucrats resulting in impediment in decision making leading to disinterested corporate giants.
- Although there are number of anti-corruption cells and acts in India but still corruption could be a major obstacle for foreign investors.
- No doubt there is availability of cheap labour in India but most of them are unskilled therefore foreign investors may require to provide training and development to them to administer advance retail chains.
- In 2008-10, rigorous financial damage was caused to investors worldwide due to inflation but Indian economy remained modest affected because of partial open economy. But FDI in multi brand retailing would escort to persistent threats due to revolution in business cycles of global partners.
- Today India already has foreign debt, trade deficit and current account deficit which mean nearly all resources and transactions in India are owned or financed by Foreign Nations resulting in killing of Indian rupee due to Foreign Currency influence which can be witnessed in Rising Commodity Prices, Rising Fuel Prices and Rising Debts. FDI in retail may impact Indian small and medium Manufacturing sector which is already dented by China Products which will further them hurt.
- In current Inflation Stricken Economy, Indian Government need to be careful while permitting FDI in Muti-Brand Retailing as it fears to hurt the sentiments of Middlemen, Farmers and Owners of mom and pop stores.

SUGGESTIONS AND RECOMMENDATIONS

Being a controversial issue, no doubt Foreign Direct Investment (FDI) in Multi Brand Retailing is expected to transform the Indian Retail landscape in a noteworthy way. The global organised players would bring in the much needed investment that would incite the further growth of the sector which is particularly important for nourishment of some of the domestic retailers which lack requisite resources to ride out the storm during an economic slump. The technical know-how, global best practices, quality standards and cost competitiveness brought forth through FDI would portend well for the domestic players to harvest the necessary support to protract their growth. The infrastructure support would definitely help to improve the backend processes of the supply chain and enable to purge wastages and augment the operational efficiency.FDI in multi-brand retail would in no way imperil the employed in the unorganised retail sector. On the contrary, it would pilot to the conception of millions of jobs as substantial infrastructure capabilities would be needed to cater to the changing lifestyle needs of the urban Indian who is keen on allocating the disposable income. The numerous intermediaries would be restricted and the farmers would get to enjoy a bigger share of the pie. Despite of numerous advantages, this matter has been opposed by many political parties, small traders etc on certain grounds like it may have adverse impact on Agrarian Community, environmental issues, loss of jobs, creation of monopoly and so on. Political parties have opposed to this move pointing that it will be suicidal for small and marginal farmers and would affect thousands of traders in the sector.Hence, FDI in multi brand retailing is a conflicting and very sensitive matter, therefore the foreign retailers as well as the Indian government need to take rationale decision before implementing proposed reforms. So few suggestions and recommendations are listed below in this regard:

- The first basic step needed for reforming Indian retail sector is providing it an industry status which will not only facilitate better financial processes but also enable prudent practices.
- Policy clarification is required to authorize giant global players which will augment the confidence of the foreign investors and the sector should be opened for giant firms in calibrated manner.
- A serious revision of the labour laws is required to strengthen the retail industry. All laws should be suitably changed and reasonably modified.
- The government should provide a "Single Window Clearance System" which will rationalize license process allied with the establishment and administration of retail stores and a uniform license regim can be implemented in all the states.
- The government can create retail and entertainment zones (REZ) similar to SEZ and necessary exemptions like stamp duty, octroi etc could be provided to foreign retailers operating within them which will help in reducing prices.
- A tax incentive in the form of 100% deduction on expenditure incurred on the employment of fresh personnel and weighted deduction for payment made by retailers towards training and development to their staff in order to improve their expertise can be allowed. This will help in promoting employment in the retail sector.
- Government must assist in creation of farmer cooperation so that they can directly sell to organised retailers and also a private code of conduct should also be formulated for organised retailers.
- Better credit availability should be ensured to unorganised retailers through innovative banking solutions.
- A national commission should be set up which should evolve a set of conditions for foreign retailers on procurement of farm produce, domestic produce etc.It must noticeably state the minimum space, construction, storage standards etc as done in china where FDI in retailing was permitted in 1992.
- Half of the jobs created by foreign giants should be retained for rural youth.
- A strong legal framework in form of competitive commission should be formulated especially for foreign retailers to pact with anti-competitive practices and predatory prices. It should also ensure that foreign giants do not dislocate small retailer and there is peaceful co-existence between the two.
- FDI in online Multi Brand Retailing would be allowed, it will have catastrophic outcome for online as well as offline retailers.Hence, it

should be banned for at least next 10 years as Indian e-retailers need to achieve satisfactory scale to contend with global e-companies.

CONCLUSION

Modern retail is very high-priced business and execution of FDI in multi brand retail will be salutation step as it would supply much needed capital for the sector. Therefore, an essential step needs to be taken to thrust further growth in this sector. It will not only prove to be fruitful for the economy but also put together the Indian and global retail market. But with the altering trends in the Indian urban and rural society, there is an insistent need to enlarge the Indian retail sector. The reaction towards 100% FDI in Multi Brand Retailing is assembling velocity. Presently, the UPA government has a mainstream in the house and it seems that they will proficiently be able to pass the bill. There is a likelihood that it will be shore up by other state governments as well.However, the opponent led by BJP is not in support of this move and in recent times, it has presented a report to the parliament recommending an absolute proscribe on FDI in Multi Brand Retailing.So, this is a contentious issue which should be set on keeping in mind the interest of all the stakeholders. No doubt, the proposed FDI norms will open entry gate for global retailers for tactical investment who have been waiting to invest in India since so long. Therefore it is a need of an hour to implement the reforms and policy framework related to FDI after considering the social, political and economic structure. The permission to enter global giants is clearly a game changer for Indian retail sector. For a victorious head start, the big retail bosses shall come to India either autonomously or partnering with Indian counterparts.India will appreciably gain in terms of quality standards and is bound to drag cost-competition of Indian producers and marketers. There is possibility that FDI in Multi Brand Retailing would provide improved pay packets for retail staff which unorganised retail sector has botched to offer.but, as it would have direct impact on huge chunk of population, there is need to deal with it vigilantly.therefore, FDI in Multi Brand Retailing must be anchored in a way that it grades in a Win-Win situation equally for domestic and foreign players. It should also be ensured that foreign investors make a legitimate input to the development of Indian's infrastructure. A stringent and restrictive regulatory framework should be framed by the Indian government keeping in mind the Indian specificities' national shopping regulation act can also be enacted to legalize the fiscal and social aspects of structured retail industry. The government should also provide proactive aid to traditional retailers so that they can lucratively compete with the modern global players.

REFERENCES

1. Bhaskaran, "FDI permit for Multi Brand Retail in India: Green signal or Red signal", Business Intelligence Journal, Jan, 2012.
2. Deloitte's India Retail Market Report, Booz and Company Analysis and Forbes
3. DIPP (2010), Discussion paper on Foreign Direct Investment (FDI) in Multi-Brand Retail trading, Department of Industrial Policy and Investment Promotion, New Delhi.
4. Dr Namita Rajput, Kesharwani, Khanna, "FDI and Indian Retail Sector: An Analysis", Journal of Business Advanced Research, vol 1, 2012.
5. Emerging trends in India, Techno Park, 2011.
6. FDI in Multi Brand Retail (Adequate safeguards is key to success), Parliamentary Forum on Economic Policy Issues, 2012.
7. G.S Popli, Singh, "Impact of FDI in retail sector in India".
8. Handa, Grover, "Retail Sector in India: Issues and Challenges", International Journal of Multidisciplinary Research, vol2, issue 5, may, 2012.
9. Harish, "SWOT analysis for opening of FDI in Indian retailing", European Journal of Business and Management, vol4.No.3, 2012.
10. Issues with FDI in Multi Brand Retailing for Indian Agrarian Community,DIPP,Ministry of Commerce and Industry and Indian Stakeholders, Organic Farming Associating India-A Report,2012.
11. Jain, Sulekha, "FDI in Multi Brand Retailing: Is it a need of the Hour?", International Journal of Multidisciplinary Research, vol. 2, issue VI, jan, 2012
12. Jhamb, Ranikiran, "Emerging trends of Organised Retailing in India: A shared vision of consumers and retailers perspective", Middle East Journal of Scientific Research, 11(4), 2012.
13. Joseph, Mathew and Nirupama Soundararajan (2009), "Retail in India: A Critical Assessment", Academic Foundation, New Delhi.
14. Laxmikant Hurne, "Proposed FDI in Multi Brand Retailing: Will heat the Indian Unorganised Retail Sector", Review of Research Journal, vol.1, issue VI, March, 2012.
15. Markusen, Maskus, (1999), "Discriminating Among Alternative Theories of the Multinational Enterprises", NBER Working Paper, No. 7164.

Encrypted Intra and Inter Mailing System

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Dr. (Prof.) Sanjeev Gupta

Abstract : Encrypted Intra and Inter Mailing System meets the needs of the employees in the organization for communicating with each other within their units in a secured way as well as outside their units.Only authorized members of the organization are allowed to use these e-mail facilities and confine the organizational communication to intranet avoiding unnecessary security and financial overheads.For a business organization it is important to keep its confidential data secured from any unauthorized access. As it is an encrypted mailing system it is secured in a way that there is use of CRYPTOGRAPHY for mails i.e. mails send will be encrypted by the user and on receiving they will be decrypted by the user. It is the system that can cut down a lot of time of employees spend on routine communication tasks. The files can be attached with the mails so that more information can be communicated. It will allow the user to send a message to a large number of recipients simultaneously and save the cost of paper and print. Thus it is also an environmental friendly alternative of the communication. A user can also add any topic of his choice on the forum. This is really helpful for the employees because different people at a workplace have different opinions about a topic, out of which an appropriate one can be considered.

INTRODUCTION

The current world is moving swiftly, agility is a new buzzword. The digital age has created a worldwide economy, where customers, suppliers, partners are found around the globe. Therefore, the mobility of employees is becoming more and more central issue of the modern expertise.

"Encrypted Intra and Inter Mailing System" utilizes a wide range of emerging technologies to bridge this gap & give the people in an organization real time access to the information they need, no matter where they are located. Encrypted Intra and Inter Mailing System not just provides fast, easy & secure access tools for communicating within the organization network through mail, text, images, and instant messages but it also enables them to communicate with people outside their organization such as the business clients.

OBJECTIVE

This study **Encrypted Intra and Inter Mailing System** aims at providing a good communication interface for the organization. It can cut down the time of employees send on routine communication tasks. Its successful implementation makes easy the job of employees in the organization.

FEASIBILITY

The basic objective of software engineering is to: develop methods and procedures for software development that can scale up for large systems and that can be used to consistently produce high quality software at low cost and with a small cycle time. That is, the key objectives are consistency, low cost, high quality, small cycle time, and scalability.

The basic approach that software engineering takes is to separate the development process from the software. The premise is that the development process controls the quality, scalability, consistency, and productivity. Hence to satisfy the objectives, one must focus on the development process. Design of proper development process and their control is the primary goal of the software engineering. It is this focus on the process that distinguishes it from most other computing disciplines. Most other computing disciplines focus on some type of the product-

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algorithms, operating systems, databases etc. while software engineering focuses on the process for producing products.

Requirement Analysis

Requirement analysis is done in order to understand the problem the software system is to solve. The problem could be automating an existing manual process, developing a new automated system, or a combination of the two. The emphasis in requirements analysis is on identifying what is needed from the system, not how the system will achieve its goals. There are at least two parties involved in the software development-a client and a developer. The developer has to develop the system to satisfy the client's needs. The developer does not understand the client's problem domain, and the client does not understand the issues involved in the software systems. This causes a communication gap, which has to be adequately bridged during requirements analysis.

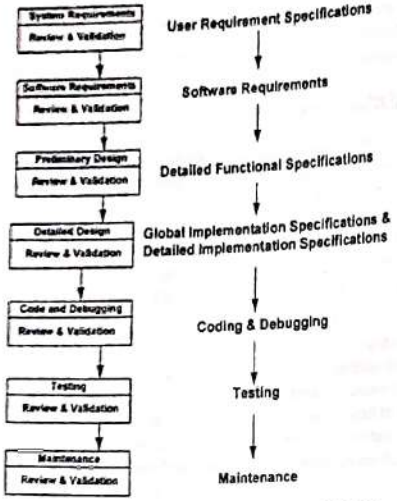

FIG. PHASES OF DEVELOPMENT PROCESS

Software requirement Specification

A requirements specification for a software system is a complete description of the behavior of a system to be developed. The basic goal of requirements specification to produce the requirements, which describes the complete external behavior of the proposed software. However, producing the report is said to be done.

The careful review of the requirements in the SRS can reveal omissions, misunderstandings, and inconsistencies early in the development cycle when these problems are easier to correct. The description of the product to be developed as given in the SRS is a realistic basis for estimating project costs and can be used to obtain approval for bids or price estimates. Organization can develop its validation and Verification plans much more productively from a good SRS. As a part of the development contract, the SRS provides a baseline against which compliance can be measured.

For anything but trivial systems the detailed requirements tend to be extensive. For this reason, it is recommended that careful consideration be given to organizing these in a manner optimal for understanding. There is no one optimal organization for all systems. Different classes of systems lend themselves to different organizations. The above subsections of the Software Requirements Specifications (SRS) document should provide an overview of the entire SRS. This document is telling what the system must do – so that designers can ultimately build it.

PROJECT PLANNING

Description Of The Modules:

Module 1: Password Module

In this module, Member enters a password and the software checks its validity. If the password is valid then he is allowed to enter, otherwise "Invalid User/ Password" message is displayed. Different data access rights are assigned to different users. A new member can also be registered in this module.

Module 2: New User Registration Module

In this module new user can submit his personal details regarding the user's email id, password, contact no, date of birth etc.

Module 3: Encrypt Mail Module

In this module login user can write his mail and either he/she save the mail or first encrypt the mail by giving the two prime numbers & a password and then send the mail to the user in the network only.

Module 4: Decrypt Mail Module

In this module, Login user can decrypt the mail by entering the same password which the user give it while encrypting the mail. Then after he/she can open the mail or see the attachment.

Module 5: Add New Topic Module

In this module, a Login user can add new topic to see the views of a particular topic added by him. Any user within this LAN can enter his views under this topic.

Module 6: Add New Views Module

In this module, a Login user can add the views under the desired topic. Anybody in this company can see the views of all the users

Module 7: Search Module

In this module, anybody can see the details of the registered user by entering the id, mobile no and date of birth of that user.

Modularity is done to break down software into different parts. By breaking the project down into pieces, it's (1) easier to both fix (you can isolate problems easier) and (2) allows you to REUSE the pieces. In this project the *Composition* or *bottom-up* approach is followed that takes modules and puts them together to form a larger system.

SOFTWARE DESIGN

Gantt Chart is a project scheduling technique. Progress can be represented easily in a Gantt chart, by coloring each milestone when completed. The project will start in the month of January and end in the first week of April.

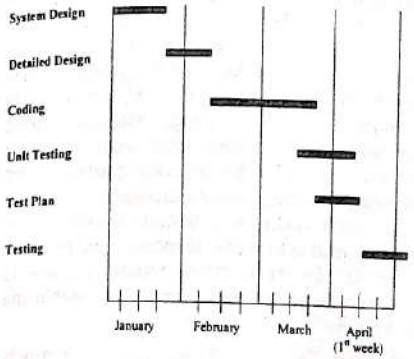

FIG. ANTT CHART

Data Base Design

Introduction to data dictionary:

Data dictionaries are an integral component of structured analysis, since data flow diagrams by themselves do not fully describe the subject of the investigation. The data flow diagrams provide the additional details about the project/system.

E-R DIAGRAM OF MAILING SYSTEM

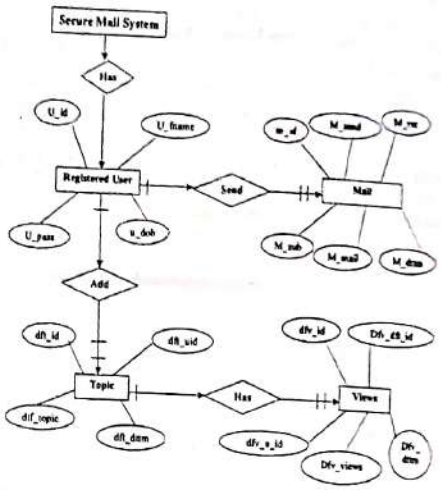

FIG. ER-DIAGRAM

A **data flow diagram (DFD)** is a graphical representation of the "flow" of data through an information system. DFDs can also be used for the visualization of data processing (structured design).On a DFD, data items flow from an external data source or an internal data store to an internal data store or an external data sink, via an internal process.

STEPS TO DRAW A DATA FLOW DIAGRAM

Step 1 Start from the context diagram. Identify the parent process and the external entities with their net inputs and outputs.

Step 2 Place the external entities on the diagram. Draw the boundary.

Step 3 Identify the data flows needed to generate the net inputs and outputs to the external entities.

Step 4 Identify the business processes to

perform the work needed to generate the input and output data flows.

Step 5 Connect the data flows from the external entities to the processes.

Step 6 Connect the processes and data stores with data flows.

Step 7 Apply the Process Model Paradigm to verify that the diagram addresses the processing needs of all external entities.

Step 8 Apply the External Control Paradigm to further validate that the flows to the external entities are correct.

Step 9 Continue to decompose to the nth level DFD. Draw all DFDs at one level before moving to the next level of decomposing detail. You should decompose horizontally first to a sufficient nth level to ensure that the processes are partitioned correctly; then you can begin to decompose vertically.

Encrypted Mail

FIG. ENCRYPTED MAIL

USER'S OUT BOX

FIG : USER'S OUTBOX

USER DESCRYPTING THE MAIL

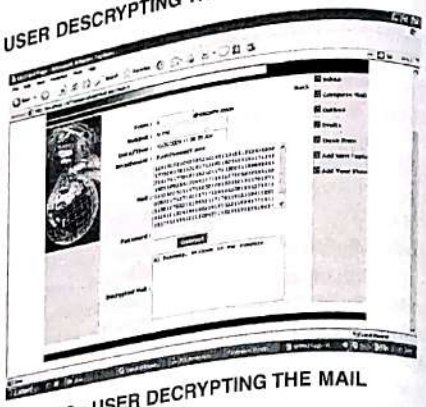

FIG : USER DECRYPTING THE MAIL

Software Testing

It should be clear in mind that the philosophy behind testing is to find errors. Test cases are devised with this purpose in mind. A test case is a set of data that the system will process as normal input. However, the data are created with the express intent of determining whether the system will process them correctly.

Levels of Testing

Systems are not designed as entire systems nor are they tested as single systems. The analyst must perform both unit and system testing.

Unit Testing : In unit testing the analyst tests the programs making up a system. For this reason, unit testing is sometimes called program testing. Unit testing gives stress on the modules independently of one another, to find errors. This helps the tester in detecting errors in coding and logic that are contained within that module alone. Unit testing can be performed from the bottom up, starting with smallest and lowest-level modules and proceeding one at a time. For each module in bottom-up testing a short program is used to execute the module and provides the needed data, so that the module is asked to perform the way it will when embedded within the larger system.

System Testing : Theoretically, a newly designed system should have all the parts or sub-

systems are in working order, but in reality, each sub-system works independently. This is the time to gather all the subsystem into one pool and test the whole system to determine whether it meets the user requirements. This is the last change to detect and correct errors before the system is installed for user acceptance testing. The purpose of system testing is to consider all the likely variations to which it will be subjected and then push the system to its limits.

System testing makes a logical assumption that if all the parts of the system are correct, the goal will be successfully activated. Another reason for system testing is its utility as a user-oriented vehicle before implementation.

Integration testing

Integration testing is any type of software testing that seeks to verify the interfaces between components against a software design. Software components may be integrated in an iterative way or all together ("big bang"). Normally the former is considered a better practice since it allows interface issues to be localized more quickly and fixed.

Acceptance testing

1. A smoke test is used as an acceptance test prior to introducing a new build to the main testing process, i.e. before integration or regression.
2. Acceptance testing performed by the customers, often in their lab environment on their own hardware, is known as user acceptance testing (UAT). Acceptance testing may be performed as part of the hand-off process between any two phases of development

CONCLUSION

- Successfully developed a secured communication interface for the organization. Encrypted Intra and Inter Mailing System meets the needs of the employees in the organization for communicating with each other within their units in a secured way as well as outside their units
- As it is an encrypted mailing system it is secured in a way that there is use of cryptography for mails i.e. mails send will be encrypted by the user and on receiving they will be decrypted by the user.
- It is the system that can cut down a lot of time of employees spend on routine communication tasks. The files can be attached with the mails so that more information can be communicated.
- The technology used and the overall design makes the application flexible and easily scaleable for the future business requirements.
- The intuitive, attractive, simple user interface provides for minimal learning on part of the user.

SUGGESTIONS

The technology used and the overall design makes the application flexible and easily scaleable for the future business requirements.The product is fully documented so that future modification can be made very easy in case some requirements get change in future. The attachment size of the files can be extended in future from five megabytes.

The photographs of employees can also be embedded in the home page of the user Moreover, an option of change photograph can be given in change profile section.

The feature of chatting can also be added for the employees. A feature can be added such that the two people while chatting to each other can also see each other through web camera.

The interface designs can also changed as per the interest of the user.

The security of the system should be upgraded from time to time because whatever important information the employees share is required to be protected from any illegal access.A research can also be done on sending and receiving of videos between the different users. A new password management technique can be used to make the password of user more secured.

REFERENCES

1. Date, CJ: "An Introduction to Database System", Narosa Publications- 1998.
2. Jalote, Pankaj: "Integrated Approach to Soft-ware Engineering", Narosa Publication-1998.
3. Muthu, C: "Visual C# .Net", Mc Graw Hill Education-2008.
4. Spaanjaars, Imar: **"Beginning ASP.NET 4: in C# and VB", Wrox Publication.**

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Study of Modified Technology Acceptance Model of Mobile Internet

Gaoravjeet Dagar

Abstract : A decade before when computer was at its nascent stage, adoptive power of Indians were also very slow. But as time changes the basic idea of technology has changed to more advanced models India has always been the demanding destination for marketing of innovative products either by Domestic or Multinational companies. With the development of technology, this demand has increased more and more. An attempt is made through this paper to study whether the modified version of the Technology Acceptance model validates to Indian continent. Various studies have been made by various researcher in this regard with respect to various innovative products in various countries. Some four more factors are been added to the original TAM like perceived compatibility, social influence, perceived innovativeness and perceived credibility. And it is concluded that these four factors also plays a vital role along with other two in creating an impact on behavarioul intentions of customers and its further usage.

INTRODUCTION

In India it was in August 1995, that Mobile services were launched commercially. It has been frequently found that the adoption level of Indian consumer shows a very slow pace in the few beginning years of the product inception, but gradually the new products get penetrated at a faster rate and increases at an accelerated rate. So also the case with mobile service .In India the average monthly subscribers of mobile was a meager figure of 0.05 to 1 million in the previous years, then it increased to 2 million by 2003-2004 & 2004-05. The growth was also timid in the initial years due to high price of mobile hand set and less availability of various versions .But with entry of more and more players, the growth shows a commendable increase and this growth started adding up with total subscribers reaching to 16 million by 2003, followed by 22 millions in 2004, 32 million in 2005 and 65 million in 2006. Only China and US was a little figure ahead of India in terms of subscribers. Now in India there are usage of both technology GSM (Global system for mobile communications) and CDMA (code –division multiple access) in the mobile sector. The reason behind the growth is also associated to low mobile tariffs in India with respect to others in the world. In terms of market share of Mobile Service Providers in India as per August 2008, Bharti Airtel tops the List with a market share of 24.9 %, followed by Reliance Communications [GSM + CDMA] 18.1% , Vodafone India 17.6% , BSNL 12.8%, Idea Cellular 9.7%, Spice Telecom 1.2% , Tata Teleservices 9.4% and Others 6.2%. India's Mobile Market is showing a remarkable growth since year 2000. It is found that India is only 2nd to China in terms of total no of Mobile subscriber base in the world. The result is that overall Tele-Density of India has grown by 44.3% in Sep 2009 as contrast to 33.23 % in Dec 2008. The present era is of information gathering and sharing .This has helped us to get all relevant information required easily within few seconds of time which was not possible before .At that time whatever information we gather took several span of time to share with others since the device available to us lack speed which is the main need of the hour. Now Current situation demands quicker decision making and to have faster access to relevant information as and when required .And this has been made possible by the technological advancements by providing access to Internet. Internet growth in India is commendable but only restricted to fixed points like homes, office and cyber café out of which cyber café have dominated in the low PC penetrated area .Also now internet can be availed by high speed data cards, public WI-FI hot spots and through mobile phones.

Now other access points such as WI-FI hot spots and mobile internet are gradually gaining acceptance with better convenience and mobility .But there is a majority of population who still have lesser access to

Research Scholar

internet services. It is found from the above figure that the internet users in India have increased from the meager figure of 5 million to 57 million in 2008. The base have decreased for the few previous years and then increasing to 25 % as on Sep 2008. This growth is on account of the variety of online applications like online communication, information search; user generated content as well as online entertainment applications like gaming. Mobile Internet is about getting connected to Internet with the help of mobile devices like cell phones, PDAs, game consoles, laptops and other portables. Which means that you get to stay connected wherever you are and even on the move; you don't have to be near a Wi-Fi spot to be able to access the Internet. It has been noticed that when any new technology comes to market, adoption is less for some previous periods of time and then it slowly gains pace. The same is for Mobile internet .Indian Consumers at a mass are still using traditional internet, but the pace at which subscribers base for mobile is increasing it can be assumed that mobile internet will also be accepted. In fact the main point of this research paper is to study that how mobile internets services validates Technology acceptance model which will be latter discussed. We have seen that mobile subscribers base in India have increased at an alarming rate .It is due to the emergences of mobile as a point of access that offers opportunities for increasing the mobile internet penetration for Low PC and high mobile phone penetrated Indian market. To facilitate this further efforts are needed to provide innovative devices ,appropriate content and better technologies to the customers but at really affordable rates. This in fact will help for driving the growth of mobile internet in India.

Table 1: Technology Development in Telecommunication

Stage	Technology	Speed	Features
1G	AMPS	NA	Analog (voice only)
2G	GSM , CDMA	< 20Kbps	Voice, SMS, conference calls, caller ID, push to talk
2.5G	GPRS, 1xRTT EDGE	30Kbps-90Kbps	MMS, Web browsing, short audio/video clips, games, applications, and ring tone downloads
3G	UMTS, 1xEV-DO	144Kbps - 2Mbps	Full-motion video, streaming music, 3D gaming, faster Web browsing
3.5G	HSDPA(upgrade over UMTS), 1xEV-DV	384Kbps - 14.4Mbps	On-demand video, videoconferencing
4G and beyond	WiMAX 802.16e LTE	100Mbps-1Gbps	High-quality streaming video, high-quality videoconferencing, Voice-over-IP telephone

Source: Mobile Internet in India, Research conducted by IMRB, ETECH, and IAMAI

Though mobile internet is at its nascent stage in India, but the benefits that can be reaped from it in fact act as the driving force behind its wider acceptance .More and more innovative applications are made available through mobile internet like Mobile Marketing, Mobile Learning, Mobile Widgets, Mobile TV, M Blogging, M-Commerce, Location based services etc.

Technology Acceptance Model and its modifications.

The **Technology Acceptance Model (TAM)** is an information systems theory that models how users come to accept and use a technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably: perceived usefulness (PU) and perceived ease of use (PEOU).The model was proposed by Davis [1989], and forms the basis for many studies regarding the acceptance of any new technology coming in the market. Perceived usefulness tells about how the new technology helps the user in terms of improving and developing performance whereas perceived ease of use deals with the user's perception of whether the new technology can be employed with least effort or not . According to TAM, behavioral intention (BI) is a major determinant of use behavior; and that behavior can be predicted by measuring BI. BI is viewed as being determined by how a person considers the perceived usefulness (PU) and ease of use (PEOU) of the systems studied. Other than TAM various models were there to study technology acceptance.

REVIEW OF LITERATURE

There are various papers which have used different types of model for studying technology adoption for various products. Pedersen [2002]concluded that along with TAM subjective norms and behavioral control should also be included to study adoption level in M Commerce services. Kwon and Chidambaram [2000] , concluded that Users Perception influence their buying behavior towards cellular phone adoption and perceived ease of use plays a major role. Hung et al.(2003) concluded

that perceived usefulness and ease of use have positive impacts on the user's attitudes and behaviour intention. Lapointe (2004) concluded that three new factors also play a major role other than perceived usefulness and ease of use for usage of mobile computing devices. Kleijnen, Wetzels, and Ruyter (2004) found that perceived cost, system quality, and social influence correlated significantly with attitude toward use. Factors such as age, computing skills, mobile technology readiness and social influence play major role in mobile phone use. Bedford (2005) has used UTAUT to find acceptance of M commerce. He added one more factor –trust which affect behavior very much. Lin and Wang (2006), perceived credibility, perceived self-efficacy, and perceived financial resources were added other than basics of TAM for studying consumer's intention to m- commerce use. Hau, Wang, and Wen (2006) concluded that personal innovativeness has no direct relation to behavioral attitude since Behavior and attitude of consumers are largely influenced by endorsement of family and friends. Shen and Chen (2006) found that Existing knowledge, perceived usefulness, and perceived ease of use all had positive effects on consumers use intention. Amin (2008) concluded that other than perceived usefulness (PU) and perceived ease of use (PEOU) perceived credibility (PC) , (AIMCs) the amount of information about mobile phone credit cards and perceived expressiveness (PE) are important determinants in predicting the intentions of Malaysian customers to use mobile phone credit cards. Han, (2005) concluded that social factors, perceived credibility, compatibility, and personal innovativeness should be included in the basic TAM model. Je Ho Cheong, Myeong-Cheol Park,(2005) observed that perceived contents quality- perceived usefulness ,perceived system quality - perceived usefulness and internet experience -perceived ease of use plays a vital role in predicting behavior of Korean consumers in using mobile internet. Lu, Wang, Yu,(2007) found that TAM validates for mobile data services in China some cases and rejects in some way . Dalian, Liaoning (2009) in their study for analyzing Adoption behavior of mobile Commerce in China ,examines the reliability and validity of TAM .They concluded that all factors except Perceived ease of use significantly affected users' behavior intention. Phuangthong, Malisawanni, (2005) in their study for Behavioral Intention for 3G Mobile Internet concluded that other than factors included in original model TAM, some other new factors are also needed. Parveen, Sulaiman,(2008) found that Technology complexity and personal Innovativeness have a positive impact on intention to use WIMD with reference to Malaysian consumers. Shin, (2007) Vatanparast, Qadim,(2009), have studied in five different countries and concluded with the result that other than customers attitude towards perceived usefulness and ease of use with regard to use and usage of Mobile internet ,cultural factors also affect mobile phone internet usage in different markets. Various studies have been conducted in different parts of the world, rare studies have been conducted with reference to India. So an attempt has been made to study the validity of TAM with respect to Indian Market (specifically Delhi and NCR). Along with TAM, others factors are also been studied like compatibility ,perceived credibility ,social influence, adaptability, mobility, personal innovativeness are taken into consideration.

Objectives of the study

The main idea behind this paper is to study the validity of TAM for mobile internet and customer's attitude of Indian Consumers using modified model of TAM:

a. To study whether TAM modified version validates with respect to mobile internet and adoptability of only Delhi and NCR Customers.
b. To study whether perceived usefulness have a positive effect on behavarioul intention towards using mobile internet
c. To study whether perceived credibility have a positive effect on behavarioul intention towards using mobile internet
d. To study whether personal innovativeness have a positive effect on behavarioul intention towards using mobile internet
e. To study whether there lays a difference between men and women in terms of perceived usefulness values.
f. To study relationship between mobile internet experience and perceived ease of use.

Research Methodology

Research methodology for this paper is bases on the primary and secondary data. The primary data is collected from the main pockets of Delhi and NCR based on Cluster sampling followed by Random Sampling with the help of structured questionnaire. The sample size was 100. The secondary data was collected from the journals and books. The various statistical methods like Correlation technique for testing the entire hypothesis except the 9th hypothesis for which T-test has been done.

Hypothesis

1: The perceived usefulness by the consumer has a positive effect on the behavioral intention toward using m-internet.
2: The perceived ease of use by the consumer has a positive effect on his or her behavioral intention toward using m-internet.
3: The perceived credibility by the consumer has a positive effect on the behavioral intention toward using m-internet
4: The compatibility of the consumer in using mobile phone has a positive effect on his or her behavioral intention toward using m-internet
5: Social influence has a positive effect on behavioral intention toward using m-internet.
6: The personal innovativeness of the consumer has a positive effect on his or her behavioral intention toward using m-internet.
7. There will be a positive relationship between intention to use and service usage, perceived ease of use and perceived usefulness, values between men and women, education and perceived usefulness, Income and perceived usefulness, stationary Internet experience and perceived ease of use.

Findings and analysis

From the data collected the following analyses have been made:

1. The correlation methods shows that there is positive relationship of 0.789 between perceived usefulness and behavarioul intention to use mobile internet and is significant at 1 % level of significance, so the hypothesis is accepted.

Correlations

		perceived usefulness	behavarioul intention
perceived usefulness	Pearson Correlation	1	.789**
	Sig. (2-tailed)		.000
	N	100	100
behavarioul intention	Pearson Correlation	.789**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

2. The second hypothesis is also accepted at 1 % level of significance and there exists a positive relationship of 0.641 between perceived ease of use and behavarioul intention to use mobile internet

Correlations

		Perceived ease of use	Behavarioul intention
Perceived ease of use	Pearson Correlation	1	.641**
	Sig. (2-tailed)		.000
	N	100	100
behavarioul intention	Pearson Correlation	.641**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

3. There exists a week positive relationship between credibility and behavarioul intention to use mobile internet, so this factor affects to a lesser extent. So this factor is of least importance.

Correlations

		perceived credibility	behavarioul intention
perceived credibility	Pearson Correlation	1	.059
	Sig. (2-tailed)		.684
	N	100	100
behavarioul intention	Pearson Correlation	.059	1
	Sig. (2-tailed)	.684	
	N	100	100

4. This hypothesis is also accepted at 1 % level of significance. There exists a strong positive relationship between perceived compatibility and behavarioul intention to use mobile internet

Correlations

		behavarioul intention	perceived compatibility
behavarioul intention	Pearson Correlation	1	.792**
	Sig. (2-tailed)		.000
	N	100	100
perceived compatibility	Pearson Correlation	.792**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

5. There exists a strong positive relationship between social influence (family, relative, friends, colleagues etc) and behavarioul intention to use

mobile internet and the relation is significant at 1 % level of significance

Correlations

		social influence	behavarioul intention
social influence	Pearson Correlation	1	.740**
	Sig. (2-tailed)		.000
	N	100	100
behavarioul intention	Pearson Correlation	.740**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

6. As we see perceived innovativeness has strong effect on behavarioul intention to use mobile internet

Correlations

		behavarioul intention	perceived innovativeness
behavarioul intention	Pearson Correlation	1	.846**
	Sig. (2-tailed)		.000
	N	100	100
perceived innovativeness	Pearson Correlation	.846**	1
	Sig. (2-tailed)	.000	
	N	100	100

** Correlation is significant at the 0.01 level (2-tailed).

7. The hypothesis is accepted at 1 % level of significance and there exists a moderate positive relationship between service usage and behavarioul intention to use mobile internet.

Correlations

		behavarioul intention	service usage
behavarioul intention	Pearson Correlation	1	.497**
	Sig. (2-tailed)		.000
	N	100	100
service usage	Pearson Correlation	.497**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

8. There exist a strong positive relationship between perceived usefulness and perceived ease of use.

Correlations

		perceived usefulness	Perceived ease of use
perceived usefulness	Pearson Correlation	1	.757**
	Sig. (2-tailed)		.000
	N	100	100
Perceived ease of use	Pearson Correlation	.757**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

9. H9

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Gender	100	1.64	.485	.069
perceived usefulness	100	3.44	1.327	.188

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Gender	23.917	99	.000	1.640	1.50	1.78
perceived usefulness	18.327	99	.000	3.440	3.06	3.82

10. This hypothesis is rejected as there exist a negative relationship between age and perceived usefulness, i.e. lower age customers perceive the usefulness of mobile internet to be better as compared to higher age group.

Correlations

		range of age	perceived usefulness
range of age	Pearson Correlation	1	-.247
	Sig. (2-tailed)		.084
	N	100	100
perceived usefulness	Pearson Correlation	-.247	1
	Sig. (2-tailed)	.084	
	N	100	100

11. Education also have negative impact on perceived usefulness since it is perceived innovativeness that comes in the way. So education don't matters whether you are graduate, post

graduate. It is solely ones innovativeness .So hypothesis is rejected

Correlations

		perceived usefulness	education
perceived usefulness	Pearson Correlation	1	-.140
	Sig. (2-tailed)		.332
	N	100	100
education	Pearson Correlation	-.140	1
	Sig. (2-tailed)	.332	
	N	100	100

12.Income also have negative relationship with perceived usefulness .It is been found that people with low age group and with rarely no income or less income have a tendency to go for mobile internet.

Correlations

		perceived usefulness	income level
perceived usefulness	Pearson Correlation	1	-.189
	Sig. (2-tailed)		.188
	N	100	100
income level	Pearson Correlation	-.189	1
	Sig. (2-tailed)	.188	
	N	100	100

13. There exist a moderate positive relationship between those who have experience of stationary internet use and perceived ease of use .But this ease of use is considered more than that of mobile internet as shown below

Correlations

		stationary internet user	Perceived ease of use
stationary internet user	Pearson Correlation	1	.482**
	Sig. (2-tailed)		.000
	N	100	100
Perceived ease of use	Pearson Correlation	.482**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

14. Mobile internet user view perceived ease of use to be very week as there exists a week positive relationship between mobile internet user and perceived ease of use. Also the hypothesis is significant at 5 % level of significance.

Correlations

		Perceived ease of use	Mobile Internet user
Perceived ease of use	Pearson Correlation	1	.332*
	Sig. (2-tailed)		.018
	N	100	100
Mobile Internet user	Pearson Correlation	.332*	1
	Sig. (2-tailed)	.018	
	N	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

15. Definitely as the result shows those who have experience for stationary internet have also a knack towards using mobile internet ,since stationary internet experience help them to utilize for mobile internet use.

Correlations

		stationary internet user	Mobile Internet user
stationary internet user	Pearson Correlation	1	.519**
	Sig. (2-tailed)		.000
	N	100	100
Mobile Internet user	Pearson Correlation	.519**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

CONCLUSIONS

Perceived usefulness have a very high impact on the behavarioul intention of the consumers to use mobile internet. Maximum of the consumers feels that due to usefulness of mobile internet with respect to different use their intention to use is also more. Perceived ease of use or flexibility to use has also positive impact on the behavarioul intention of the consumers. A new factor is been judged in this paper, credibility but its effect on the behavarioul intention is

a bit week. Indian consumers don't consider this factor to be of much importance but has a positive impact. Indian consumers also feel that their tendency to use mobile internet is affected by its compatibility either to life style or work style. It is found while taking the survey that people generally use mobile internet due to strong influence of the society (family, relative, friends, colleagues, etc) out of which friends influence is the strongest one. More is the innovativeness of the consumer with respect to use of different new technology products more is their tendency to use mobile internet .So innovativeness have a positive influence on the behavarioul intention of the consumers. Behavarioul intention of the consumers has a moderate positive relation with service usage. Maximum Indian consumer who perceives the usefulness of the mobile internet more also perceives the easiness of its use to a greater extent. In the survey it is also found that there exists to such difference between gender for perceived usefulness of mobile internet. Lower age customers perceive the usefulness of mobile internet to be better as compared to higher age group as their innovativeness is also more. Higher age group is more comfortable with stationary internet. Education and perceived usefulness have a negative relationship to each other. It is been found that people with low age group and with rarely no income or less income have a tendency to go for mobile internet. Majority of consumer finds stationary internet to be having more perceived ease of use as compared to mobile internet use. People having experience of using Stationary internet have a more tendency to use mobile internet since they find it easy .But the relation is not so strong as it is also found during the survey mostly among young generation consumers that though they don't use stationary internet they have a tendency to use mobile internet.

Limitations of the study

1. The study is restricted to only Delhi and NCR region.
2. Out of Delhi and NCR some few places are only considered for study.
3. Some more factors can be considered for the study which is not included here.
4. There is a wide scope to study the impact of cultural factors on mobile internet use which is excluded here as behavarioul intention to use mobile internet varies strongly with different communities and cultures.
5. Mobile internet comprises usage of internet through mobile devices like mobile phone, laptop and others .But here Laptop is not considered for the study. So there is a scope for further study for other mobile products.
6. One factor perceived innovativeness is being considered for the study but the various innovative uses for which customers generally prefer to use mobile internet is not been studied here .Or in other words people intention to use mobile internet is generally for which kind of services like downloading, ring tones, gaming, news, mobile banking, ticketing or any other is not considered here. So there is further scope for research in that field .

REFERENCES

1. Adams, D. A., Nelson, R. R., Todd, P. A. (1992). Perceived usefulness, ease of use, and usage of information technology: A replication. MIS Quarterly, 16, 2, 227-247.
2. A Study of Behavioral Intention for 3G Mobile Internet Technology: Preliminary Research on Mobile Learning, 2005, Dulyalak Phuangthong and Settapong Malisawan, Ph.D.- *Proceedings of the Second International Conference on eLearning for Knowledge-Based Society, August 4-7, 2005, International Journal of The Computer, the Internet and Management*
3. *International Review of Business Research Papers, Vol.4 No.5. October-November 2008. PP.1-10,* Technology Complexity, Personal Innovativeness and Intention To Use Wireless Internet Using Mobile Devices In Malaysia, *Farzana* Parveen and Ainin Sulaiman
4. User acceptance of mobile Internet: Implication for convergence technologies *July 2007* Dong-Hee Shin.
5. An Empirical Analysis of Consumer Behavioral Intention toward Mobile Coupons in Malaysia, Sudarsan Jayasingh, Uchenna Cyril Eze, Volume 4, Number 2, December 2009, International Journal of Business and Information.
6. A cross-cultural study on mobile Internet usage, Ramin Vatanparast, Hamed Z. Qadim, winter 2009 • vol. 4 no. 2, International Journal of Mobile Marketing
7. Mobile Internet in India –December 2009, Research by IMRB & IAMAI.

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Impact of Retention Strategy on the Performance of Employees: With Reference to Haryana Based Professional Institutes

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Abstract : In educational institutions, faculty members are the major inputs in the process of generating learning as a major output among others. A structured faculty retention process will systematically lessen the gap between the faculties an institution currently has and the competent faculties it will eventually need to recruit to respond to challenges and inculcate right set of skills in students. This will help faculties achieve their best individual potential; it helps institutions respond to challenges with right set of talent available. An institution with talented faculties can develop a reputation for being great place to work, with great learning environment where quality in education is a foregone conclusion.

INTRODUCTION

Employee retention is increasing in importance as the competition for talent is high and still growing. The solutions to improve retention management are usually assumed to hinge on assessment, selection practices, and increasingly comprehensive HR programs and services. Competitive salaries, comprehensive benefits, employee services, incentive programs, and similar such initiatives are important when attracting and retaining employees but pay and programs are at risk of becoming commodities. It is not hard for a competitor to compete with individual elements of employment such as salaries and benefits (Taylor, 2002). On both the individual level and the organizational level, turnover imposes extensive costs according to Mitchell et al (2001). At the individual level, regardless of the fact whether the person leaves voluntarily or is compelled to leave, the transitions to another job or situation take a personal toll. The estimated time for adjustment to be made and a career to get back on track is up to one year, and probably in some cases even more. The problem for the organization arises when departing employees take along with themselves their valuable knowledge and expertise gained through experience.

REVIEW OF LITERATURE

Johnson (2007) asserts that employee retention is heavily dependent upon two key factors; leadership skills of management and human resource strategy. No matter how wonderful the company is, people will not stay if their front-line supervisor is an untrained person with poor managing skills. According to Alvesson (2000) the knowledge workers are the ideal type of employees, in terms of work motivation and compliance, since they often identify themselves as being committed, hard-working persons. According to Levoy (2007) people move faster, interact with more visible animation, communicate with more palpable emotion and enthusiasm, listen more intently and respond more vigorously in a happy environment. Guld (2007) states that while continual recruitment of skilled workers should be a company's top priority, it should still be argued that their retention should be even more important. Karin (2008) states that one of the important steps to putting in place a sound staff retention policy in any organization is to establish and

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understand the reasons why employees resign. Using staff retention as a key performance indicator, for the management team, would assist in tracking and monitoring initiatives to retain key personnel. Similarly, Ruschak (2005) notes that retention is a critical issue in many industries, including health care. This can be done by providing teachers with opportunities for educational advancement and professional growth by alleviating conditions in the schools that limit the realization of intrinsic rewards that are a major source of teacher job satisfaction (Engelking 1986).

Hedberg and Helenius (2007) investigate and analyze how company leaders today can retain their key employees. Skilled leaders create a culture of retention, becoming a key in why people stay and what usually drives them away from a company. When retention is a core value, good things happen for customers, employees, and the company.

Boyens (2007) focuses on the reasons of involuntary turnover, voluntary turnover, and promotion for employees to leave a particular company. Furthermore, he says that the two types of turnover are the most devastating for organizations. According to an article in Knowledge Management Review by Young (2006), companies are faced with people leaving to join other companies. The average worker is changing jobs ten times between ages of 18 and 37 continuously. Young says that one answer to this issue is to believe that you can purchase knowledge to replace what you are losing. Another article in Industrial Distribution by McCrea (2001) says that employees today change jobs frequently and do not have the company loyalty that existed 30 years ago when your valued employees were hired. The article, The battle for brainpower (2006), also states that loyalty to employers is fading. Thanks to downsizing, job security in return for commitment has been breaking down. Also replacing retired workers has become quite a challenge because of the low unemployment rate.

Lee & Mitchell (1994) presented a model for understanding employee turnover called 'the unfolding model of voluntary employee turnover'. Their model is based on Beach's (1990) 'Image Theory' model for decision-making. Only in rare instances does one choose to alter the established ways of behaving. Lee & Mitchell (1994) applied image theory on VET and introduced the concept of "shocks to the system" as a type of information exposure that induces the employee to rethink and reevaluate his/her current employment status. The approach in the unfolding model differs somewhat from the traditional research that may not provide sufficiently strong guidance on how knowledge workers might be retained (Lee & Maurer, 1997).The environment that teachers work in influences a teacher's satisfaction level. Feeling like a professional where they have control over their work influences retention rates (Alt et al., 1999; Ingersoll, 2001; Ingersoll & Alsalam, 1997; Luekens et al., 2004; Moore-Johnson & Birkeland, 2003; Perie & Baker, 1997; Riehl & Sipple, 1996).

OBJECTIVES OF THE STUDY

Though the statement of the research problem brings out the basic objective of the study depicting the macro view of the subject at hand yet to make the study more focused, the macro objective have been segregated into divided into micro objectives. In fact the accomplishments of the micro objectives ultimately contribute to the achievement of the macro objective and the same have been detailed as under:

1. To study the various factors those influence the faculty retention in professional institutions of Haryana state.
2. To describe personnel retention strategies used by professional institutions of Haryana state.
3. To determine potential barriers to the retention of faculties.
4. To recommend management strategies that can be implemented to foster faculty retention at professional institutions of Haryana state.

RESEARCH DESIGN AND METHODOLOGY

A total of 500 questionnaires were distributed to the faculty of Haryana based professional institute. All the 430 questionnaires which were returned were found usable that represents a questionnaire return rate of 86%. Data collected were analyzed through a series of validated tools and procedures like average, percentage, weighted average and mean score were calculated. The overall results that emerged from the study were of personnel who were not satisfied with various aspects of their working conditions. With reference to the job satisfaction factor, lack of freedom taking in decisions that affect them, and lack of autonomy were found to be de-motivating. The study identified interpersonal relations a strong retention factor. The teachers experienced very good interpersonal relations with colleagues, students, parents and but not with the administrators. The study shows that there was need for close guidance and supervision in form of mentoring to both beginner and experienced faculties in fulfilling their responsibilities. The study further revealed that there was positive relation between age and work experience with faculty retention but academic qualification did not significantly affect faculty retention.

PROBLEM STATEMENT

Although quality teachers impact the student learning and performance, but retention is a reality that has to be dealt with seriously. It is a common Indian phenomenon that employers find it too difficult to find and retain the right people for the simple reason that the best ones are leaving for better paying jobs abroad. Employees, especially the skilled ones, are in constant search for better jobs, working environment, experience and training that could enhance their skills and sustain them in their jobs.

DATA ANALYSIS AND INTERPRETATION

In chapter three the research methodology, design and the research instrument were discussed that used to analyze the research objective. Now, the data that was collected from faculty of different institute administered through questionnaire and interview analyzed and interpreted in this chapter.

BIOGRAPHICAL PROFILE OF RESPONDENTS

Table – 1 Distribution of respondent by gender

Gender	Total sampled	Total received	% Received
Male	210	158	75.24%
Female	290	272	93.79 %
Total	500	430	86%

Table 1 reflects that out of the 500 questionnaires which were distributed only 430 were received, representing the return rate of 86.%. The table further shows that 272 (93.79%) were females while 158 (75.24%) were males; hence the majority of respondents were females. It shows that majority faculty in the north Indian colleges were female.

Distribution of Respondents by Age

The researcher establish the ages of the faculty who respond in the study. It was assumed that the age of the respondents might have a bearing on the problem being analyzed. The results on the ages of the respondents are presented in table 2 below.

Table – 2 Distribution of respondent by age

Age	Frequency	Percent
25 and below	45	10.46%
26-35	145	33.72%
36-45	130	30.24%
46 and above	110	25.58%
Total	430	100%

Table 2 indicated that 10.46% of the respondents were aged 25 years and below, 33.72% were aged between 26-35 years and 30.24% were between 36-45 years while the remaining 25.58 were aged above 46 years. This showed that the majority of respondents were belonged to the range 26-35 and 36-45 years.

Distribution of respondents by academic qualification

Educational qualifications play an important role in the manner in which individuals play different roles they hold in society. The researcher observed that academic qualifications of the respondents were worthy investigating on since such qualities had a bearing on retention of faculty in an institution.

Table – 3 Distribution of respondent by academic qualification

Academic Qualification	Frequency	Percent
High school graduate	0	0%
College graduate	130	30.23%
Master level	225	52.33%
Doctoral level	75	17.44%
Total	430	100%

Table 3 shows that 30.23% of the respondents were college graduates while 52.32% hold masters degree. According to the finding only 17.44% possessed doctoral degrees. It was worth noting that no respondent was a high school graduate because of college graduate is the minimum qualification of being a faculty.

Distribution of respondents by work experience

Experience was considered to be a contributory factor in faculty retention. The researcher found that it necessary to establish the faculty work experience at the college. The results of the respondents are in table 4 below.

Table – 4 Distribution of respondent by work experience

Work Experience in Year	Frequency	Percent
5 and lesser	150	34.88%
6 and 15	120	27.91%
16-25	87	20.23%
26-35	63	14.65%
36 and above	10	02.33%
Total	430	100%

In terms of work experience, table 4 shows that the majority of the respondents 34.88% had 5 years and lesser of teaching experience, followed by those with 27.91% and 16-25 years 20.23% respectively. Furthermore, 14.65% had 26-35 years while 2.33% only had 36 and above years of work experience. This indicated that most teachers in the sample were relatively young in the teaching profession.

QUANTITATIVE FINDINGS

The results of the close-ended survey questions are analyzed below. The close-ended questions related to working conditions, incentives, job satisfaction, mentoring, and staff development.

Table 5: Items associated with working conditions as a factor influencing retention

Variables	Mean scores	Rank order
1.1 Physical building	4.05	1
1.2 Class size	3.75	3
1.3 Material and resources	3.32	5
1.4 Support from administrator	3.50	4
1.5 College climate	3.90	2

Items associated with working conditions as a factor influencing retention

Information in table 5 shows that faculty ranked physical building (mean = 4.05) as the most important factor followed by college climate (mean = 3.90). Class size (mean=3.75) ranked third while support and administrator (mean = 3.50) ranked fourth and material and resources (mean = 3.32) was ranked last. In this given scenario, it would appear that positive college climate coupled with support from administrator give positive impact on faculty retention in any educational institution.

Table 6: Items associated with incentive as a factor influencing retention

Variables	Mean	Rank order
2.1 Salary advance & emergency loan	3.96	3
2.2 Educational benefit for my children	3.65	5
2.3 Study leave assistance for further studies	4.27	1
2.4 Financial assistance in times bereavement	3.89	4
2.5 Use of college vehicles for private purposes	3.23	7
2.6 Sympathetic gesture when sick	4.05	2
2.7 Employees to acquire expertise, trainings	3.50	6

The respondents ranked highest study leave assistance for further studies (mean = 4.27). This figure indicates that may be the college administration ranked their employees qualification as a priority. Sympathy gesture when sick and salary advance and emergency loan ranked second (mean = 4.05) and third (mean = 3.96) highest respectively. This was possibly the position because this aspect is very crucial in terms of sympathy support which is given for free, when it is highly required by the employees. Faculty would rather remain in an institution where financial support in terms of advanced salary and emergency loan for the employee and their family was assured.

Table 7: Items associated with job satisfaction as a factor influencing retention

Variables	Mean	Rank order
3.1 Employed on permanent basis	4.10	2
3.2 Developed my skills & gained expertise	4.20	1
3.3 Obtained higher qualification	3.95	3
3.4 Option for optional retirement	3.75	6
3.5 Right to join the union	3.80	5
3.6 Enjoy fringe benefits	3.87	4

Financial assistance in times of bereavement was ranked fourth (mean = 3.70) this could have been influenced by the fact that long life expectancy and the low death rate in the India meant that not too many of the respondents may have had family bereavement in the recent past. Educational benefit for my children was ranked fifth (mean = 3.65) since it goes hand in hand with or supports the same idea of financial support at the time of requirement or emergency. Allowing employees to acquire expertise and training was ranked sixth (mean = 3.50). Provision of institutional vehicles for private purposes was ranked last (mean = 3.23) because vehicles may not be available all the time for all faculty in the institution. It would become a priority area to be attended to when the above mentioned factors have been attended to.

Table 8: Items associated with mentoring as a factor influencing retention

Variables	Mean	Rank order
4.1 Available support service	4.05	2
4.2 Colleges appraisal system	4.15	1
4.3 Nurtured professionally through distance learning	3.80	3
4.4 Natured spiritually through retreats and prayers	3.70	4

Table 8 shows that college's appraisal system ranked first (mean = 4.15) in this investigation. This was followed by the available support service ranked second (mean = 4.05), nurtured through distance learning ranked third (mean = 380) and nurtured spiritually through retreats and prayers ranked last (mean = 3.75). The results show that there was need for ongoing personnel assistance to both new and old faculties. This could indicates that the college has to provide moral and spiritual foundation programs through professional training, support seminars, and other life skills to the faculties of all categories.

Table 9: Items associated with staff development as a factor influencing retention

Variables	Mean	Rank order
5.1 Higher position with commensurate amount in salary	4.25	1
5.2 Enhance my leadership skills	3.80	5
5.3 Acquire expertise though seminar and training	4.08	2
5.4 Share expertise with colleagues in workplace	3.89	4
5.5 Pursue further studies through scholarship	3.95	3

Items associated with staff development as a factor influencing retention

Table 8 shows that higher position with commensurate amount in salary was ranked first (mean = 4.25). Being professionally trained meant acquire expertise though seminar and training was on second (mean = 4.08). Pursue further studies through scholarship ranked third (mean = 3.95) together with discussing the acquired knowledge with colleagues at the workplace ranked fourth (mean= 3.89). Enhance my leadership skills ranked on fifth (mean= 3.80). The present study also consistent with O'Neil, (1994) who analyzed that professional development was driven by the individual, with the institution providing logistic support for the development. This study reveals that professional development with handsome salary was the concern of every educator.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The final conclusions highlighting the findings of this study were discussed in this section. The overall results that emerged from the study were of personnel who were not satisfied with various aspects of their working conditions. The study identified working conditions as a one of important that influence the motivation and retention rate of an institute. Some aspects of working conditions such as lack of materials and physical conditions of classrooms appeared as de-motivators. The other de-motivating factor of working conditions emerged as the inadequate salaries and physical environment (inadequate materials and practices). With reference to the job satisfaction factor, lack of freedom taking in decisions that affect them, and lack of autonomy were found to be de-motivating. The other aspect of job characteristics which emerged as motivators included positional advancement or promotion and opportunity for participation in professional development programs. Although the faculties in the present study were not highly satisfied with their jobs, but there were some other faculties who were satisfied and motivated with certain aspects of their work. The study identified interpersonal relations a strong retention factor. The teachers experienced very good interpersonal relations with colleagues, students, parents and but not with the administrators. Faculties like to enjoy the opportunity to work with students and shape their future and they saw colleagues as a source of friendships, a source of support in time of difficulty and source of strength

when impositions were placed on one (Cockburn 2000). One of important retention strategy which was discovered by this study which enhanced faculty retention was college climate. The study shows that there was need for close guidance and supervision in form of mentoring to both beginner and experienced faculties in fulfilling their responsibilities. The study further revealed that there was positive relation between age and work experience with faculty retention but academic qualification did not significantly affect faculty retention. In this section, major conclusions highlighting the findings of this study were presented. In the next section major recommendations were provided.

Recommendations

The following are the recommendations for educational practitioners and policy makers:

- The way or manner in which faculty retention strategies were being implemented had been noted to influence on faculty retention in negatively. The observation from interviews and literature suggested that the institute management found it difficult to manage the implementation of faculty retention strategies meaningfully due to several hurdles.
- The faculty's general conditions of employment needed to be improved. Faculties should be allowed to learn rather than requiring them to perform non-teaching duties in instructional time.
- Policies that affected the faculties' professional lives should need to be inclusive with active participation of faculty rather than not be formulated top-bottom.
- Policy analysts and education practitioners should focus on effective implementations of incentives strategies as a primary step. Such incentive strategy could have a significant positive impact on teacher morale and job satisfaction, retention as well as institute performance.
- Policy makers in academics should strive to make professional development a legal requirement for all faculties including institute heads. These professional development programs could help faculties to actualize their professional as well we personal needs.

RECOMMENDATIONS TO COLLEGE MANAGEMENT

College management plays a significant role in improving faculty retention since they could provide faculties with the good working environment, achievement advancement that they needed for high productivity (Gullatt and Bennett 1995). The result of present study suggested that action must be taken in college to address the problem of motivation, job satisfaction and faculty retention. Evans (2001) argues that morale, job satisfaction and motivation are best able to be enhanced and improved at the institutional level. From a management perspective, the following recommendations represent some practical and realistic steps for administration to address the faculty concerns.

LIMITATIONS OF THE STUDY

This section presented the limitations of the empirical investigations. The present study had a number of limitations. The results of this study must be considered and applied with several considerations in mind:

- First, the results of the present study only drew a picture of factors and strategy of faculty retention applicable only in professional institutes of Haryana.
- Second, the study was geographically restricted only to Haryana, and because it involved only some college of that particular area, the perceptions and attitudes of college faculty in other colleges would remain unknown in the India.
- Third, the study was entirely based on self-report information. It was assumed that all faculties participated in this study completing the questionnaire did so sincerely and honestly.

REFERENCES

- AACSB (2002), "Management education at risk", Report of the Management Education Taskforce, August, AACSB.
- Caldwell, B. (1990), "Educare: A New Concept for Our Profession Dimensions", Vol. 18 No. 4, pp. 3-6.
- De Vos, A. S., Strydom, H., Fouche, C. B., Delport, C. S. L. (2005), "Research at Grass Roots: For the Social Sciences and Human Service Professions", *3rd Edition*, Pretoria: Van Schaik.
- Fister, K. (2004), "Cultural Influences on the Adoption of Knowledge Orientated HRM Practices", Port of Koper, Slovenia, pp. 183-197.
- Hedge, N. (2004), "Best practice: Retention", HR department, Orios.
- Schulze, S. (2002), "Research Methodology", Pretoria: University of South Africa.

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Study of the Working Capital Management in Manufacturing Firms A Case of SMEs

Venu Gupta

Abstract : The competitive nature of business environment requires firms to adjust their strategies and adopt good financial policies to survive and sustain growth. Most firms have an important amount of cash invested in current assets, as well as substantial amounts of current liabilities as a source of financing. This paper therefore analyses the working capital structure and financing pattern of small to medium-sized Indian manufacturing firms, using primarily secondary data. Structural differences in working capital and the financing pattern of the sample firms are analysed and the results showed significant structural changes over the study period. The research finding revealed disproportionate increase in current asset investment in relation to sales resulting in sharp decline in working capital turnover. The analysis also revealed an increasing trend in the short-term component of working capital financing; in particular trade credit and other payables have financed the major part of working capital. This over-concentration on short-term funds is a reality of the SMEs as they often faced difficulties in raising finance and they are viewed to be Information ally opaque. Using multivariate analysis, the determinant of working capital financing is investigated and the results confirmed the dominance of short-term financing, proxy as a proportion of current liabilities over total assets.

Key words: Working Capital Structure; SMEs, Working Capital Financing; Multivariate analysis

INTRODUCTION

Financing of working capital has become a very significant area of financial management more specifically for the SMEs. Given the changing economic conditions, which is more and more characterised by globalisation and increasing competition, the area of working capital financing (WCF) has assumed added importance as it greatly affects firm's liquidity and profitability. Working capital is financed by a combination of long-term and short-term funds. No doubt, easy accessibility of finance is an important factor to decide about the source of finance, but its impact on risks and return cannot be ignored (Gitman, 2000). This paper attempts to examine the differences in working capital structure of small to medium-sized manufacturing firms operating in diverse industry groups. A second objective of the research is to analyse the WCF pattern of the sample firms and to investigate into the role of short term funds as a source of financing. A multivariate model is used to examine the important variables that are expected to influence the level of short-term financing. Traditional commercial banks and investors have been reluctant to service SMEs for a number of well known reasons:

- SMEs are regarded by creditors and investors as high- risk borrowers due to insufficient assets and low capitalisation, vulnerability to market fluctuations and high mortality rates;
- Information asymmetry arising from SMEs' lack of accounting records, inadequate financial statements or business plans makes it difficult for creditors and investors to assess creditworthiness of potential SME proposals;
- High administrative/transaction costs of lending or investing small amounts do not make SME financing a profitable business.

RESEARCH METHODOLOGY

In the present paper, the components of gross working capital is analysed to see whether there has been any structural changes over the period of study. The role of short-term funds as a source of WCF is

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also investigated. This is achieved by analysing the components of working capital and the pattern of WCF for the sample units over the six years period. The study also attempts to assess the liquidity of the 100 sample manufacturing firms, using a comprehensive test based on liquidity ranks. This is calculated first by assigning individual ranking to the four main components of current assets and then sum up the individual scores to arrive at an ultimate rank. The paper attempts to model the use of short-term financing using multivariate analysis. Given the character of the data, this part of the analysis applied a panel data methodology. The sample was selected from the directory of National Small scale industries corporation (NSIC), which is a database for registered manufacturing firms operating in diverse activities and for which data was available for a six year period, covering the accounting period 2006-07 to 2012-13. This includes all firms for which secondary data was compiled to examine the working capital structure and financing patterns of the small to medium-sized Indian manufacturing firms. A random sample of businesses was selected from the 2005 directory of SMEs.

Descriptive Statistics Table 1: Summary statistics (small manufacturing firms, 2006-07 to 2012-13)

	Median	Average	Standard Deviation
Accounts payable	21%	32%	46%
Cost of sales	99%	126%	98%
Sales growth	0.025%	0.7%	4.11%
Assets:			
Total assets (Rs'000s)	4,025,038	8,115,219	11,900,000
Non-financial fixed assets	31%	36%	39%
Current assets	54%	61%	78%
Accounts receivable	20%	26%	48%
Inventories/Stocks	22%	28%	32%
Cash and bank balances	0%	5%	14%
Other short-term assets	12%	19%	21%
Sources of funds:			
Short-term funds (CL)	52%	60%	68%
Short-term financial debt	5%	6%	9%
Short-term bank debt (OD)	14%	15%	14%
Long-term funds	15%	22%	33%
Long-term financial debt	10%	15%	21%
Long-term non-bank debt*	5%	8%	12%
Ownership ratio	25%	18%	70%

Notes:
All variables are percentages of total assets, except total assets and sales growth

*Includes Shareholders loan and Leasing, which is a common source of finance for the Indian SMEs

DATA ANALYSIS AND RESULTS

This section analyses the small to medium-sized Indian manufacturing firms' working capital structure to examine the structural changes over the period of the study. The main theoretical arguments and empirical evidences around the small firms demand for finance were discussed, with more focus on WCF. The descriptive statistics for the sample are displayed in *Table 1*. Current liabilities are on average 60 % of total assets and the share of account payable in current liabilities is to the tune of 62% (*Table 2*).

Table 2: Financing patterns of working capital *(figures in Rs'000s)*

	2006-8	2006-7	2007-8	2008-9	2009-10	2010-11
1. Gross working capital	371,579	419,947	464,703	497,462	570,487	593,400
2. Sources of WC (i) short term funds (ii) long term funds	343,327 28,252	362,940 57,007	414,340 50,363	423,904 73,558	489,323 81,164	503,129 90,271
3. Total long term funds	274,850	323,174	353,691	385,977	444,788	452,306
4. % of LT funds used to finance WC	18.2%	17.6%	14.2%	19.1%	18.2%	20%
5. Shareholders loan LT borrowings	84,465 62,767	27,062 75,826	43,578 90,782	40,674 106,914	25,734 112,053	31,534 98,296
6. Owners equity	187,618	220,486	222,331	238,389	306,691	322,477

As for the assets, current assets constitute on average 59% of total assets while accounts receivable represents 43% of current assets. Thus, the sample units are net receivers of trade credit which confirms the importance of trade credit as a source of financing for the small to medium-sized Indian manufacturing firms. A similar finding was reported in the study of Howorth and Wilson (1998). It is observed that a lesser proportion of long-term funds are used to finance working capital, which implies that the sample units have no choice than to rely on short-term sources to fund both the permanent and circulating part of their current assets. Stocks, another major component of current assets, are on average 28% of total assets (median value is 22%). However, on average only 6.5% of assets are financed with short-term financial debt and another 24% is granted as cash credit by banks. The share of long-term debt used to finance working capital is insignificant and thus confirms the *priori* claim that small firms face difficulties to secure long-term financing and it accords with the 'POH'. Average long-term debt is about 23% of total assets, including shareholders loan and leasing. Thus, there is less scope for the sample firms to accommodate late

payment by increasing equity or long term debt and a similar finding was observed in Bannock (1991). Therefore the two main avenues open to an SME suffering from late payment are to increase short-term bank borrowing, or delay payments to creditors. The mean long-term debt (GEAR) of the sample firms is 0.22 while that of short-term debt (CLTA) is 0.60, which clearly shows the importance of short-term debt over long-term in SME financing. Interestingly internal equity financing appears to constitute 18% of the capital of the Indian manufacturing SMEs. However, the share of short-term financial debt represents only 6% of the financing need of the SMEs; thus confirming the difficulties which the sample firms faced in procuring WCF. One would therefore expect firms with more short-term assets, *ceteris paribus*, to have a higher demand for short-term credit in general and accounts payable in particular. The sample firms have an average of 61 % as current assets and this is being financed out of short-term funds (60%), comprise mainly of trade credit, cash credit, short-term borrowing and other payables. While analysing the firms' specific data, the sample firms tend to bridge shortfall in long-term financing by leasing some of the fixed assets and raise loans from their directors.

Trends in Working Capital

Table 3 analyses the trends in gross working capital and net working capital for the sample firms and also to see whether over the six year period, the firms have adopted different WCF policies, by calculating the ratio current liabilities to current assets. Throughout the period 1998 to 2003, the sample firms displayed a positive net working capital, but the ratio of current liabilities to current assets shows that nearly 85% of the current assets are met out of current liabilities.

Table 3: Trends in current assets, current liabilities and NWC for 2006-07 to 2012-13

Year	Current Assets Rs'000s	Current Liabilities Rs'000s	Net Working Capital Rs'000s	CL/CA
2007	371,579	343,327	28,252	0.92
2008	419,947	362,940	57,007	0.86
2009	464,703	414,340	50,363	0.89
2010	497,462	423,904	73,558	0.85
2011	570,487	489,323	81,164	0.86
2012	593,400	503,129	90,271	0.85

Given that easy accessibility of finance dictates the decision of the owner-manager, the sample units have predominantly use short-term finance to support its current operations. Given this trend, the working capital structure is analysed to discuss briefly the important sources of WCF.

Sources of Working Capital

Deciding the size and means of financing the current assets is a continuous challenge to financial manager or owner manager of small firms. *Table 4* shows the trends and composition of current liabilities and the financing patterns of working capital for the sample firms.

Table 4 Composition of current liabilities: sources of working capital- *(figures in Rs'000s)*

	2006-8 N=85	2006-7 N=99	2007-8 N=100	2008-9 N=101	2009-10 N=86	2010-11 N=86	Average N=356
Trade Credit	122,953 36%	129,800 36%	157,367 38%	185,173 44%	228,324 47%	222,375 45%	179,665 40%
Other Payables	58,000 17%	65,380 18%	84,008 20%	80,728 19%	89,226 18%	112,943 22%	81,722 18%
Other Current Liabilities	64,554 19%	46,850 13%	37,315 9%	24,155 6%	33,927 7%	40,813 8%	37,940 9%
Overdraft	99,790 29%	96,154 26%	106,089 26%	103,063 24%	101,802 21%	99,873 20%	100,400 23%
Short Term Borrowings	21,617 6%	22,879 6%	27,005 7%	29,117 7%	29,446 6%	42,266 9%	29,810 6.5%
Current Liabilities	343,327 100%	362,940 100%	414,340 100%	423,904 100%	489,304 100%	520,129 100%	422,303 100%

As showed in *Table 4*, short-term funds (namely trade credit, other payables, bank overdraft, short-term borrowing and other current liabilities) have played a dominating role throughout the period of the study. It has provided over 85% of the WCF needs and this over-concentration is a reality of the SME sector. This could be explained by the fact that suppliers may have significant cost advantages over financial institutions when it comes to providing credit to their customers. In a matching context one would in the first place expect other categories of short-term debt to be substitutes for trade credit. The share of short-term bank debt has average to 6.5% while the sample firms' reliance on bank overdraft has showed a downward trend, which testified the difficulties of the Indian SMEs in getting traditional sources of finance.

Financing Patterns of Working Capital

Table 5 also exhibits an overall increasing trend in the use of long-term funds as a source of working capital during the period. It rises from 10.3% in 1998 to 19.1% in 2001. This trend speaks of difficulty in procuring WCF. This source of finance is to a large extent supplement by shareholders/directors loan, especially where the sample firms lack collateral assets. Financing is yet another important issue in the management of working capital of a firm. Firms with inadequate working capital suffer from underutilisation of capacity resulting in the extension

of break-even point. It is observed that the sample firms have diverted long-term funds to finance working capital as the share of traditional sources of finance has declined. But, however, in practice a firm has to choose a combination of the two modes of financing a particular level of working capital. This obviously depends on a multiple of factors like flexibility, risk preference, demand and supply position in the money market, and cost of financing. The other payables (19%) are the major short-term (internal) sources that are used till their time for payment becomes due. Diversion of working funds for meeting long-term requirement because of negative net working capital was observed for some of the selected firms. Analysis of the sample firms' financing data showed that there are four main categories of sources of working capital which are as follows:

- Trade debt and other payables
- Provisions and other non-bank short-term borrowings
- Short-term bank borrowings
- Net working capital from equity and/or long-term borrowings

It is expected that this gap to be met partly by bank borrowing or cash credit facilities, the balance being supported by equity and/or long-term borrowings. *Table 5* showing the percentage composition of WCF, clearly demonstrates the increasing dependence on this source for additional funds.

Table 5: Percentage composition of working capital finance (figures in %)

	2006-7	2007-8	2008-9	2009-10	2010-11
Trade debts and other payables	46	52	54	56	53
Provisions and non-bank STB	12	11	8	5	7
Short-term bank borrowings	31	29	29	27	24
Net working capital	9	11	11	14	16
Total Current Assets or Gross	100	100	100	100	100

Trade debt and other payables have grown at a rate faster than the rate of increase in sales, as indicated by the growth trend index. It may thus conclude that the sample firms postpone payments to creditors as a way out to ease their financial difficulties. It is noted that the small firms do not have much scope to use non-bank short-term borrowings (a lower share of the composition of WCF). Equally short-term bank borrowing represents a lower share of the overall WCF and its dependence has showed a declining trend. *Table 6* gives supplementary information on the firms' pattern of WCF, including sales data and growth trend index. The '*net working capital*', representing residual support to working capital from equity and/or long-term borrowing though accounting for only a small fraction of total WCF has increased over the period of study. This demonstrates that the increase in sales which could be partly 'seasonal' is being financed out of long-term sources, which accords well with the finance literature. However, for the sample firms, this is partly met by a disguised form of equity; that is, shareholders loan. The working capital, constituting support from equity and/or long-term borrowings was as low as 13% of working capital funds. The firms' reliance on short-term bank borrowing has declined over the period of study and the fluctuations in sales are mainly financed by postponing payments to suppliers and long-term sources. In all the years the ranking of the contribution to gross working capital was the same; that is trade debt; short-term bank borrowing, equity and/or long-term borrowing and lastly non-bank short-term borrowing. Interesting the growth index for the sample firms' long- term finance has more than triple over the period of the study, though it finances only 20% of the gross Working capital.

LIQUIDITY RANKS

An attempt has been made to assess the liquidity of the 100 sample manufacturing firms, using a comprehensive test based on liquidity ranks (Mallick and Sur, 1999). This is calculated first by assigning individual ranking to the four main components of current assets and then sum up the individual scores to arrive at an ultimate rank. The four criteria as showed in *Table 6* are stock to current assets ratio (STCR), debtors to current assets ratio (DTCR), cash and bank balances to current assets ratio (CTCR) and other current assets to current assets ratio (OTCR).

Table 6: Statement of ranking in order of liquidity: 100 firms for the period 2005-06 to 2011-12

Year	STCR %	DTCR %	CTCR %	OTCR %	Liquidity Ranks					
					STCR	DTCR	CTCR	OTCR	Total Rank	Ultimate Rank
2006	49	32	5	14	6	6	6	1	19	6
2007	47	34	6	13	5	5	5	2	17	5
2008	45	35	7	13	3	3	4	2	12	3
2009	46	36	8	10	4	2	2	6	14	4
2010	42	36	8	12	1	1	2	4	8	1
2011	43	35	11	11	2	3	1	5	11	2

Kendall coefficient of concordance among four sets of liquidity ranks (W) is 0.58 and Chi-square value of W is 11.60. Critical value of χ^2 at 0.005 per cent for (n-1) (c-1), i.e 15 degree of freedom is 32.80

Variables definition in Appendix 1

Investment in the various categories of current assets has an incidence on the liquidity of an enterprise. The category of current assets which

forms the largest component in total current assets will, therefore, affect liquidity of the enterprise in a significant way. A comprehensive test based on the sum of scores (liquidity ranks) of separate individual ranking under the four criteria are given in *Table6*. A high value of DTCR, CTCR, and OTCR indicate greater liquidity and ranking has been done in that order. On the other hand, a low STCR shows a more favourable position and hence ranking has been done in that order. For the manufacturing enterprises, stock of raw materials and finished goods are a significant item and tying a large proportion of current assets in stock means the business enterprise will face liquidity problems. Kendall's coefficient of concordance (W) is computed to determine the degree of uniformity among the four sets of rankings and Chi-square test has been applied for testing the significance of such coefficient. *Table 6* indicates that the overall liquidity of the sample firms in the later years was better than in the early years of the study. The notable decline in stock level is a contributing factor alongside the increasing trend in cash and bank balances. The computed value of W is 0.58 and is not statistically significant. It reveals that there is no close association among the liquidity of various components of working capital during the period of study.

Relationship between Liquidity and Profitability

Most standard finance text book have a section which emphasises on the trade-off between liquidity and profitability. The theory stipulates a negative relationship whereby a high level of liquidity sacrifices profitability. *Table 7* attempts to measure the degree of relationship between liquidity and profitability of the sample units by computing Spearman's rank correlation coefficient R/p.

Table 7: Analysis of rank correlation between liquidity and profitability

	2006	2007	2008	2009	2010	2011	
Liquidity Rank as per Table (L)	6	5	3	4	1	2	Rank Correlation between liquidity and profitability (Rlp) is -0.794 and 't' value of Rlp is 0.059 being significant at 0.10 level. Critical value of 't' at 0.10 level with 5 degrees of freedom is -1.476
Operating Profit Profitability	6	6	5	4	1	-1	
Rank (P)	1	1	3	4	5	6	

The above figures confirmed the negative relationship between profitability and liquidity, though showing a weak significance. The years 2010 and 2011 which reported a better liquidity position adversely affected the profitability of the sample units. Shin and Soenen (1998) and more recently Deloof (2003) empirically showed that a lengthening of the trade cycle impact negatively on the profitability of large corporate companies. It may be deduced that in the later period of the study, the sample units have maintained higher level of debtors and cash and bank balances, but to the detriment of profitability.

Multivariate Analysis

The major part of the analysis has examined the sample firms' working capital structure and the financing pattern, using non-econometric techniques. In order to understand the WCF of the Indian manufacturing firms and to determine the significance of the variables as discussed below, multivariate analysis is applied by specifying a regression model as in equation (1). Given the panel nature of the data, there may be an argument to support the use of a static framework for examining the relationship of the sample firms' short term financing to a number of variables expected to influence that decision. The lack of financial data points over time suggested that employing a static framework was more appropriate. In particular, the limited data points over time would most likely lead to high standard errors on such panel analysis, resulting in a relatively low powered test.

Variables

A brief definition of the variables and the expected relationship between the dependent variable and the explanatory variables are given below. The dependent variable is CLTA, the ratio of current liabilities to total assets and is used as a measure of short-term financing. GEAR is used to denote the long-term debt as a proportion of total assets. The literature review section has provided both theoretical arguments and empirical evidences on the use and availability of such financing mode to the SMEs. A firm's share of short-term financing is expected to increase as its ability to raise debt is constrained by external or internal factors. It is therefore hypothesised that the variable GEAR is negatively associated with the dependent variable. ROTA is a measure of the firm's profitability with respect to the level of investment. It is calculated as operating income divided by total assets. As firms become profitable, they are expected to use internally generated funds to meet their working capital needs and place less reliance on short-term financing.

Empirical evidences examining SMEs lend support to the negative relation between debt (long-term and short-term) and profitability (Chittenden *et al.*, 1996; Michaelas *et al.*, 1999; Cassar and Holmes, 2003). Based on that, a negative relationship between profitability and short-term financing is hypothesised. CATA is a measure of the asset structure and is the ratio of current assets to total assets. As this ratio increases, by an increase in the level of stocks and debtors, they mirror an increase in the use of trade credit, cash credit and short-term borrowing. This variable is thus positively related to the short-term debt and this was evidenced from the earlier analysis. The independent variables as briefly discussed above are summarised below and are expressed in equation (1):

$$CLTA_{it} = \beta_0 + \beta_1 \ln sales_{it} + \beta_2 gear_{it} + \beta_3 rota_{it} + \beta_4 turnca_{it} + \beta_5 growth_{it} + \beta_6 cata_{it} + \varepsilon_{it} \quad (1)$$

Where the dependent variable is CLTA and the subscript *i* denoting firms (cross-section dimension) ranging from 1 to 100 and *t* denoting years (time-series dimension), ranging from 1 to 6.

lnsales = natural logarithm of sales, a proxy for size

gear = long-term debt to total assets

rota = return on total assets before interest

growth = growth index of sales (for each firm over the six years period)

turnca = sales divided by current assets as a measure of Gross working capital efficiency

cata = current assets to total assets as a measure of gross working capital requirements

skca = stock to current assets (Model 2)

tdca = debtor to current assets (Model 3)

Table 1 provides a summary of the descriptive statistics of the dependent and independent variables. The mean short-term financing of the sample firms is 0.60 and the mean long-term debt suggests that it represents 22% of the capital of the SMEs. This highlights the importance of short-term debt over long-term debt in SME financing and a similar finding was confirmed by Cassar and Holmes (2003). The remaining 18% is represented by the owners' equity which provides evidence that SMEs tend to be undercapitalised. The growth index for the sample firms is only 0.7% and is an indication that the SMEs are constrained by the market, especially in a small island economy.

The correlation matrix between the dependent variables and the explanatory variables are shown in *Table 8*.

Table 8: Pearson correlation matrix between variables

	1	2	3	4	5	6	7	8	9
1 clta	1.000								
2 rota	-0.515	1.000							
3 gear	-0.090	-0.164	1.000						
4 skca	0.132	-0.141	0.188	1.000					
5 tdca	-0.137	0.087	-0.013	-0.464	1.000				
6 cata	0.157	0.010	-0.180	0.182	-0.178	1.000			
7 turnca	0.154	0.024	0.124	-0.060	0.057	-0.519	1.000		
8 insale	0.094	0.152	-0.341	-0.177	-0.004	0.117	-0.054	1.000	
9 growth	-0.042	0.170	0.049	-0.029	0.003	0.004	0.050	0.376	1.000

c. b. * denotes significance level at 1%, 5% and 10% respectively.

Variables definition in Appendix 1

Examining the univariate relationships between the dependent variables and independent variables, of particular note is the consistent direction of the relationship, though not all of them are significant. *A priori* a positive relationship between TDCA and the dependent variable (CLTA) is expected, but the coefficient is negative and significant. Strong correlations between GEAR and the asset structure are also observed, for example the higher the proportion of current assets in total assets, the lesser is the use of long term debt in the financing decision of SMEs. This provides evidence of a matching financing policy, where the sample firms tend to finance their current assets out of current liabilities (a significant positive correlation between CATA and CLTA). Finally, examining the variable size against the correlations of the other independent variables it is observed that larger firms have a lower proportion of long-term debt, as they appear to be more profitable (ability to generate funds internally). Apart from being profitable, the larger firms report a higher proportion of current assets and this is also reflected in the significantly positive correlation between SIZE and GROWTH. Most of the coefficients have a low value, except for the correlation between TURNCA and CATA, showing a significant negative value of 0.5193. Thus, the data set is not affected by multicollinearity and it is safe to proceed with the multivariate analysis.

ANALYSIS OF RESULTS

The prime objective is to examine closely the determinants of WCF, subject to the data restriction.

The results for the four models (1) - (4) to test for the separate effect of working capital components (CATA, SKCA and TDCA) and the operational efficiency (TURNCA, Model 4) are displayed in the table together with *t-values* and statistical tests.

The main variable CATA (Model 1) which shows the extent of aggressiveness in the asset management of the sample firms is strongly confirmed and follows a matching financing principle. The coefficient is positive and highly significant at the 1% level. As expected, the sample firms meet the working capital requirements out of current liabilities which include mainly trade credit, cash credit, short-term borrowing and other payables. This is also evidenced in *Table 4* where only the working capital gap is met out of long-term debt. Interestingly, the findings tend to corroborate other finance related SMEs studies (Chittenden *et al.*, 1996; Cassar and Holmes, 2003), though not specifically investigating the use of short-term debt. The hypothesis that firms with growth potential borrow on the short-term is not confirmed, instead a significant negative relationship is observed for all the models. A partial interpretation of this finding could be that the sample firms are not pursuing any growth strategy as confirmed by the low mean value for the variable growth in sales. However, the measurement scale used may also not a good measure of growth for the sample. Consistent with the pecking order arguments, the coefficient for ROTA is negative and statistically significant in all the regressions models. The relationship between firm size and WCF (CLTA) is positive and statistically significant in all the models, except model 3 showing a weak significance. This finding has implications for larger firms which need to support high working capital requirements. The positive relationship is consistent with the theoretical arguments, where the larger firms demand for finance may be more attractive than request from smaller firms. The hypothesis that firms which is pursuing a matching principle; that is using long-term debt to finance the permanent part of current assets and the fixed assets is statistically confirmed. In every regression, the coefficient of GEAR is large and significant at the 1% level. As the proportion of long-term debt financing increases, the share of current liabilities to total assets falls and confirms that firms seek to match the maturities of assets and liabilities (Heyman *et al.*, 2008). The two variables used to examine the separate effect of stock and debtor in the working capital composition of the sample firms are showed in regression model 2 and model 3. As expected, the coefficient for SKCA is positive and statistically significant at the 1% level. This suggests that as the firms build up stocks in anticipation of higher sales level, the need for short-term WCF increases. Empirical evidences have confirmed such relationship and how important is the use of trade credit as a source of finance has been widely research. However, as the firms liquidate its stock level and the asset changes its form into debtors, the need for extra financing in the form of bank overdrafts or bank loans is less felt. This is confirmed by the significantly negative relationship between the variable TDCA and the dependent variable CLTA.

CONCLUSION AND DISCUSSIONS

Short-term bank credit plays not only a significant but also a dominating role as a major external source of financing working capital requirements of the sample firms. It ranges from 27% to 34%. This is evidenced by the low level of short-term borrowings with a mean value of 7% over the period of study. Therefore to bridge the shortfall in working capital requirements the sample units have no choice than to rely on their banks for overdraft facilities. The regression results showed that the small to medium-sized Indian manufacturing firms have a financing pattern, which is influenced by the asset structure, leverage, profitability, operational efficiency and size of firms. As suggested by Rajan and Zingales (1995), the results showed a negative and statistically significant relation between growth and the level of short-term debt. It is generally assumed that short-term funds are first directed to WCF, the working capital gap is met out of long-term funds. Equity option is the least preferable option as evidenced by the low ownership ratio. This is often explained by the strong desire to keep control of the business within the family and the owner managers would consider external equity as a last resort. Evidence on this issue provides insight into the financing behaviour of the sample units and contributes to the understanding of financing choices of SMEs. The findings are comparable to similar studies as reviewed in the literature section and the findings are consistent with these *a priori* hypotheses.

Thus, the results provide confirming evidence that small firms face borrowing constraints due to agency costs and asymmetry information (Ang, 1991; Cosh and Hughes, 1994; Winborg, 1997). The most significant coefficient in the regression models consistently show that short-term financing is negatively correlated with the level of profitability. While the profitable firms may be more attractive from the lending institutions perspective, the need for overdraft and loans may possibly be lower if retained profits are sufficient to meet the sample firms' working capital requirements. Thus, the pecking order arguments that predict a negative relationship between profitability and debt are validated for the sample (Myers, 1984). The regression models consistently showed that firms exposed to high level of current assets make the most use of short-term financing. This supports the finance theory and a number of empirical findings from previous studies. Similarly there is no evidence that operational efficiency has a negative impact on the use of short-term financing. This could be linked to the poor financial management practices of small firms where they not only take longer to collect their receivables they also tend to keep high level of stocks. If this is supported, then firms have no choice than to delay payment to suppliers (use of trade credit) and increase reliance on cash credit. Finance is one of the most cited problems faced by SMEs. Government financial support schemes and debt from financial institutions are important source of capital for small firms to bridge the financial gap (Berger and Udell, 1995). However, the financial burden of debt on a firm's financial viability has been recognised in the finance literature and is often the causes for firms' bankruptcy (Carter and Van Auken, 2006). SMEs can be particularly affected by typical asymmetric information problems like adverse selection and moral hazard. As a result they tend to rely mostly on short-term debt financing and such source of finance is even more attractive given that owner manager of SMEs may decide not to seek financing that dilutes their ownership and therefore limits their ability to act. In this respect, they generally turn their attention to debt once internal resources have been fully utilised. It is therefore presumed that cash flow from operations represents the ultimate option of financing and thus, it is important that profits are quickly converted into cash through efficient WCM practices.

REFERENCES

- Abor, J. (2005). The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana. The Journal of Risk Finance, 6(5), 438-445.
- Barton, S. L. & Mathews, C. H. (1989). Small Firm Financing: Implications from a Strategic Management Perspective. Journal of Small Business Management, 27(1), 1-7.
- Berger, A. N., & Udell, G. F. (1995). Relationship lending and lines of credit in small firm finance. Journal of Business, 68(3), 351-81.
- Cassar, G., & Holmes, S. (2003). Capital structure and financing of SMEs: Australian evidence. Journal of Accounting and Finance, 43, 123-147.
- Deloof, D. (2003). Does Working Capital Management Affect Profitability of Belgian Firms? Journal of Business Finance and Accounting, 30(3/4), 573 – 587.
- Heyman, D., Deloof, M., & Doghe, H. (2008). The Financial Structure of Private Held Belgian Firms. Journal of Small Business Economics, 30, 301-313.
- Howorth, C. A. & Wilson, N. (1998). Late Payment and the small firm: An examination of case studies. Journal of Small Business and Enterprise Development, 5(4), 307-315.
- Levin, R. I., & Travis, V. R. (1987). Small company finance: what the books don't say. Harvard Business Review, Nov/Dec, 30-32.
- Mallick, A., & Sur, D. (1999). Working Capital Management: A Case Study of Hindustan Lever Ltd. Finance India, 13(3) 857-871.
- Narasimhan, M. S., & Vijayalakshmi, S. (1999). An Inter-industry Analysis of Working Capital Management on components, efficiency and financing pattern, Research Bulletin (ICWAI), 18(July-Dec Issue), 65-75.
- Padachi, K. (2006). Trends in Working Capital Management and its Impact on Firms Performance: An Analysis of Indian Small Manufacturing Firms, International Review of Business Research Papers, 2(2), 45-58.
- Petersen, M. A., & Rajan, R. G. (1997). Trade Credit: Theories and Evidence. Review of Financial Studies, 10(3), 661–91.
- Pettit, R., & Singer, R. (1985). Small Business Finance: A Research Agenda. Financial Management, Autumn Issue, 47-60.

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