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FINANCIAL INCLUSION AND SOCIAL INCLUSIONS OF MIGRATED FAMILIES THROUGH SOCIAL INSURANCE IN DAKSHINA KANNADA DISTRICT; KARNATAKA

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INTRODUCTION:

Finance is one of the effective tools in spreading economic opportunities of the migrated people. Wider access to adequate and timely help of finance to the vulnerable people drives them finance and social inclusion as well. The development process of a nation starts with reach of financial services to the poor people. It is disheartening to know that despite of substantial progress in our country and reforms in Banking and Insurance, nearly ninty percent of the population are excluded from the insurance fold. These excluded are, poor, illiterate, unorganized and vulnerable migrated families. Financial inclusion is the availability of banking and insurance services at an, afforadable cost to those belonging to low income groups. Financial inclusions leads to social inclusion, it facilitates to lead a happy and peaceful and respectable life in the society.

The purpose of this paper is to present an overall picture of financial and social inclusion of migrated people in Dakshina Kannada District, Karnataka. To begin, it is necessarily to develop and understanding of their profile, perceptions about the social insurance and financial inclusions. In this regard, this paper through a small research survey attempts to study the emerging issues and dwells on

certain findings of the survey of migrated families in the informal sector. Finally some valuable suggestions are made for making financial inclusion and social inclusion programmes towards poverty alleviation a success in this country.

Social Insurance programmes are helps to solve complex social problems. A social problem affects most or all of society and is so serious that direct central and state governments interventions are necessary.

Social Insurance programmes provide a base of economic security to the migrated families. Social insurance programmes provide a layer of financial protection to most migrated families against the long term financial consequences of premature death, disability and unemploymen moreover; it ensures peace, fair and equitable society. It creates new economic and social order in the country.

Financial Inclusion and Exclusion concepts:

Dr. C. Rangarajan's, 2008, commettee on Financial Inclusion: The process of ensuring access to financial services and timely and adequate credit where needed by vuluerable groups such as weaker sections and low income groups at an afferdable cost".

Financial inclusion (or alternatively, financial exclusion) has been defined in the literature in the context of a larger issue of social inclusion (or exclusion) in a society. One of the early definitions by leyshon and thrift (1995) define financial exclusion as referring to those process that serve to prevent certain social groups and individuals from gaining access to the formal financial system.

Sinclair (2001), Financial exclusion means the inability to access necessary financial services in an appropriate form. Exclusion can come about as a result of problems with access, conditions, prices, marketing or self – exclusion in response to negative experience or perceptions.

Carbo et.al (2005) have defined financial exclusion as broadly the inability (however occasioned) of some societal groups to access the financial system.

Thus, most of the definitions emphasize financial exclusion to a manifestation of a much broader issue of social exclusion of certain societal groups such as the poor and the disadvantaged. Therefore, financial inclusion and social inclusion as a process that ensures the ease of access, availability and usage of the formal financial system for all members of an economy. This definition emphasises several dimensions of financial inlcusion, viz, accessibility, availability and usage of the financial system and insurance benefits. These dimensions together build and inclusive in social system. As bankers and Insurers are the gateways to the most basic forms of financial services, banking and insurance inclusion / exclusions often used as analogous to financial inclusion / exclusion?

Reasons for financial and social inclusion of migrated people:

Certain resarch suggest the financial exclusion can lead to social exclusion. The consequences of financial exclusion will vary depending on the nature and extent of services denied. The following are the consequences of financial exclusion.

1. Lack of financial planning and security in the absence of access to bank accounts and other saving opportunities for people in the unorganised sector limit their options for providing for them selves for their old age.
2. Poverty tag transferred from coming generations.
3. Increased migration.
4. Higher incidence of crime.
5. General decline in investment.
6. Increased unemployment.
7. Whole family will suffer a lot.

Focus of the study:

This study examines the migrated families quality of work life and their**financial literacy** confirmed to Dakshina Kannada District in Karnataka State. Dakshina Kannada Districts attracts migrated families from North Karnataka, Tamil Nadu and Kerala Districts. The fates of the migrated families are a) Unsatisfactory employement. b) Heavy indebtedness. c) Develop the bad habits. e) Intolerable inequalities. d) Socially deprived class. f) Financial illiteracy.

Objectives of the study:

The specific research objectives include the following:

1) To study the socio-economic profile of the migrated families in Dakshina Kannada District.
2) To analysis the financial and social status of the migrated families.
3) To examine the various means and ways to financial and social inclusions through insurance.

4) To offer comprehensive suggestions to bring migrated families to the main stream of the countries growth and development.

Methodology:

The present study is empirical in nature based on the field survey method. Both primary and secondary sources of data were collected through a structured and pretested interview schedule. The research was conducted in D.K. Districts, in Karnataka State. Respondents were drawn at random, hence **convenience sampling method** was instituted. Two hundred and fifty respondents at the rate of fifty respondents had drawn from each taluk. The District has five Talukas, Comprising, Belthangady, Puttur, Sullia, Mangalore and Bantwal.

Research Tools:

The data has been presented in the form of tables for easy understanding and analysis. To find out the modality for making to sustenance of migrated families and removes the tag of poverty for coming generation through social Insurance.

Table – 1

Educational level of the respondents

Talukas	Illiterates	Upto 4th Std	Upto 7th Std	Total
Mangalore	30 (12.00)	15 (6.00)	5 (2.00)	50 (20.00)
Bantwal	40 (16.00)	10 (4.00)	-	50 (20.00)
Puttur	36 (14.4)	11 (4.4)	03 (1.2)	50 (20.00)
Belthandady	41 (16.4)	09 (3.6)	-	50 (20.00)
Sullia	44 (17.6)	06 (2.4)	-	50 (20.00)
Total	**191 (76.4)**	**51 (20.4)**	**08 (3.2)**	**250 (100.00)**

Source: Primary data (Figures in the branckets indicates percentage)

Table – 2

Family size of the respondents

Talukas	Joint family system	Nuclear family system	Total
Mangalore	14 (5.6)	36 (14.4)	50 (20.00)
Bantwal	12 (4.8)	38 (15.2)	50 (20.00)
Puttur	09 (3.6)	41 (16.4)	50 (20.00)
Belthandady	11 (4.4)	39 (15.6)	50 (20.00)
Sullia	13 (5.2)	37 (14.8)	50 (20.00)
Total	**59 (23.6)**	**191 (76.4)**	**250 (100.00)**

Source: Primary data

Table – 3

Annual Income of the respondents

Talukas	Less than Rs. 5,000	Rs. 5,001-10,000	Rs. 10,000 and above	Total
Mangalore	28 (11.2)	16 (6.4)	06 (2.4)	50 (20.00)
Bantwal	25 (10.00)	17 (6.8)	08 (3.2)	50 (20.00)
Puttur	30 (12.0)	15 (6.00)	05 (2.0)	50 (20.00)
Belthandady	35 (14.00)	11 (4.4)	04 (1.6)	50 (20.00)
Sullia	37 (14.8)	13 (5.2)	-	50 (20.00)
Total	**155 (62.00)**	**72 (28.8)**	**23 (9.2)**	**250 (20.00)**

Source: Primary data

Table – 4

Nature of the job in unorganised sectors

Talukas	Construction workers	Agricultural daily wage workers	Total
Mangalore	30 (12.00)	20 (8.00)	50 (20.00)
Bantwal	35 (14.00)	15 (6.00)	50 (20.00)
Puttur	36 (14.4)	14 (5.6)	50 (20.00)
Belthandady	31 (12.4)	19 (7.6)	50 (20.00)
Sullia	24 (9.6)	26 (10.4)	50 (20.00)
Total	**156 (62.4)**	**94 (37.6)**	**250 (20.00)**

Source: Primary data

Table – 5

Safety and security of the migrated families

Talukas	Some what better (Safety & security)	No (Highly vulnerable)	Total
Mangalore	10 (4.00)	40 (16.00)	50 (20.00)
Bantwal	05 (2.00)	45 (18.00)	50 (20.00)
Puttur	04 (1.6)	46 (18.4)	50 (20.00)
Belthandady	02 (0.8)	48 (19.2)	50 (20.00)
Sullia	01 (0.4)	49 (19.6)	50 (20.00)
Total	**22 (8.8)**	**228 (91.2)**	**250 (20.00)**

Source: Primary data

Table – 6

Proper shelter of the migrated families

Talukas	Proper shelter provided by the employer	Proper shelter not provided by the Employer	Total
Mangalore	14 (4.4)	36 (14.4)	50 (20.00)
Bantwal	18 (7.2)	32 (12.8)	50 (20.00)
Puttur	17 (6.8)	33 (5.6)	50 (20.00)
Belthandady	16 (6.4)	34 (13.6)	50 (20.00)
Sullia	20 (8.00)	30 (12.00)	50 (20.00)
Total	**85 (34.00)**	**165 (66.00)**	**250 (20.00)**

Source: Primary data

Analysis:

Above tables shows that, the plight of the migrated families in the D.K. District. First, educational back ground, which is playing an important rule in the migrated families to live very happy and social inclusion life. Table – 1 indicated that, more than seventy five percent of the respondents are illiterates and rests of the respondents are study upto 4th to 7th standard. Educational is one of the powerful tools to live financial and social inclusion of the respondents. Table -2 reveals that the family size of the respondent's, one-ninty-one out of two-fifty families are living under nuclear family systems. Nowadays nuclear family system is the order of the day, in the same time. These families are facing more social risks, danger, suffer and victims. In the Table – 3 shown the earning capacity of the migrated families. More than sixty percent of the respondent's annual income is coming under less than rupees five thousand and nearly thirty percent of the respondents annual income is Rs. Five-thousand to Rs. Ten - thousand and rest of the respondents income coming under third category. In thesedays, their meager income is not affordable to buy the basic needs of their life and live very indecent life.

D.K. District is one of the fastest growing District in the Karnataka states. It creates more and more employment opportunities in un-organized sectors. More than sixty percent of migrated people are working as construction worker and thirty-seven percent of the respondents are working as coolies or farm workers on daily wage basis in agricultural sector which is shown in Table-4. D.K. District attracts migrates within the state and neighboring states as well. Threats are not uncommon to migrated people. More than ninety percent of the respondents are facing safety and security of their job which is shown in Table-5. In Table-6, reveals that more than sixty five percent of the respondents are facing basic shelter and potable water problems. This is a vicious circle of the problem of the migrated families in D.K. District.

Major finds of the study:

The following are the major findings of the study:

1. More than seventy-five percent of the respondents are illiterates.
2. Migrated families in the Dakshina Kannada District are out-numbers coming under nuclear family system.
3. It is evident that, most of the respondents earning capacity are fewer than Rs. Five-thousand per year. It shows their financial exclusions.

4. The survey reveals that more than sixty-percent of the respondents working as a construction worker for daily basis wages.
5. According to the survey, sixty-six percent of the migrated families living under high risk and danger as far as their shelter and drinking water problems are concerned.

Major Suggestions:

1. Govt. must provide mobile school to these migrated families.
2. Central and State Governments are must provide Tailor made Social Insurance schems to migrated families.
3. Health Insurance is badly needed to this vulnerable people.
4. Job security and safety in the unorganized sector must provide by the governments.
5. Central and State Government must made rules to stop migration and provide or generate employment opportunities in the rural areas.

Conclusion:

It is becoming increasing apparent and addressing financial exclusion will require a holistic approach on the part of the central and the State Governments. Governments would have to evolve specific social Insurance strategies to expand the out reach of the countries development frait to migrated families. In order to achieve high rate of economic development, peace, prosperiety and improving the quality of work life of the migrated families.

Social Insurance ensure peace, fair, equitable and viable to the vulenesable sections. It creates new economic and social order in the country.

References:

1. Text of Union Budget 2006-07 and 2007-08.
2. RBI Circulars dated December 28, 2005 and February 25, 2006 on Financial inclusion.
3. "Financial inclusion is the Mantra", ICT Quarterly, 2006.
4. Government Constitutes Committee on Financial inclusion, June26, 2006.

5. "Financial Inclusion Challenges and Opportunities", speech delivered by Shri. Duvvuri Subba Rao, Governor, Reserve Bank of India, at the Bankers' Club in Kolkata on December 9, 2009. "India's Best Banks 2009 A BW- PvvC Survey" Business World dated 28 December 2009, pp 58-1.
6. Basu, Priya (2005). "A Financial System for India's Poor." Economic and Political Weekly. September 10, 2005. pp. 4008 4012
7. Basu, Priya (2006). Improving Access to Finance for India's Rural Poor Washington, D.C. The World Bank.
8. Beck, Thorsten and De la Torre, Augosto (2006). "The basic analytics of Access to Financial services" Mimeo.
9. Das, V (2006). "Financial inclusion Initiatives" inaugural Address delivered at the ' National Conference on Financial inclusion and Beyond issues and Opportunities for India '. September 19-20, 2006, Cochin.
10. Dev, Mahendra S(2006). "Financial inclusion issues and Challenges". Economic and Political Weekly. October 14, 2006.pp. 4310 4313.
11. Ghate, Prabhu. "Consumer Protection in India Microfinance Lessons from Andhra Pradesh and the Microfinance bill." Economic and Political Weekly, March 31, 2007.
12. Leeladhar, V (2005) "Taking Banking Services to the Common Man- Financial Inclusion" Commemorative Lecture by Deputy Governor Reserve Bank of India at the Fedbank Hormis Memorial Foundation at Ernakulam on December 2, 2005.
13. Littlefield, Elizabeth; Helms, Brigit; Porteous, David (2006). "Financial inclusion 2015 Four Scenarios for the future of Microfinance" CGAP Focus Note No 39.
14. Mohan, Rakesh (2006). "Economic Growth, Financial Deepening and Financial Inclusion" Address by Dr. Rakesh Mohan at the Annual Bankers' Conference 2006, at Hyderabad on November 3, 2006
15. RB1 Circular No RBI /2005-06/233
RPCD.RF.BC.54/07.38.01/2005-06dated13.12.2005.
http//www.iibf.org.in/financeq/docs/RBI_circular_13.12.2005_Fin_Inclusion.doc Accessed on 8.5.07
16. www.rbi.org.in/scripts /annualreportpublications.aspx

RESEARCH PAPER ON SALES FORCE AUTOMATION SYSTEMS FOR SERVICE INDUSTRY

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INTRODUCTION

Sales force management systems are information systems used in marketing and management that help automate some sales and sales force management functions. They are frequently combined with a marketing information system, in which case they are often called Customer Relationship Management (CRM) systems.

Sales Force Automation Systems (SFA), typically a part of a company's customer relationship management system, is a system that automatically records all the stages in a sales process. SFA, is a technique of using software to automate the business tasks of sales, including order processing, contact management, information sharing, inventory monitoring and control, order tracking, customer management, sales forecast analysis and employee performance evaluation.

SFA packages typically include a Web-ready database, an e-mail package, and customizable templates. A three-tiered architecture is typically used to separate the database, server, and application to reduce programming demands on clients. A module-based design is generally used, to allow users to customize the package to suit their needs.

SFA (Sales Force Automation) is a subset of CRM software that helps companies automate the sales process, gain insight into customer relationships and analyze sales performance. It encompasses the following business tasks:

- Order processing and tracking
- Inventory monitoring and management
- Contract management

- Information sharing
- Customer relationships
- Sales analysis and forecasting
- Staff performance evaluation
- Tracking of customer buying habits
- Customer demographics analysis

Value of SFA

SFA can help digitize sales documents and make it easy to share information within the company, as well as with clients. It can give greater insight into customer relationships, from the demographics of a customer base to individual buying habits. The efficiency of a sales organization can also get a boost from task automation, process management and prioritization features, which can help make the most of the work force's time and provide higher-quality customer service.

Other departments also benefit from the sales reports produced by an SFA solution. Marketing, for example, can learn more about its audience in real time and can see whether its campaigns and other initiatives are actually boosting sales. On the other end of the spectrum, product-development teams can find out what defects showed up in their releases by looking into the technical-support team's tickets.Some common

Features of SFA

The following can be found in many, if not all, SFA solutions on the market:

Lead management: Sales managers can track the performance of sales lists and automatically route calls to agents with the appropriate skill sets. Agents can keep track of leads, schedule follow-ups and log reports on the customer's history.

Account-management systems: Allow sales to see a comprehensive view of their customers, including how often they have been called and their responses, demographics and purchasing history. This information can be used to aggregate reports and gain a broader perspective of the company's customer base, or it can simply serve to inform an agent about the person he or she is speaking with.

Territory management: Companies can track information across different regions or territories — including setting up systems in a new location, gathering information about clients there, assigning sales tasks to staff members located elsewhere and re-assigning territory information as needed.

- Contract management: These features can make the contracts process much smoother and more efficient. By sharing contract information, managers can quickly review and approve contracts, renew them sooner and keep an electronic record.

- Inventory control: Companies can link their sales functions to their inventory systems, allowing them to replenish out-of-stock merchandise or employ just-in-time manufacturing strategies.

- Sales forecast analysis: Sales staffs can use their own real-world data and knowledge of their customers to better predict sales successes for customers with similar characteristics.

Strategic advantages

Sales force automation systems can also create competitive advantage. Here are some examples:

As mentioned above, productivity will increase. Sales staff will use their time more efficiently and more effectively. The sales manager will also become more efficient and more effective. This increased productivity can create a competitive advantage in three ways: it can reduce costs, it can increase sales revenue, and it can increase market share.

Field sales staff will send their information more frequently. Typically information will be sent to management after every sales call (rather than once a week). This provides management with current information, information that they will be able to use while it is still valuable. Management response time will be greatly reduced. The company will become more alert and more agile.

These systems could increase customer satisfaction if they are used with wisdom. If the information obtained and analyzed with the system is used to create a product that matches or exceeds customer expectations, and the sales staff uses the system to service customers more expertly and diligently, then customers should be satisfied with the company. This will provide a competitive advantage because customer satisfaction leads to increased customer loyalty, reduced customer acquisition costs, reduced price elasticity of demand, and increased profit margins.

Disadvantages

Detractors claim that sales force management systems are:

- difficult to work with
- require additional work inputting data
- dehumanize a process that should be personal
- require continuous maintenance, information updating, and system upgrading costly
- difficult to integrate with other management information systems.

TOP TEN VENDORS OF SFA

1. Microsoft: Microsoft Dynamics CRM is the software giant's SFA entry. The product is notable for its easy-to-use, Outlook-style user interface, as well as for its strong set of sales-automation functions. The application also leverages several powerful Microsoft technologies, such as SharePoint, for dashboards and portals, and SQL Server Reporting Services, for enhanced analytics and reporting functions.

2. Oracle Corp.: Oracle Siebel CRM On Demand is a sophisticated SFA application that has won plaudits from industry analysts and customers alike. The software's most noteworthy feature may be its Sales Process Coach, which helps businesses build sales best practices into the solution. Buyers can select from several different editions of the application, including a general-purpose version, as well as five industry-focused editions: wealth management, insurance, automotive, life sciences and high-tech.

3. FrontRange Solutions USA Inc.: FrontRange's GoldMine, which began life many years ago as a contact manager, has gradually blossomed into a full-fledged SFA application. Targeted at smaller sales forces, GoldMine provides basic contact, account and deal management capabilities. But the software betrays its humble origins by failing to provide features like product management, quoting, discounting and mobile device support. Still, for smaller businesses that don't want to spend a lot of money on potentially needless features, GoldMine can be a smart choice.

4. SugarCRM: The only significant open-source SFA application, SugarCRM provides strong core sales-automation features that buyers can extend and adapt to meet their specific needs. Don't confuse open-source with free, however. Although the vendor offers a free edition of SugarCRM targeted at deployments of 10 users or fewer, larger deployments will require paying for either the Professional Edition or Enterprise Edition, as well as IT support in most cases.

5. Sage Software: Sage Software's SalesLogix provides a set of powerful tools for managing contacts and accounts, as well as for handling sophisticated analytical functions. The application has been rapped by some as difficult to configure and customize, so organizations with little or no in-house IT support may wish to look for a less ambitious SFA application.

6. RightNow Technologies Inc.: RightNow Technologies' SFA application is provided within a complete CRM suite that also offers sales, marketing, service and analytical tools. The overall product is offered in both SaaS and on-premise versions, and buyers should be able to migrate from one platform to another rather easily should the need arise. Like Sage Software's SalesLogix, the RightNow application is powerful yet complex, so smaller organizations may wish to look for a less ambitious product.

7. Maximizer Software Inc.: Like RightNow's SFA application, Maximizer Software's SFA capabilities are buried within a full CRM suite called Enterprise. On the other hand, it's not difficult to configure and customize, so small businesses looking for a "ready-to-roll" solution may want to take a close look at this product. Unfortunately, Maximizer Software Enterprise's simplicity is also reflected in its lack of advanced development and customization tools, which limits its overall usefulness.

8. SAP: SAP Sales is an on-demand solution that aims to help customers meet everyday SFA business needs such as account, contact, activity, opportunity, pipeline, calendar and task management. The software also includes sales analytics to help companies better manage new and existing business opportunities, lead generation, sales execution and client engagement.

9. NetSuite Inc.: NetSuite offers SaaS-based sales automation as part of a comprehensive suite that spans CRM, ERP (Enterprise Resource Planning) and e-commerce capabilities. The product is targeted at smaller businesses looking for a single solution that can handle everything from lead and opportunity management to orders to invoicing to accounts receivable, particularly in online retail, wholesale and high-tech industries.

10. Salesforce.com: Salesforce.com's flagship sales force automation (SFA) application gives businesses the upper hand with their sales data. Comprehensive and easy to customize, Salesforce empowers companies to manage people and processes more effectively, so representatives can close more deals. With Salesforce, representatives spend more time selling and less time on administration.

References:

1.http://en.wikipedia.org/wiki/Sales_force_management_system

2.www.salesforce.com/crm/sales-force-automation/

3. www.sugarcrm.com/crm/products/capabilities/sales.html

CUSTOMERS PERCEPTION OF E-BANKING SERVICES- AN EMPIRICAL STUDY

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INTRODUCTION

A lot of structural changes were introduced in 1991 in Indian banking industry. Interest rates were deregulated and banks were given free hand to decide the interest rates. Banks were given free hand to open new branches. Prudential norms in capital adequacy and disclosure were introduced. In recognition of the needs to introduced greater competition with a view to achieving higher productivity and efficiency of the banking system, RBI issued guidelines in January 1993 for the entry of "New private sector banks". Subsequently nine new commercial were granted license to start banking operations. Liberalization coincided with the Information Technology Revolution of the 1990s. RBI had been giving thrust to computerization of Indian banks since 1980s.

Information Technology Adoption By Indian Banks

RBI had set up various committee such as Dr. Rangarajan committee 1 (1983), Dr. Rangarajan committee 2 (1988) etc. which developed standards for the computerization of banks from completing the automation at the branch level to creation of various networks to integrate branches and controlling offices to development of various clearing systems like ECS, EFT, RTGS etc. Indian banks started feeling the competitive pressure in the liberalized economy of 9os. The implementation of the recommendations of Basel Accord 1988, Narasimhan Committee (1 and 2) transformed the Indian public sector banks from social banking to commercial banking whereby "profit" became a mantra. The emergence of new private sector banks expansion by the foreign banks, the changing business model of the nationalized banks compounded by financial reforms and burgeoning of middle class, have over the last 10 years, completely transformed the ways banks in India operate. The government owned commercial banks today have a market share of around 75 per cent, the private sector banks about

20 per cent and foreign banks about 5 per cent (Kannabiran and Narayan Wiley periodicals, 2005). New private Sector banks perceived future competition among banks would be essentially based on the technology and developed state of the art technology infrastructure, comparable to that of banks in developed countries.

Technology based services offered by banks

Banking operations and process were reengineering with the introduction of technology. Several new products were introduced. Internet banking, ATMs, phone banking, debit cards, credit cards etc. were some of the new arrivals.

Introduction of core banking solution (CBS) integrated the operation of a bank across various locations. A central server replaced all branches level and controlling office level servers. Each and every transaction happening across any service point like a branch or ATM is recorded in that server. CBS even we can say, eliminates "branch" in favour of "bank" facilitating the client of one branch to conduct transactions in his account in another branch.

Cash withdrawal from any ATM of the branch is made possible by CBS. Most of the ATMs are equipped to conduct several other transactions, apart from cash withdrawals, like account transfer, payment of bills etc. Internet banking is gaining prominence where information from central server is made accessible to the account holder using a pin or passwords. Account statement, account transfer facilities, bill payment facilities etc. are some of the facilities given by banks to the clients. Some of the banks have not enabled the transaction through internet because of fear of security lapses. All the banks have websites through which banks publicize their products and services. The following are the main benefits of new technology:

To Customers	To Banks
□ Convenient banking	□ Lower cost transaction
□ Tailored	□ Increase customer knowledge
□ Easy access	□ Ability to tailor products and services as per customers requirements
□ Ease of shopping around the best price	□ Ability to access a large market
□ Ease of changing supplier	□ Increase customer relationship
□ Low cost and save time	□ Reduce error, time consumed and overhead cost
□ Privacy	□ Reaching new segment of the population
□ Elimination of waiting time	□ Create customer loyality
□ Information gateway	□ Achieve better cross channel productivity and performance
□ Round the clock availability	□ Eliminate the waste of paper

In summary banking industry is rapidly undergoing a structural change due to the emergence of the internet. It has changed collectively the battlefield as banking moves from

- Economics of scale to altering the rules of competitions
- Capital requirement to knowledge requirement
- Branch and products differentiation to customer segmentations/relationships
- Access to distribution channels to access to customers
- Regulated Government policies to unregulated global market
- Proprietary standards to eliminating switching costs

II

OBJECTIVES, RASEARCH METHODOLOGY AND DATABASE

Objectives

- To study and analyze the preference of customer about e-banking services
- To suggest the measures to improve the e- banking services in banks.

Hypothesis

The opinions of respondents regarding e-banking services do significantly different in various bank groups.

Database

Survey conducted in Ludhiana district (Punjab), January, 2009.

Research Methodology

Public sector banks, Old private sector banks, New private sector banks & Foreign banks operating in Punjab form the universe of the study. The present study covers bank branches for those bank groups working in the Ludhiana district. Almost, all the major banks have branches in this holy district.

As it was felt that it would useful to attempt a comparative study among the preference of bank customer on e banking services of public sector banks, Indian private sector banks & foreign banks (One Public, One Private & One Foreign bank) having the largest network of branches in the district were identified. The survey of 1200 customers

of all bank groups have been contacted at random for collecting the data required for the study. The required data were collected from the respondents through well structured and pre-tested questionnaire. c^2 test is used to know the significant/insignificant difference in the opinion of bank customers.

III

Results and Discussion

Socio-Economic Background of the Respondents

The socio-economic background of the respondents affects their perception to a large extent. The results in table 1 reveals that out of 1200 respondents, the maximum average has been in age group of 25-35 years i.e. 39.67 per cent and the least average belongs of occupation of industrialist and agriculture i.e. 1.33 per cent.

Table 1

Socio-Economic Background of the Respondents

Bank Groups	No. of Responses		Age Groups	No. of Responses		Occupation	No. of Responses		Education	No. of Responses	
	No.	%		No.	%		No.	%		No.	%
G-I	400	33.33	Below 25	296	24.67	Service	380	31.67	Matriculate	116	9.67
G-II	400	33.33	25-35	476	39.67	Business	304	25.33	Graduate	408	34.00
G-III	400	33.33	36-45	220	18.33	Professional	272	22.67	Post Grad.	444	37.00
			46-55	168	14.00	Industrialist	16	1.33	Professional	232	19.33
			Above 55	40	3.33	Agriculture	16	1.33			
						Others	212	17.67			
Overall	1200	100		1200	100		1200	100		1200	100

Source: Survey Results

Private Banks are providing more E-Banking Facilities as Compare to PSBs

Bank group wise in public sector banks 92 pc respondents responded that private banks are providing more e-banking facilities as compare to PSBs. Similarly, majority of respondents of Indian private sector bank and foreign sector banks are also satisfied that private banks are providing more e-banking facilities as compare to PSBs. In age group, the maximum average has been 25-35 years i.e. 94.12 per cent. Education level wise majority of respondents of graduate, post-graduate and professional respondents are satisfied that private banks are providing more e-banking facilities as compare to PSBs. Overall, 91.67 pc respondents are in favour of private banks are providing more e-banking facilities as compare to PSBs. The chi^ test reveals that the differences in the opinion of respondents of bank groups is insignificant .But on the basis of the profile of their respondents is significant at 1% LOS.

Table 2

Customer Perceptions: More E- Banking Facilities as Compare to PSBs

Per cent

Groups	Yes	No	Chi^2
Bank Groups			
G-1	92.00	8.00	
G-2	93.00	7.00	2.44
G-3	90.00	10.00	
Age Groups			
Below 25	86.49	13.51	
25-35	94.12	5.88	
36-45	92.73	7.27	14.92**
46-55	92.86	7.14	
Above 55	90.00	10.00	
Occupation			
Service	91.58	8.42	
Business	86.84	13.16	
Professional	92.65	7.35	18.29**
Industrialist	100.0		
Agriculture	100.0		
Others	96.23	3.77	
Educational Level			
Matriculate	93.10	6.90	
Graduate	87.25	12.75	16.13**
Post Grad.	93.69	6.31	
Professional	94.83	5.17	
Overall	91.67	8.33	

Source : Same as Table 1

If Yes, Would You like to Shift from these Banks to e-Banks

Bank group wise in public sector banks 77 pc respondents are interested to shift from these banks to e-banks in future. Similarly, majority of respondents of Indian private sector bank and foreign sector banks are also like to shift from these banks to e-banks in future. Age wise 75.68 pc respondents of below 25 years, 84.87 pc respondents of 25 to 35 yrs like to shift from these banks to e-banks in future. Similarly, majority of respondents of 36 to above 55 years are like to shift from these banks to e-banks in future. Overall, 80.67 pc respondents are like to shift from these banks to e-banks in future. The chi^ test reveals that the differences in the opinion of respondents of bank groups is significant at 1% LOS.

Table 3

Customer Perceptions: Like to shift from these Banks to E- Banks in Future

Per cent

Groups	Yes	No	Chi^2
Bank Groups			
G-1	77.00	23.00	
G-2	86.00	14.00	11.46**
G-3	79.00	21.00	
Age Groups			
Below 25	75.68	24.32	
25-35	84.87	15.13	12.49*
36-45	81.82	18.18	
46-55	76.19	23.81	
Above 55	80.00	20.00	
Occupation			
Service	81.05	18.95	
Business	80.26	19.74	
Professional	77.94	22.06	6.28
Industrialist	100.0		
Agriculture	75.00	25.00	
Others	83.02	16.98	
Educational Level			
Matriculate	62.07	37.93	
Graduate	81.37	18.63	37.94**
Post Grad.	80.18	19.82	
Professional	89.66	10.34	
Overall	80.67	19.33	

Source : Same as Table 1

Shifting of Customers

Now-a-days customer wants more facility from banks because everybody wants his work is completed within a second. That's why mostly customers are shifting their banks. The maximum average of bank group wise in private sector banks 68 pc customers are shifting public sector banks to Indian private sector bank. Similarly, majority of respondents in group I and III bank customers are shifting public sector bank to private sector banks. Occupation wise 60 pc service class respondents, 69.74 pc business class respondents are shifting public sector bank to private sector banks sand majority of respondents of professional, industrialist and others are shifting public sector bank to private sector banks. On the other hand, 50 pc agriculturist respondents are shifting private sector banks to foreign sector banks. Education level group wise 41.38 pc matriculate customers are shifting public sector banks to private sector banks and also shifting public to foreign sector banks. 59.80 pc graduates are shifting public sector banks to private sector banks and 65.77 pc professionals are responded that mostly customers shift public to private sector banks. Overall, 61.67 pc respondents responded that mostly customer are shifting public to Indian private bank. The Chi^ test is also support that the significance difference in the opinion of the respondents of all group at 1% LOS.

Table 4

Customer Perceptions: Shifting of Customers

Per cent

Group	G-I-II	G-I-III	G-II-III	G-II-I	G-III-II	G-III-I	Chi^2
Bank Groups							
G-1	56.00	23.00	10.00	5.00	6.00		
G-2	68.00	13.00	9.00	8.00	2.00		55.95**
G-3	61.00	18.00	9.00	12.00			
Age Groups							
Below 25	44.59	25.68	16.22	8.11	5.41		
25-35	67.23	22.69	4.20	3.36	2.52		
36-45	58.18	12.73	9.09	20.00			187.49**
46-55	76.19	2.38	14.29	7.14			
Above 55	80.00			10.00	10.00		
Occupation							
Service	60.00	23.16	5.26	9.47	2.11		
Business	69.74	15.79	5.26	6.58	2.63		
Professional	61.76	23.53	7.35	4.41	2.94		135.96**
Industrialist	75.00		25.00				
Agriculture	25.00		50.00	25.00			
Others	54.72	7.55	20.75	13.21	3.77		
Educational Level							
Matriculate	41.38	41.38	3.45	10.34	3.45		
Graduate	59.80	15.69	9.80	12.75	1.96		86.14**
Post Grad.	65.77	18.02	8.11	4.50	3.60		
Professional	67.24	10.34	13.79	6.90	1.72		
Overall	61.67	18.00	9.33	8.33	2.67		

Source : Same as Table 1

Which Type of Banks is Necessary in the Global Age?

The last few years have been much talk of globalization, economic liberalization and global integration in India. The banking industry has passed through various phases. Presently the banking sector is entering a new phase after liberalization of the economy. Banks have done a great job in entering banking services after globalization. Bank group wise in public sector banks 40 pc respondents responded that e-banks are necessary in global age. On the other hand, 33 pc respondents responded that fully computerized banks are necessary in global age. Similarly, 51 pc respondents of Indian private sector bank and 40 pc foreign sector bank respondents responded that fully computerized banks are necessary in global age. While 33 pc respondents of foreign sector banks responded that e-banks are necessary in global age. According to qualification 48.28 pc matriculates respondents and 40.20 pc graduate respondents responded that fully computerized banks are necessary in global age. On the other hand, above 30 pc post-graduate and professional respondents are in favour of e-banks are necessary in global age. Overall, 41.33 pc respondents are in favour of fully computerized banks and 32 pc respondents responded that e-banks are necessary in global age. The chi^ test reveals that the differences in the opinion of respondents of three bank groups and on the basis of the profile of customers are statistically significant at 1% LOS.

Table 5

Customer Perceptions: Which Type of Bank Necessary is in Global Age

Per cent

Groups	Tradition	Part.comp.	Full. Comp	E-banks	all	Chi^2
Bank Groups						
G-1	5.00	8.00	33.00	40.00	14.00	86.48**
G-2	1.00	2.00	51.00	23.00	23.00	
G-3		5.00	40.00	33.00	22.00	
Age Groups						
Below 25	2.70	6.76	39.19	29.73	21.62	
25-35	2.52	3.36	42.86	29.41	21.85	
36-45		5.45	27.27	50.91	16.36	100.04**
46-55		7.14	52.38	26.19	14.29	
Above 55	10.00		70.00		20.00	
Occupation						
Service	3.16	6.32	46.32	36.84	7.37	
Business		3.95	43.42	23.68	28.95	
Professional		4.41	45.59	29.41	20.59	147.04**
Industrialist			75.00		25.00	
Agriculture		25.00	25.00	50.00		
Others	5.66	3.77	22.64	39.62	28.30	
Educational Level						
Matriculate	6.90	6.90	48.28	27.59	10.34	
Graduate		2.94	40.20	30.39	26.47	63.21**
Post Grad.	3.60	6.31	37..84	33.33	18.92	
Professional		5.17	46.55	34.48	13.79	
Overall	2.00	5.00	41.33	32.00	19.67	

Source : Same as Table 1

Provide efficient services

Bank group wise in public sector banks majority of respondents 74 pc respondents are agree that e-channels provide efficient services to customers. Similarly, majority of respondents of Indian private sector bank and foreign banks are agree, only few respondents are disagree. Age wise majority of respondents of below 25 years 72.97 per cent respondents are agree that e-channels provide efficient services to customer. On the other hand, 90 pc respondents of above 55 years are agreed that e-channels provide efficient services to customers. Overall, WAS of among three bank groups is greater than 1. It means majority of respondents are satisfied with e-channels provide efficient services. The chi^ test reveals that the differences in the opinion of respondents of bank group is significant at 1% LOS.

Table 6

Customer Perceptions: Provide Efficient Services

Per cent

Groups	St. Disag.	Disagree	UD	Agree	St.Agree	Chi^2	WAS
Bank Groups							
G-1	2.00	9.00	15.00	41.00	33.00	63.99**	0.94
G-2	1.00	3.00	8.00	39.00	49.00		1.32
G-3	1.00	12.00	4.00	43.00	40.00		1.09
Age Groups							
Below 25	1.35	8.11	17.57	32.43	40.54	75.04**	1.03
25-35	1.68	6.72	5.04	43.70	42.86		1.19
36-45	1.82	12.73	5.45	45.45	34.55		0.98
46-55		7.14	9.52	47.62	35.71		1.12
Above 55			10.00	20.00	70.00		1.60
Occupation							
Service		7.37	11.58	41.05	40.00	213.10**	1.14
Business		10.53	7.89	43.42	38.16		1.09
Professional	2.94	11.76	2.94	45.59	36.76		1.01
Industrialist	25.00			25.00	50.00		0.75
Agriculture	25.00			50.00	25.00		0.50
Others		1.89	15.09	32.08	50.94		1.32
Educational Level							
Matriculate	3.45	6.90	6.90	20.69	62.07	70.08**	1.31
Graduate	2.94	8.82	10.78	35.29	42.16		1.05
Post Grad.		9.01	7.21	45.95	37.84		1.13
Professional		5.17	10.34	51.72	32.76		1.12
Overall	1.33	8.00	9.00	41.00	40.67		1.12

Source : Same as Table 1

E-Banking Services is Very Necessary

Bank group wise in group I majority of respondents 97 pc respondents are agree that e-banking services is very necessary. Similarly, 99 pc respondents in Indian private sector and all the respondents of foreign banks are agreeing that e-banking services are very necessary. Age wise all the respondents of below 25 and 36 to 55 years are agree that e-banking services are very necessary. On the other hand, 98 pc respondents of 25 to 35 years and 90 pc respondents of above 55 years are agree that e-banking services are very necessary. Occupation wise all the service class and majority of business class, professional, industrialist and agriculturist respondents are strongly agree that e-banking services are very necessary. Education level wise all the matriculate and professional respondents are agree that e-banking services are very necessary. Overall, the majority of respondents (98.67 pc) are in favour of e-banking services is very necessary.

Table 7

Customer Perceptions: E-Banking Services are Very Necessary

Per cent

Groups	St. Disag.	Disagree	UD	Agree	St.Agree	Chi^2	WAS
Bank Groups							
G-1	2.00		1.00	21.00	76.00	37.88**	1.69
G-2			1.00	28.00	71.00		1.70
G-3				16.00	84.00		1.84
Age Groups							
Below 25				22.97	77.03		1.77
25-35	0.84		0.84	17.65	80.67	80.78**	1.77
36-45	1.82			20.00	78.18		1.73
46-55				30.95	69.05		1.69
Above 55			10.00	30.00	60.00		1.50
Occupation							
Service				27.37	72.63		1.73
Business			1.32	22.37	76.32		1.75
Professional	1.47			16.18	82.35		1.78
Industrialist	25.00			25.00	50.00	180.63**	0.75
Agriculture					100.0		2.00
Others			1.89	18.87	79.25		1.77
Educational Level							
Matriculate				27.59	72.41		1.72
Graduate	1.96		0.98	25.49	71.57	34.81**	1.65
Post Grad.			0.90	20.72	78.38		1.77
Professional				13.79	86.21		1.86
Overall	0.67		0.67	21.67	77.00		1.74

Source : Same as Table 1

Overall, WAS of among three bank groups is greater than 1. It means majority of respondents are satisfied that e-banking services are very necessary. The chi^ test reveals that the differences in the opinion of respondents of bank group is significant at 1% LOS.

E-Banking is going to Improve Quality of Customers Services

In IT era, e-banking is the most popular for their services. Bank group wise in group I majority of respondents 90 pc respondents are agree that e-banking is going to improve quality of services. Similarly, in Indian private sector and foreign banks majority of respondents are agree regarding statement. Overall, WAS of among three bank groups is greater than 1. It means majority of respondents are satisfied that e-banking is going to improve quality of services. The chi^ test reveals that the differences in the opinion of respondents of bank group is significant at 1% LOS.

Table 8

Customer Perceptions: E- Banking is going to improve the Quality of Services

Per cent

Groups	St. Disag.	Disagree	UD	Agree	St.Agree	Chi^2	WAS
Bank Groups							
G-1	2.00		8.00	39.00	51.00	79.33**	1.37
G-2			1.00	39.00	60.00		1.59
G-3		1.00	11.00	24.00	64.00		1.51
Age Groups							
Below 25			16.22	32.43	51.35	99.79**	1.35
25-35	0.84	0.84	2.52	31.93	63.87		1.57
36-45	1.82		5.45	34.55	58.18		1.47
46-55				40.48	59.52		1.60
Above 55			20.00	40.00	40.00		1.20
Occupation							
Service			7.37	41.05	51.58	199.48**	1.44
Business		1.32	9.21	23.68	65.79		1.54
Professional	1.47		2.94	32.35	63.24		1.56
Industrialist	25.00			25.00	50.00		0.75
Agriculture				50.00	50.00		1.50
Others			7.55	37.34	54.72		1.47
Educational Level							
Matriculate			13.79	27.59	58.62	39.48**	1.45
Graduate	1.96	0.98	6.86	32.35	57.84		1.43
Post Grad.			6.31	36.94	56.76		1.50
Professional			3.45	34.48	62.07		1.59
Overall	**0.67**	**0.33**	**6.67**	**34.00**	**58.33**		**1.49**

Source : Same as Table 1

Quality of inputs and outputs is superior in computerized system

Bank group wise in group I majority of respondents 83 pc respondents are agree that quality of inputs and outputs is superior in computerized system. Similarly, in Indian private sector banks and foreign banks majority of respondents are in agree with the above statement. Age wise majority of the highest and the lowest age respondents are agree that quality of inputs and outputs is superior in computerized system. On the other hand, 80 pc respondents of above 55 years age respondents are strongly agree. Overall, the majority of respondents (89.67 pc) are in favour of regarding statement.

Overall, WAS of among three bank groups is greater than 1. It means majority of respondents are satisfied that quality of inputs and outputs is superior in computerized system. The chi^ test reveals that the differences in the opinion of respondents of bank group is significant at 1% LOS.

Table 9

Customer Perceptions: Quality of Inputs and outputs are superior in computerized system

Per cent

Group	St. Disag.	Disagree	UD	Agree	St.Agree	Chi^2	WAS
Bank Groups							
G-1	4.00	3.00	10.00	37.00	46.00	84.75**	1.18
G-2		2.00	4.00	36.00	58.00		1.50
G-3	6.00	2.00		28.00	64.00		1.42
Age Groups							
Below 25	4.05	4.05	9.46	27.03	55.41	71.25**	1.26
25-35	3.36	0.84	3.36	32.77	59.66		1.45
36-45	3.64	1.82	3.64	43.64	47.27		1.29
46-55	2.38	4.76		40.48	52.38		1.36
Above 55			10.00	10.00	80.00		1.70
Occupation							
Service	5.26	3.16	6.32	28.42	56.84	132.63**	1.28
Business		3.95	1.32	23.68	71.05		1.62
Professional	5.88		5.88	39.71	48.53		1.25
Industrialist	25.00			25.00	50.00		0.75
Agriculture				25.00	75.00		1.75
Others		1.89	5.66	50.94	41.51		1.32
Educational Level							
Matriculate	10.34	10.34	6.90	24.14	48.28	78.96**	0.90
Graduate	2.94	0.98	1.96	33.33	60.78		1.48
Post Grad.	2.70	2.70	6.31	36.04	52.25		1.32
Professional	1.72		5.17	34.48	58.62		1.48
Overall	3.33	2.33	4.67	33.67	56.00		1.37

Source : Same as Table 1

Computerized information system is more accurate than manual system.

Bank group wise in group I majority of respondents 81 pc respondents are agree that computerized information system is more accurate than manual system. Similarly, majority of the respondents of group II and group III are agree that computerized information system is more accurate than manual system i.e.93 per cent and 83 per cent and all the agriculturist respondents are agreeing that computerized information system is more accurate than manual system. Overall, majority of the respondents (85.67 pc) are agree that computerized information system is more accurate than manual system. Overall, WAS of among three bank groups is greater than 1. It means majority of respondents are satisfied that computerized information system is more accurate than manual system. The chi^ test reveals that the differences in the opinion of respondents of bank group is significant at 1% LOS.

Table 10

Customer Perceptions: More Accuracy in Computerized Banks

Per cent

Group	St. Disag.	Disagree	UD	Agree	St.Agree	Chi^2	WAS
Bank Groups							
G-1	3.00	6.00	10.00	39.00	42.00	45.30**	1.11
G-2	1.00	1.00	5.00	40.00	53.00		1.43
G-3	1.00	5.00	11.00	29.00	54.00		1.30
Age Groups							
Below 25	2.70	4.05	20.27	28.38	44.59	110.19**	1.08
25-35	1.68	5.04	4.20	37.82	51.26		1.32
36-45		5.45	5.45	45.45	43.64		1.27
46-55	2.38		4.76	38.10	54.76		1.43
Above 55			10.00	10.00	80.00		1.70
Occupation							
Service	4.21	1.05	9.47	29.47	55.79	127.58**	1.32
Business	1.32	6.58	11.84	22.37	57.89		1.29
Professional		5.88	5.88	44.12	44.12		1.26
Industrialist			25.00	75.00			0.75
Agriculture				50.00	50.00		1.50
Others		3.77	5.66	52.83	37.74		1.25
Educational Level							
Matriculate	6.90	3.45	13.79	31.03	44.83	47.63**	1.03
Graduate	0.98	1.96	11.76	36.27	49.02		1.30
Post Grad.	1.80	5.41	5.41	36.04	51.35		1.30
Professional		5.17	6.90	37.93	50.00		1.33
Overall	1.67	4.00	8.67	36.00	49.67		1.28

Source : Same as Table 1

E-Delivery Channels have increased the Role of Employees in Banks

Bank group wise in group I majority of respondents 55 pc respondents are agree. Similarly, in group II and III banks majority of respondents are in favour of e-delivery channels have increased the role of employees in banks i.e. 57 per cent and 48 per cent respectively. On the basis of the profile of bank employees majority of respondents are agree that e-delivery channels have increased the role of employees in banks. On the other hand 60 pc respondents of above 55 years age are strongly agree that e-delivery channels have increased the role of employees in banks. Overall, 63.34 pc respondents are in favour of above statement and 26 pc respondents are against this statement. Overall, WAS of among three bank groups is insignificant it is less than 1. The chi^ test reveals that the differences in the opinion of respondents of bank group is significant at 1% LOS.

Table 11

Customer Perceptions: E-Channels has Increased the Role of Employees

Per cent

Group	St. Disag.	Disagree	UD	Agree	St.Agree	Chi^2	WAS
Bank Groups							
G-1	7.00	22.00	16.00	31.00	24.00	58.74**	0.43
G-2	2.00	20.00	21.00	19.00	38.00		0.71
G-3	4.00	23.00	25.00	15.00	33.00		0.50
Age Groups							
Below 25	1.35	24.32	21.62	17.57	35.14	70.98**	0.61
25-35	6.72	21.85	21.85	22.69	26.89		0.41
36-45	5.45	25.45	20.00	23.64	25.45		0.38
46-55		14.29	16.67	28.57	40.48		0.95
Above 55	10.00	10.00	20.00		60.00		0.90
Occupation							
Service	5.26	23.16	13.68	15.79	42.11	96.95**	0.66
Business	3.95	19.74	23.68	19.74	32.89		0.58
Professional	7.35	23.53	23.53	27.94	17.65		0.25
Industrialist		25.00	25.00	50.00			0.25
Agriculture		25.00	50.00	25.00			0.00
Others		18.87	22.64	24.53	33.96		0.74
Educational Level							
Matriculate		10.34	13.79	27.59	48.28	48.82**	1.14
Graduate	3.92	20.59	22.55	23.53	29.41		0.54
Post Grad.	5.41	23.42	23.42	21.62	26.13		0.40
Professional	5.17	25.86	15.52	15.52	37.93		0.55
Overall	**4.33**	**21.67**	**20.67**	**21.67**	**31.67**		**0.55**

Source : Same as Table 1

E-Delivery Channels are Going to Reduce the Incidence of Bank Frauds

Bank group wise in public sector banks majority of respondents 72 pc respondents are agree that e-delivery channels are going to reduce the incidence of bank frauds. Similarly, in Indian private sector and foreign banks majority of respondents are agreed with above statement i.e. 76 per cent and 55 per cent. On the basis of profile of the customer majority of respondents are agree that e-delivery channels are going to reduce the incidence of bank frauds. Overall, 67.67 pc respondents are in favour of above statement and 21.33 pc respondents are not in favour of regarding statement. Overall, majority of respondents WAS of among three bank groups is insignificant it is less than 1. The chi^ test reveals that the differences in the opinion of respondents of bank group is significant at 1% LOS.

Table 12

Customer Perceptions: E-Delivery Channels are Going to Reduce the Incidence of Bank Frauds

Group	St. Disag.	Disagree	UD	Agree	St.Agree	Chi^2	WAS
Bank Groups							
G-1	3.00	13.00	12.00	37.00	35.00	76.92**	0.88
G-2	5.00	9.00	10.00	29.00	47.00		1.04
G-3	11.00	23.00	11.00	23.00	32.00		0.42
Age Groups							
Below 25	8.11	12.16	16.22	31.08	32.43	61.78**	0.68
25-35	7.56	16.81	9.24	26.89	39.50		0.74
36-45	3.64	21.82	7.27	34.55	32.73		0.71
46-55	4.76	7.14	11.90	23.81	52.38		1.12
Above 55		10.00	10.00	50.00	30.00		1.00
Occupation							
Service	6.32	12.63	12.63	24.21	44.21	58.03**	0.87
Business	5.26	14.47	5.26	31.58	43.42		0.93
Professional	8.82	17.65	11.76	27.94	33.82		0.60
Industrialist		25.00	25.00	50.00			0.25
Agriculture		25.00	25.00	25.00	25.00		0.50
Others	5.66	15.09	13.21	37.74	28.30		0.68
Educational Level							
Matriculate		3.45	17.24	34.48	44.83	47.56**	1.21
Graduate	8.82	13.73	9.80	34.31	33.33		0.70
Post Grad.	4.50	17.12	11.71	26.13	40.54		0.81
Professional	8.62	18.97	8.62	25.86	37.93		0.66
All Data	6.33	15.00	11.00	29.67	38.00		0.78

Source : Same as Table 1

The Future of E-Banking is Bright

The Future of e-banking is bright because in the coming days everybody will use e-delivery channels. Bank group wise majority of all bank groups respondents are agree that the future of e-banking is bright. Overall, the majority of the respondents (98.34 pc) are in favour of above statement. Overall, WAS of among three bank groups is significant because it is greater than 1.The chi^ test reveals that the differences in the opinion of respondents of bank group is significant at 1% LOS.

Table 13

Customer Perceptions: The Future of E- Banking is Bright.

(Per cent)

Group	St. Disag.	Disagree	UD	Agree	St.Agree	Chi^2	WAS
Bank Groups							
G-1	2.00	3.00	5.00	33.00	57.00	67.45**	1.40
G-2	1.00	2.00	4.00	28.00	65.00		1.54
G-3	11.00	1.00	3.00	34.00	51.00		1.13
Age Groups							
Below 25	10.81	2.70	6.76	28.38	51.35	79.57**	1.07
25-35	4.20	2.52	3.36	27.73	62.18		1.41
36-45	1.82		3.64	43.64	50.91		1.42
46-55		2.38	2.38	28.57	66.67		1.60
Above 55				50.00	50.00		1.50
Occupation							
Service	4.21	3.16	5.26	27.37	60.00	87.73**	1.36
Business	6.58	2.63	1.32	22.37	67.11		1.41
Professional	5.88		4.41	35.29	54.41		1.32
Industrialist			25.00	50.00	25.00		1.00
Agriculture				25.00	75.00		1.75
Others	1.89	1.89	3.77	47.17	45.28		1.32
Educational Level							
Matriculate			13.79	27.59	58.62	77.40**	1.45
Graduate	8.82	3.92	1.96	32.35	52.94		1.17
Post Grad.	1.80	0.90	3.60	33.33	60.36		1.50
Professional	5.17	1.72	3.45	29.31	60.34		1.38
All Data	**4.67**	**2.00**	**4.00**	**31.67**	**57.67**		**1.36**

Source : Same as Table 1

Rank the Suggestions which can ensure Efficient Service through E-Channels

On the basis of the responses regarding the statement which can ensure efficient service through e-channels majority of the respondents ranked first to by providing variety of services according to customers requirement tastes. Similarly, by creating awareness among the employees, by making convenient accessibility and polite and sympathy with employees are considered better. They are ranked second, third and fourth respectively. But unfortunately an effective method of delivery and by assisting to the bank customers to choose best e-channels is not preferred by the bank customers.

Table 14

Rank the Suggestions which can Ensure Efficient Service through E-Channels

Item	Average Rank	Average Score	Total Score	Overall Ranking
③ Create awareness of employees	3.10	56.72	4684	2
③ Variety of services	2.67	63.89	5200	1
③ Convenient accessibility	3.20	55.06	4564	3
③ Effective methods of delivery	4.01	41.44	3584	5
③ Polite and sympathy. Employees	3.93	42.89	3688	4
③ Assisting customers to choose	4.16	39.06	3428	6

Source : Same as Table 1

Rank the Suggestions to Improve Services

On the basis of the responses regarding suggestions to improve the services of customer's bank majority of the respondents ranked first to more training programmes. That is the reason that they want to develop training programmes in their banks. Similarly, personal contact programmes, information/demo at counter and staff training is considered better. They are ranked second, third and forth respectively. Customer education and counseling, simplifications of rules and transparency are considered good. They are ranked fifth, sixth and seventh respectively. But unfortunately, personalized and door step service, Demo fare on e-channels and guide facility is not preferred by the bank customers.

Table 15

Rank the Suggestion to Improve Services

Item	Average Rank	Average Score	Total Score	Total Rank
③ More training progs	3.93	65.70	8484	1
③ Demo-fares on e- channels	6.15	43.47	5816	9
③ Information /demo . at counter	5.21	52.90	6948	3
③ Personal contact progs	4.81	56.87	7424	2
③ Customer education and couns.	5.46	50.37	6644	5
③ Personalized /door step service	6.12	43.77	5852	8
③ Staff training	5.26	52.37	6884	4
③ Simplification of rules	5.60	49.00	6484	6
③ Guide facility	6.30	41.97	5636	10
③ Transparency	6.10	43.97	5876	7

Source : Same as Table 1

Rank the Reasons to Shift E-Banks

On the basis of the responses regarding reasons to shift e-banks majority of the respondents ranked first to provide smoother and free flow of information. Similarly, speed up delivery time, help to reduce errors and help to make financial transaction

easier to manage is ranked second, third and forth respectively. Checking frauds, immediate response and make work easier are considered good. They are ranked fifth, sixth and seventh respectively. But unfortunately, improved personal efficiency, better quality products/services and innovative products/services are not preferred by the bank customers.

Table 16

Rank the Statement Reason to Shift to E-Banks

Item	Average Rank	Average Score	Total Score	Total Rank
③ Smooth and free flow of info.	4.84	66.64	10996	1
③ Speedy delivery time	5.33	62.82	10400	2
③ Fin. Transaction more easy	6.41	54.51	9104	4
③ Reduced errors	6.17	56.38	9396	3
③ Checking frauds	6.51	53.74	8984	5
③ Customized solutions	7.28	47.82	8060	9
③ Immediate responses	6.74	51.97	8708	6
③ Timely and accurate solutions	7.24	48.18	8116	8
③ Improved personal efficiency	7.55	45.79	7744	10
③ Make work easier	6.97	50.23	8436	7
③ Services at reasonable rate	8.53	38.21	6560	12
③ Better quality products/serv.	8.47	38.72	6640	11
③ Innovative product/serv.	8.77	36.36	6276	13

Source : Same as Table 1

E-channels according to utility (Ranking)

On the basis of the responses regarding reasons for e-channels according to utility majority of the customers ranked first to ATMs, among the different e-channels and this is the reasons many banks is installing fixed ATMs, Mobile ATMs. Now-a-day mobile ATMs facilities are provided in trains and in air services. Similarly, online banking, e-payments and Internet banking is considered better. They are ranked second, third and forth respectively. But unfortunately tele banking is not preferred by bank customers.

Table 17

Ranking to E-Channels According to their Utility

Item	Average Rank	Average Score	Total Score	Overall Ranking
③ ATM	1.37	82.60	5556	1
③ E-payments	3.22	45.60	3336	3
③ Mobile banking	3.62	37.53	2852	4
③ Online-banking	2.91	51.80	3708	2
③ Tele-banking	3.89	32.27	2536	5

Source : Same as Table 1

STRATEGIES

On the basis of the findings of the study, we may put some suggestions to make e-banking services more effective i.e. suggestions are given below:

- *Popularity of E-Channels:* As ATMs, credit cards and internet banking are most preferred by the customers due to time and cost utility and efficient services where other channels are not much popular. So the banks should make efforts like arrange demo fares or provide information at counter to make the channels popular and easier to customers.

- *Understanding the onion of customer experience and its implications* An onion has layers and as you peel off one, the one lying underneath appears. The same applies to customer experience. Our experience shows that there are multiple layers to customer experience with a bank. The banks deliver customer delight through managing lower order satisfaction as well as higher order loyalty. The failure to do so usually results in sub optimal customer delight.

- *Bridging the gap between top management and vision and actual implementation* Banks should invest in adequate training and resources incentives key staff and follow a goal led action plan in their quest to operationally the banks vision.

- *Providing different strokes for different folks within the bank:* - Banks should set up a system of interlocking and relevant goals & trains and incentives employees to deliver customer delight in their domains.

- *Making Effective uses of internal customer profile/ history data* Banks should make use of extensive customer information not just for selling and fraud detection, but also to gather customer insights.

- *Identifying Customer segments and customizing products/services No* two customers are the same. Many times banks tend to treat them alike when it comes to products or service delivery. Some customers can be extremely savvy when it comes to technology, some could be extremely shy. Some customers refer detailed investment analysis other do not. So banks should able to customize their products/service offers to target specific customer segments.

- *Awareness regarding e-delivery channels:* As e-banking is a new concept and more than 50 percent respondents are not aware about e-channels and their operating system, so the banks should provide appropriate information and demo to operate these channels and solve their any problem regarding these channels on priority basis in a polite manner. The bank should provide operational knowledge of e-channels with their each function to the customers, separately to the different age groups and occupation wise as well.

- *Rural and semi-urban sector:* In India more than 60 percent of the population is residing in the rural areas. Therefore, it is the need of the hour to capture this

market through e-delivery channels. Hence, banks should make e-delivery channels popular in rural and semi-urban areas too with some practical and effective strategies.

- After designing services to suit the segments of customers, good delivery is important. If the delivery is made with speed, accuracy, courtesy and concern, it is said to be a good delivery, Good service results when the provider meets or exceeds the expectations of customers.
- *Transparency:* The banks should disclose the full information to the customers to win their confidence like service charges, service tax, interest, penalty, if any, etc.

IMPLICATIONS

The customer is gave the preference of e banking services. On the basis of some aspects, paper gives more emphasis on the new strategies to enhance customer delight in banks.

LIMITATIONS

The present study is only concerned with Punjab State and small sample of 1200 bank customers of only three bank branches of public sector, Indian private and foreign banks. It is only due to the shortage of the time and funds.

CONCLUSION

In the emerging competitive environment and IT era, with little or no distinction in the product offerings, it is the speed of rendering service that sets apart one bank from another. Technology based services have started getting wider acceptance among the clients. Those banks which are legging in implementation of CBS have to speed up to retain their existing client base. Customer is the kingpin around whom all the activities of the banks revolve. Customers prefer e-channels because of time and cost utility and it is a efficient service to customers. The concludes that future outlook of e delivery channels in Indian banks is bright, the need is only to change the mind-set of vision.

REFERENCES

- *Goyal, S. and Thakur, K.S. (2007-08),* 'A Study of Customer Satisfaction Public and Private Sector Banks of India', Punjab Journal of Business Studies, Vol.3, No.2, (Oct.-March), pp.121-127
- *Jain, A.K. and Jain, P. (2006),* 'Customer Satisfaction in Retail Banking Services', NICE Journal of Business, Vol.1, No.2, (July- Dec.), pp.95-102
- *Kamakodi, N. (2007),* 'Customer Preferences on e-Banking Services- Understanding through a Sample Survey of Customers of Present Day Banks in India', Contributors, Vol. IV, Banknet Publications, (Oct.), pp.30-43
- *Lal, R.C. (2007),* 'Banking Transformation through IT in India ', Journal of Commerce and Trade, Vol. 2, No.2, (October), pp. 46-48
- *Mishra, J.K. and Jain, M. (2006-07),* 'Constituent Dimensions of Customer Satisfaction: A Study of Nationalized and Private Banks ', Prajnan, Vol. XXXV, No.4, pp.390-398
- *Parimal, V. (2002),* 'Measurement of Customer Satisfaction: A study of Banking Services', Business Perspectives, Vol. 4, No. 1, pp. 73-88
- *Ray, M., Waleed. A. and Barney, Jay B. (2005),* 'Information Technology and the Performance of the Customer Service Process: A Resource Based Analysis's', MIS Quarterly, Vol. 29, No.4, (Dec.), pp.625-652
- *Paul, J. and Mukherjee, A. (2006-07),* 'Retail Banking, ATMs and Supply Chain Management in Banking: A Study of Two Banks', Prajnan, Vol. XXXV, No.1, pp.47-60
- *Uppal, R.K. (2008),* 'Customer Perception of E-Banking Services of Indian Banks: Some Survey Evidence', The ICFAI Journal of Bank Management, Vol. VII, No.1, (February), pp.63-74
- *Vanniarajan, T. and Nathan, S.M. (2007-08),* 'Performance Only Measurement of Service Quality and Customer Satisfaction in Indian Commercial Banking', Punjab Journal of Business Studies, Vol.3, No.2, (Oct.-March), pp.1-16

" GLOBAL FINANCIAL CRISIS AND RESILIENCE OF INDIAN BANKING SECTOR."

(A STUDY OF SELECTED FINANCIAL PARAMETERS OF SCHEDULED COMMERCIAL BANKS)

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1. Introduction:

The turmoil in the International financial markets of advanced economies got started around mid 2007 as exacerbated substantially since August 2008. The financial market crisis has led to the collapse of major financial institutions and was now beginning to impact the real economy in the advanced economies. As this crisis unfolded credit markets appear to be drying up in the developed world.

India like most other emerging market economies was not seriously affected by the financial turmoil as in developed economies. The Indian economy is now a relatively open economy despite the capital account not being fully opened. The financial sector especially banks are subject to prudential regulations both in regard to capital and liquidity. As the current global financial crisis has shown liquidity risks can rise many fold during a crisis and can pose serious down side risks to macro economic and financial stability. The Reserve Bank had already put in place steps to mitigate liquidity risks at the very short end, risks at the systemic level and at the institution level as well.[1]

One of the key features of the current financial turmoil has been the lack of perceived contagion being felt by the banking systems in Emerging Market Economies particularly in Asia. The Indian banking system also has not experienced any contagion similar to its peers in the rest of the Asia. A detailed study undertaken by Reserve Bank of India in September 2007 on the impact of the sub prime episode on the Indian banks had revealed that none of the Indian banks or foreign banks had revealed with whom the discussions had been held had any direct exposure to the sub prime market in US or other markets.[2]

There were two distinct phases in 2008-09 during which the transmission of global shocks through trade, finance and expectation channels posed different but significant challenges for the Reserve Bank. In the first half of the year the world experienced

simultaneous increase in both food and commodity prices and there was return of inflation after a phase of great moderation. In the second half of the year the global financial crisis and the subsequent global recession dramatically changed the nature of the challenge emanating from globalization.[3]

The banking sector was not affected as it had hardly any direct exposure to sub prime assets. Moreover banks were well capitalized and inherently sound. The reduced foreign funding and subdued domestic market however put pressure on some segments of the financial system such as NBFCs and mutual funds. During the initial phases of the global crisis, the Indian financial markets remained unaffected as the direct exposure of banks to global sub prime assets was negligible. The growth process being largely domestic demand driven remained broadly intact. It was then perceived that India and other EMEs were decoupled from the advanced economies. As indicated by Governor Dr.Subbarao, "The decoupling theory was never totally persuasive. As the crisis intensified after the Layman collapse the global shocks first impacted the domestic financial market and then transmitted to the real economy through the trade, finance and confidence channels.[4]

2. Hypothesis:

1. Global financial turmoil did not have a major impact on the banking sector in India.
2. The scheduled commercial banks have shown resilience to the financial turmoil.
3. The steps to mitigate risks by the Reserve Bank of India reduced the impact of financial turmoil on the Banking Sector.

3. Objectives of the Study:

1. To review and analyze the impact of global financial crisis on Indian economy.
2. To study various financial parameters of the select banks during recession period.
3. To study how the monetary policy reacted to financial crisis.
4. To analyze the impact of crisis on select banks.
5. To study the measures taken by Reserve Bank of India to mitigate risk.

4. Methodology:

The study includes field research for three major banks – a public sector, a private sector and a foreign bank in India. In the field research the information was collected through personal investigations and questionnaire scheduled techniques to managers and executives of banks. The analysis also includes library research, intensive study of various journals and analysis of secondary data.

5. Limitations:

1. The study is based on the primary data (field research) and secondary data has also been taken into consideration.
2. In the present study under consideration statistical tools have not been used.
3. Personal observation also form a part of this research paper (so it leads to subjectivity).

Inspite of the above mentioned limitations the study would show valuable insight of the above mentioned topic.

6. Financial turmoil and India

In this section researcher attempts to analyze the financial parameters of select banks then proceeds to analyze the responses by senior banking personnel regarding financial turmoil and its impact on the banking sector and finally does a overview of Reserve Bank of India's monetary policy responses to the financial crisis

6.1 Analysis of the impact of Financial Turmoil on the select financial parameters of Scheduled commercial banks in India

Table 6.1.1(Please refer to annexure) depicts various financial parameters of select banks and the researcher attempts to compare these parameters. The Indian banking sector has shown remarkable resilience even amidst the worst ever financial catastrophe that hit the global economy about a year ago. The data analysis proves that there performances for the selected fiscal years are not that disappointing.

Indian banks which initially were in a denial mode about the impact of the crisis but soon admitted to vulnerability to global shocks have shown remarkable resilience, thanks to the Reserve Bank of India's timely and prudent measures which saved the domestic banks from the crisis and from the worst financial cataclysm since the Asian financial crisis of 1997.The analysis shows ,the domestic banking has done remarkably well on parameters like returns, maintaing profitable growth and risk management.

CRAR- This parameter has gone up for at least four banks from 2008 to 2009 including public, private and foreign banks which implies that the bank is stronger and has the ability to meet additional capital .It has marginally gone down for IDBI and remained at the same level for axis bank

Net NPAs/Net Advances-The Table depicts that this parameter has gone down for Punjab National Bank and Industrial Development Bank of India and it has gone up for ICICI, Deutsche Banks and HSBC for the period into consideration .This parameters gauges the asset quality of banks and data shows that few accounts did not adhere to credit discipline.

Return on Assets-The table shows that this parameter has shown a slight improvement for Punjab National Bank, Axis Bank, Deutsche Bank and for Industrial Development Bank of India, ICICI and HSBC it has shown a slight decline from 2008 to 2009.

Credit-Deposit Ratio-This parameter has shown slight improvement in Punjab National Bank, Axis bank and ICICI, the other banks have shown a slight decline from 2008 to 2009.

Profit per employee-The Punjab National Bank has shown a major improvement in the parameter were as Axis Bank and ICICI has shown a marginal improvement and Deutsche bank, HSBC and IDBI have shown a slight decline from 2008 to 2009.

So the banks exhibiting higher ratio have indicated higher efficiency of management

Business per employee-To measure the efficiency of management the parameter like business per employee is used .The Punjab National Bank,IDBI and ICICI have shown improvement in the select parameter, were as Axis Bank, Deutsche and HSBC depict a decline from 2008 to 2009 which implies that there is slight decline efficiency of all the employees of these banks during and after the financial turmoil.

Non –interest Income /working funds- This measures the income from operations other than lending as a percentage of working funds. As far as this select parameter is concerned it has gone down for majority of Banks which includes IDBI, ICICI, Deustche Bank, HSBC Ltd. It has improved slightly for Punjab National Bank and Axis Bank.

The above analysis of parameters of Scheduled Commercial Banks clearly indicates that though there has been some impact of financial crisis but the banks and the parameters have shown resilience due to sound proactive policies of Reserve Bank of India.

6. 2 Research findings of the study

As a part of study, primary data was collected through structured questionnaires; the analysis and findings of the same is given below:

The managers of all the selected banks gave a very candid opinion on the financial turmoil and how it impacted banking sector in general and there bank in particular, further how these banks faced the challenges and did repose faith on the Reserve bank of India.

1. Perception of a senior banking official of a Public Sector Bank: The manager stated that though bank worked in a stringent environment it hardly impacted their profitability and conservative banking has done good as the banks have never thought of lending the way foreign banks have done (sub-prime lending)

The official further added that the bank took timely quantitative and qualitative measures and even restricted lending against mortgage of properties and the two major sectors that have shown credit growth in 2009 are SME and Agriculture. Further the financial parameters due to global financial meltdown had marginal effect. The Manager firmly asserted that present policies implemented by Reserve Bank of India should continue.

2. Perception of a senior banking official of a Private Sector Bank: The senior official made it clear that there wasn't any impact on any Indian bank due to global financial turmoil. The bank has been very much progressive and realigned the strategies which suits to face the market challenges and dynamics. The competition in the market has enabled the bank to improve in the product front.

The visionary senior banking official was content with conservative banking and slow financial sector reforms and stated Indian economy cannot afford to risk the way developed economies do. The banks have to reach to the rural sector in real sense then go with further reforms. The banker stated that farm lending and SME segment will experience credit growth in 2009.The banker asserted that Reserve Bank of India has excellent think tank to handle any turmoil provided government doesn't interfere and as far as financial parameters are concerned Net NPAs and business per employee have been affected as bank have deferred their expansion plans and the bank hasn't confronted any liquidity crisis.

3. Perception of a Senior Banking official of a Foreign Bank: The foreign bank official stated that the due to financial turmoil the personal financial services and credit cards got affected. He further added that cost containment has become the key and "return on a dollar spent" is being tracked in order to keep operational costs under control. The banker endorsed the stringent environment and stated that it will help explore newer avenues and optimum way of operating business further the conservative banking did protect the Indian banking industry ,infact it is strict credit norms that ensured lower 'bad debts'.

The official stated that the bank was conservative during financial turmoil in their approach and kept track of all lending but at the same time explored new opportunities within a given business segment to add incremental growth. The respondent asserted that power ,infrastructure ,auto and heavy industries will experience credit off take during 2009.The banker further suggested that with regards to financial regulation we need to have better control on lending, Home loans, Auto finance and Credit cards should see stricter norms of disbursement. The banker further concluded that as overall business did get affected as profit margins declined and NPAs were also added up during this period.

4.Perception of Reserve Bank of India Officials-The officials stated that regulators were complacent abroad, they had loose monetary policy with too much liquidity in markets did more harm than good for their financial system. Liberalization is a process

and cautious approach is needed, they further added that now nobody discusses about capital account convertibility. The officials stated that go slow is welcome but reversing the financial flows is not acceptable. So according to the officials conservatism paid off, regulation should continue. The road is still opening up depending upon the circumstances we need to decide the policy stance.

6.3 Reserve Bank of India and Monetary policy response to the crisis

In the midst of an international financial crisis it is important to remember that any crisis is also a window of opportunity. India reacted boldly to the gulf crisisin1990. Too much risk aversion in the policy making can impede growth and slow down efforts to alleviate poverty.

The conduct of Monetary Policy is an area where traditionally there have been differences between the Government and Reserve Bank of India on what is desirable and what is feasible. There were policy differences on the opening up of the banking sector soon after Reddy resumed office. It was observed that the Government was bowing to the pressure from the global financial markets whose argument was that our banks should be made to face global competition and be forced to function under stiff competitive conditions at the global level, as otherwise they would remain adolescent institutions. [5]

As the crisis intensified, Reserve Bank of India like most central banks took a number of conventional and unconventional measures to augment domestic and foreign exchange liquidity and sharply reduced the policy rates and foreign exchange liquidity and sharply reduced the policy rates. In a span of seven months between October 2008 and April 2009, there was unprecedented policy activism. For example, the repo rate was reduced, then the reverse repo rate was reduced, the CRR was reduced and it was 5% and the actual/ potential revision of primary liquidity was of the order of Rs 5.6 trillion.

There are however some key differences between the actions taken by Reserve Bank of India and the Central Banks in many advanced countries. Firstly, in the process of liquidity injection the counter parties involved were banks, even liquidity measures for mutual funds, NBFCs and housing finance companies were largely channeled through the banks. Secondly, availability and deployment of multiple instruments facilitated better sequencing of monetary and liquidity measures. Thirdly, the experience in the use of pro-cyclical provisioning norms and counter cyclical regulations ahead of the global crisis helped enhance financial stability.[6]

Some of the important measures by RBI include firstly restricting the overnight unsecured market for funds to banks and primary dealers. Secondly, the Reserve Bank has put prudential limits on banks on their purchased inter-bank liabilities and these limits are linked to their net worth. Furthermore, the incremental deposit_ratio of banks is also monitored by the Reserve Bank since this ratio indicates the extent to which the banks are funding credit with borrowings from the wholesale market. Thirdly,

asset liability management guidelines for dealing with overall asset liability mismatches take into account both on and off balance sheet items. In order to further strengthen capital requirements, the credit conversion factors, risk rates and provisioning requirements for specific of balance sheet items including derivatives have been reviewed.[7]

The financial crisis in advanced economies on the back of the sub prime turmoil has been accompanied by near drying up of thirst among major financial market and sector players. In view of the mounting losses and elevated uncertainty about further possible losses and erosion of capital in contrast to the extreme volatility leading to freezing of money markets in major advanced economies, money markets in India have been by and large functioning in a orderly fashion, with some pressures. The Reserve Bank has been able to manage domestic liquidity and monetary conditions consistent with its monetary policy stance.

This has been enabled by appropriate use of range of instruments available for liquidity management for Reserve Bank of India's such as Cash Reserve Ratio and Statutory Liquidity Ratio stipulations and OMO including the market stabilization scheme MSS and the liquidity adjustment facility LAF.[8]

The aftermath of the crisis has seen considerable progress with a broad agreement on the general principles for strengthening the prudential and regulatory framework for banks, the need to develop macro prudential risks in the financial system and take action to limit such risks. The precise challenge for the Reserve Bank is to support the recovery process without compromising on price stability. The conventional monetary policy tools i.e. the policy rates were left unchanged but certain special liquidity support measures were withdrawn like SLR has been restored to 25 percent from 24 percent, the limit for export credit refinance which was raised to 50 percent of eligible outstanding export credit, has been returned to the pre-crisis level of 15 percent and the two non-standard refinance facilities for scheduled commercial banks which was available till March 31,2010 have been discontinued with immediate effect.[9]

7. Conclusion

1) The global financial crisis has clearly shown that as the domestic banking sector gets more integrated with the global banking sector, it faces the risk of getting exposed to the volatility and complexities of the global banking sector. In such a situation both the regulators and policy makers need to devise strategies on how to proactively deal with such threats.

2) There are several structural factors that have come to India's aid. Firstly, notwithstanding the severity and multiplicity of the adverse shocks India's financial markets have shown admirable resilience. This is in large part because India's banking system remains sound, healthy, well capitalised and prudently regulated.

Secondly, our comfortable reserve position provides confidence to overseas investors. Thirdly, since a large majority of Indians do not participate in equity and asset markets,

the negative impact of wealth loss affect that is plaguing the advanced economies should be quite muted. Consequently consumption demand should hold up well. Fourthly, because of India's mandated priority sector lending, institutional credit for agriculture will be unaffected by the credit squeeze. The farm loan waiver package implemented by the Govt should further insulate the agriculture sector from the crisis. Finally over the years India has built an extensive network of social safety-net programmes including the flagship rural employment guarantee programme which should protect the poor and the returning migrant workers from the extreme impact of global crisis.

3) In the backdrop of global financial crisis and its repercussions on the Indian economy, the year 2008-2009 has been a testing year for the Indian banking sector. The Indian banking sector however withstood this test and the resilient of this sector was more than evident. The Indian banks were largely immune from the crisis, as their exposure to toxic assets was minimal. More importantly the Reserve Banks initiative regarding adoption of counter-cyclical prudential regulations framework, both during credit boom period as well as during the slowdown prove to be successful.

The CRAR of SCBs as at the end of March 2009 improved to 13.2% from 13.0% in March 2008. Furthermore the gross NPA to gross advances ratio of SCBs as at the end of March 2009 remained at last year's level of 2.3%. The return on asset also remained at last year's level of 1.0%. The ROE increased to 13.3% in 2008-2009 from 12.5% during 2007-08, indicating increased efficiency with which capital is used by the banks. Thus though the expansion of balance sheet moderated the asset quality was maintained. Going forward the challenge for the banking sector would be to support credit growth, as the Indian economy moves closer to the higher growth trajectory, while ensuring the e efficiency and soundness of the sector.[10]

4) The analysis and findings of the study prove the hypothesis that the financial turmoil did not have a major impact Indian banking sector further the financial parameters have shown a slight improvement as well a decline for few select banks and the bankers responses supports the hypothesis of the study and these respondents continue to instil faith in Regulation and policy measures of Reserve Bank of India.

8. Suggestions:

1. The current global crisis is a reminder of the potential danger from market failure, given our knowledge of extensive cases of Government failure, the merits of bringing dynamism to the functioning of the economy through enhanced competition and an appropriate incentive structure remain more or less unquestioned.

When looking at financial sector reform let us look as much at the "opportunity" part of the current global crisis as to its "danger" part. A crisis often provides an excellent opportunity to do so. The current global crisis provides as opportunity to think hard of financial sector reform. All and any change is not necessarily good but neither is the status quo. We need to reform and reform in the right way.[11]

2. To avoid the financial catastrophe in the future policy makers should consider the following actions based on the lessons learned from this financial crisis.

a) The size of the banks should be restricted so that some of them do not become so big as to endanger the entire financial system. Their activities should be restricted too. They should not be allowed in the investment banking or securities business.

b) The Banks all over the world should become a utility to serve the national economy under the supervision of the local regulator. Their global expansion should be curbed.

c) The Central Banks must act to prevent bubbles. They should expand their focus to control asset price inflation in addition to consumer price inflation.

d) The Capital Adequacy requirements of the banks and other financial institutions should be further increased. Banks should adopt dynamic provisioning policy to provide higher credit provisions and reserves during strong economy which will act as a cushion during recession.

e) The Banks should not be allowed to accumulate any risks through off Balance sheet structures.[12]

3. The Scheduled Commercial Banks should adhere to strict credit norms and keep a track of all lending, the regulatory authority need to hold on to better credit control.

4. The Banks in India should continue to be progressive and realign the strategies to face market challenges and dynamics but should be prudent enough to restrict the exposure to toxic assets.

ANNEXURE

Questionnaire

1. What has been the impact of global financial crisis on your bank?

2. How does your bank adjust to the new market dynamics and greater challenges?

3. What measures are taken by your bank to survive in a fiercely competitive and highly complex global banking landscape?

4. If the banks have to work in a stringent environment will it impact their profitability? Comment

5. "Conservative banking and slow financial sector reforms saved Indian economy" your comments.

6. What measures were taken by your bank to cope up with the financial turmoil?

7. Which are the prominent sectors were your bank sees a credit growth in 2009?

8. What kind of financial regulations would you suggest to emerge out of this crisis?

9. which of the following select financial parameters were affected due to financial crisis during 2008-09(Net/NPAs, Return on Assets, Business Per Employee) any other do specify.

10. What measures were taken or will be taken by your bank to mitigate liquidity crisis during any financial turmoil?

Financial Parameters Studied By the Researcher-

CRAR-This ratio expresses the real capital as a percentage of total risk weighted assets. This ratio indicates the margin of protection available to both depositors and creditors against unanticipated losses that may be experienced by the bank

Net NPAs/Net Advances - Net NPAs are gross NPAs Net of provisions on NPAs and suspense account. In this ratio, Net NPAs are measured as a percentage of net advances.

Return on assets-This ratio relates operating profits to total resources under management. This ratio is considered by many to be the best single ratio for evaluating the performance of management.

Profit per employee-This measures the efficiency of the employee at the branch level. It is arrived at by dividing the net profit of the bank by total number of branches.

Credit-Deposit Ratio-The proportion of loan-assets created by banks from the deposits received.

Business per employee-To measure the efficiency of management the parameter like business per employee is used .This tool measures the efficiency of all the employees of a bank in generating business for the bank.

Non –interest Income /working funds- This measures the income from operations other than lending as a percentage of working funds.

Table6.1.1 (Financial parameters)

Select banks	CRAR		NET NPAs/ Net Adv		Return on assets		Credit-deposit ratio		Profit per employee	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
PNB	12.9	14	0.64	0.2	1.15	1.4	71.8	73.8	3.66	6
IDBI	11.9	11.6	1.3	0.9	0.67	0.6	112.6	92.0	8.86	8
AXIS BANK	13.7	13.7	0.42	0.4	1.24	1.4	68.1	69.5	8.39	10
ICICI BANK	14.9	15.5	1.55	2.1	1.12	1	92.3	100	10	11
DEUTSCHE BANK	13.5	15.3	0.22	0.9	1.56	1.7	65.1	62.2	27.5	27
HSBCLtd	10.5	15.3	0.58	1.4	1.82	1.5	70.3	55.2	16.6	16

Select banks	Business per employee (in lacs)		Net interest income/ Working funds	
	2008	2009	2008	2009
PNB	504.52	655	1.12	1.3
IDBI	1.809	2.036	1.466	1.0
AXIS BANK	1.117	1.060	2.07	2.3
ICICI BANK	1.008	1.154	2.37	2.0
DEUTSCHE BANK	1.616	1.434	5.52	4.2
HSBC Ltd	1.012	962	3.05	2.8

REFERENCES AND BIBLIOGRAPHY

1. Mohan, Rakesh.," Global financial crisis and Key risks: Impact on India and Asia", IMF-FSF High- level Meting on the recent financial turmoil and policy responses at Washington D.C, October 9,2008, RBI.

2. ibid

3. Mohanty, Deepak.," Global financial crisis and Monetary Policy Response in India", speech delivered by executive director of Reserve Bank of India on 12th November, 2009 at New Delhi.

4. ibid

5. Ghosh, P.N., "An inconvenient but wise governor of a central bank,", Economic and Political Weekly, Vol.XLIV,No.37,pp. 32-34,sept 12, 2009.

6. Mohanty, Deepak.," Global financial crisis and Monetary Policy Response in India", speech delivered by executive director of Reserve Bank of India on 12th November, 2009 at New Delhi.

7. Refer to reference no.1

8. ibid

9. Gopinath, Shyamala.," Financial crisis and Beyond", Inaugural address by smt.Shyamala Gopinath, Deputy Governor at the 3 rd India-China Conference, November 10th, 2009 at Mumbai.

10. www.rbi.org

11. Lahiri.K, A., "Financial Sector:National priorities Amidst an International crisis,", Economic and Political Weekly, Vol.XLIv,No.26&27,pp.121-129, June 27,2009.

12 .Duggal, Arun.,"Lessons from the financial crisis", Economic Times, 2009.

13. Krugman paul., "it will be a W-Shaped recovery", Economic Times,11thAugust ,2009.

14. Ahuluwalia.S.M., "Mitigating global financial crisis", Economic Times, 12 th june2009.

15. Wise policy- RBI lives up to its reputation, Economic times ,29th July 2009

16.Sachitanand ,N.N., "Will the recession really go away", Economic Times,24thAugust ,2009.

17.Y.V Reddy., "profitability has come at a huge public cost", Economic Times,15 th September,2009.

18.Kumar, Nagesh., "Mitigating global financial crisis", Economic Times, 2009.

19.Mohan, Ram.T.T., "In banking do what is doable", Economic Times, july,2009.

20."Rethinking Economic Theory and policy,", Economic and Political Weekly,Vol.XLIV,No.10,pp.5-6,March 7,2009.

21.Marjit Sugata, "Global recession and Indian economy- Myth and Reality,", Economic and Political Weekly,Vol.XLIV,No.9,pp.15-17th,feburary 28 th ,2009.

22.Modi .A., "A Practitioners Policy Perspectives,", Economic and Political Weekly,Vol.XLIV,No.30,pp.29-30,july 25,2009.

Website : www.rbi.org.in

WHITE REVOLUTION : NEED OF THE HOUR

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Introduction:

USAID defines food security as follows: When all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life.

Achieving food security requires that the aggregate availability of physical supplies of food is sufficient, that households have adequate access to those food supplies through their own production, through the market or through other sources and that the utilization of those food supplies is appropriate to meet the specific dietary needs of individuals.

At the global level, the South Asian region is home to more chronically food insecure people than any other region in the world and India ranks 94th in the Global Hunger Index of 119 countries. This is a situation where people regularly subsist on a very minimal diet that has poor nutrient and caloritic content as compared to medically prescribed norms. High economic growth rates have failed to improve food security in India leaving the country facing a crisis in its rural economy, warns the latest report released by the World Food Programme and the M S Swaminathan Research Foundation (MSSRF).

Removal of poverty and achieving food self sufficiency has been among the basic objectives of developmental planning in India right from 1951-52. Strategies to achieve these objectives, however have differed.

The first green revolution in India began in 1960s. It resulted in doubling of food grain production from 120 million tons in 1960 to 210 million tons today. It was the combined effort of high yield seeds, extensive use of fertilizers, land reforms and irrigation schemes that resulted in this remarkable achievement. Food self-sufficiency was achieved by 1984. As the year 1995 dawned, India was a net food exporter. This remarkable feat also included increased acreage of cultivable land from 116 million hectare in 1960 to 170 million hectare in 1990. In 1995, 850 million souls had about 190 million tones of food grain to share. Although the forgoing could not be classified as excess, yet it was enough to feed everybody about 2,200 calories a day. A few unlucky one did not get the basic minimum food intake, but it was a far cry from the days of famine and ration of 1950, 1956, 1965-67 and 1975-77.

In the last ten years, India has added 150 million more mouths to feed but has increased food production by only 15 million tons. Hence there is beginning to be an imbalance in supply and demand.

Milk: The Complete Food

In India the term 'Milk' when unqualified, refers to cow or buffalo milk or a combination of the two. Milk is an almost ideal food. Milk is rich in proteins and calcium which help to build the muscles. One 200ml glass of milk provide a power pack of nutrients a child needs daily. Milk is nature's ideal food for infants and growing children in our country, except in rare cases of lactose intolerance. The important place milk occupies in our diet has been recognised since vedic times and all modern research has only supported and reinforced this view.

A National Institute of Nutrition has recommended a minimum of 300gms daily intake of milk for children between 1-3 years of age and 250gms for those between 10-12 years, if they are vegetarian and 200gms for same age group of non-vegetarian children. Most adults consume milk as whitners for tea and coffee, some dahi or buttermilk.

The demand for milk and milk products is expected to grow at a very rapid rate due to population growth, urbanisation and increase in income levels and changes in food habits, and is likely to reach at 181 million tons in 2011-12 and precipitate consumption is expected to rise to about 152 Kg per year. The increase in demand for dairy products will increasingly pressure on dairy production systems. Traditional breeds and feeding practices are likely to give way to higher yielding breeds, associated intensification of production systems, increased disease risks, pollution and animal health issues and a greater reliance on concentrates.

Currently Indian dairy farming is dependent on crop residues, natural resources and open grazing as sources of feed. Expansion of these traditional sources of feeds and fodder to support a large increase in dairy production is unlikely, as available grazing areas and other common property resources are shrinking and already downgraded. Additional milk output will surely have to come from intensified systems based on stall-feeding and increasingly using concentrates.

Dr Verghese Kurien

Dr Verghese Kurien is called the 'father of the white revolution' in India. He is credited with architecting Operation Flood—the largest dairy development programme in the world. He set up the Anand Model of co-operative dairy development, engineered the white revolution in India and made India the largest milk producer in the world. The Amul pattern of co-operatives has been so successful that Dr Kurien set up NDDB to replicate it across India.

The first Amul co-operative was the result of a farmers' meeting in Samarkha (Kaira District, Gujarat) on 4th Jan. 1946, called by Morarji Desai under the advice of Sardar Vallabhbhai Patel, to fight rapacious milk contractors. It was Sardar's vision to organise

farmers, to have them gain control over production, procurement and marketing by entrusting the task of managing these to qualified professionals, thereby eliminating the middlemen, the bane of farmer's prosperity.

The most notable feature of a developing country is that it witnesses the birth of a number of organizations—organizations geared to meet the demands of, and opportunities presented by that development. Success of the development process, indeed, hinges on how well those new organizations grow and mature and serve the needs of the society at large.

NDDB

The National Dairy Development Board was created to promote, finance and support producer-owned and controlled organisations. NDDB's programmes and activities seek to strengthen farmer cooperatives and support national policies that are favourable to the growth of such institutions. Fundamental to NDDB's efforts are cooperative principles and cooperative strategies A commitment to help rural producers help themselves has guided the Dairy Board's work for more than 40 years. This commitment has been rewarded with achievements made by cooperative dairies in milk production, employment generation, per capita availability of milk, foreign exchange savings and increased farmer incomes. The National Dairy Development Board (NDDB) was founded in 1965 to replace exploitation with empowerment, tradition with modernity, stagnation with growth, transforming dairying into an instrument for the development of India's rural people.

The National Dairy Development Board — initially registered as a society under the Societies Act 1860 — was merged with the erstwhile Indian Dairy Corporation, a company formed and registered under the Companies Act 1956, by an Act of India's Parliament - the NDDB Act 1987 (37 of 1987), with effect from 12 October, 1987. The new body corporate was declared an institution of national importance by the Act.

Operation Flood leading to White Revolution

Operation Flood was a rural development programme started by India's National Dairy Development Board (NDDB) in 1970. One of the largest of its kind, the programme objective was to create a nationwide milk grid. It resulted in making India one of the largest producers of milk and milk products, and hence is also called the White Revolution of India. It also helped reduce malpractices by milk traders and merchants.

Varghese Kurien (Chairman of NDDB at that time), then 33, gave the professional management skills and necessary thrust to the co-operative, and is considered the architect of India's White Revolution. The bedrock of Operation Flood has been village milk producer's co-operatives, which procure milk and provide inputs and services, making modern management and technology available to members.

Operation Floods objectives included:

- Increase milk production (a flood of milk)
- Augment rural incomes
- Fair prices for consumers.

Operation Flood was implemented in three phases.

Phase I

Traditionally India has been the importer of dairy products. Phase I (1970-1980) was financed by the sale of skimmed milk powder and butter oil gifted by the European Union (then the European Economic Community) through the world Food Programme. NDDB planned the programme and negotiated the details of EEC assistance. During the first phase, Operation Flood linked 18 of India's premier milkshed with consumers in India's major metropolitan cities: Delhi, Mumbai, Kolkata and Chennai, thus establishing mother dairies in four metros.

Phase II

Operation Flood Phase II (1981-1985) increased the milksheds from 18 to 136. 290 urban markets expanded the outlet for milk. By the end of 1985, a self sustaining system of 43,000 village co-operatives with 4.25 million milk producers were covered. Domestic milk powder production increased from 22,000 Tons in the pre-project year to 140,000 tons by 1989, all of the increase coming from dairies set up under Operation Flood. In this way EEC gifts and World Bank loan helped promote self reliance. Direct marketing of milk by producers' co-operatives increased by several million litres per day. Operation Flood was jointly sponsored by the EEC, the World Bank and NDDB. The UNDP provided technical assistance by sending foreign experts, consultants and equipment to India. The World Bank and its affiliates supported agriculture extension, social (community-based) forestry, agricultural credit, dairy development, horticulture, seed development, rain-fed fish farms, storage, marketing and irrigation.

Phase III

Phase III (1985-1995) enabled dairy co-operatives to expand and strengthen the infrastructure required to procure and market increasing volumes of milk. Veterinary first-aid health care services, feed and artificial insemination services for co-operative members were extended, along with intensified member education. Operation Flood's Phase III consolidated India's dairy co-operative movement, adding 30,000 new dairy co-operatives to the 42,000 existing societies organised during Phase II. Milkshed peaked to 173 in 1988-89 with the number of women members and Women's Dairy Co-operative Societies increasing significantly.

The *Women's Dairy Co-operative Leadership Programme(WDCLP)* was launched in 1995 as a pilot programme with the objective of strengthening the dairy co-operative movement by significantly increasing women's participation as active members and as leaders in the governance of co-operative societies, unions and federations. NDDB provides assistance to milk producer's co-operative unions in conducting several activities to achieve WDCLP objectives. The WDCLP encourages co-operative milk producers' unions to identify women staff to participate in training designed to develop their latent potential. In the village, a key strategy is training and positioning a local woman as a resource person to encourage and support women's involvement in their dairy co-operatives.

Phase III gave increased emphasis to research and development in animal health and animal nutrition. Innovations like vaccine for Theileriosis, bypassing protein feed and urea-molasses mineral blocks, all contributed to the enhanced productivity of milch animals.

Far reaching consequences

The year 1995-96 marked the termination of operation flood III, funded by a world bank loan, EEC food aid and internal resources of NDDB. At the conclusion of Operation Flood III, 72,744 DCs in 170 milksheds of the country, having a total membership of 93.14 lakh had been organised. The targets set have either been effectively achieved or exceeded. However, procurement targets could not be reached as private agencies started procuring milk from the co-operative villages, following the new delicensing policy under the Government's programme of economic liberalisation.

The conditions for long-term growth in procurement have been created. An assured market and remunerative producer prices for raw milk, technical input services, balanced cattle feed and emergency veterinary health services have all contributed to sustained increases in milk production. Three state-of-the-art dairies designed to produce quality products for both domestic and export markets have been commissioned.

Operation Flood which started in 1970, concluded its Third phase in 1996. Looking at what Operation Flood has achieved in milk, not simply at the application of science and technology, though both have played a role, not looking simply at the creation of farmer-owned structures, though such structures have been necessary to success, but at all of this, combined with the orchestration of all policies and programmes that affect production. Further, they ensure to the extent possible, that these support mechanisms strengthen efforts, rather than stand as obstacles.

The story of Operation Flood can be seen through three angles, one is to consider what it did to the dairy industry. Another point of view is from the eyes of the small farmer. It has revolutionised their way of life. Operation Flood has also established a pattern of success for other countries to follow.

The benefits observed are:

- The enormous urban market stimulus has led to sustained production increases, raising per capita availability of milk to nearly nearly 200gms per day.
- The dependence on commercial imports of milk solids have done away with.
- Modernisation and expansion of the dairy industry and its infrastructure, activating a milk grid.
- Marketing expanded to supply hygienic and fair priced milk to some 300 million consumers in 550 cities and towns.
- 90 lakh small producers in 74,000 villages are earning jointly an incremental income of Rs 2500 Crs from milk.
- A nationwide network of multi-tier producers' co-operatives, democratic in structure and professionally managed, has come into existence. Millions of small producers participate in an economic enterprise and improve the quality of their life and environment.

Dairy equipment manufacture has expanded to meet most of the industry's needs.

Conclusion:

Food is a basic requirement for survival. The demand for food is growing all the time with growing population and improved standards of living. People should have enough quantity as well as quality to lead healthy life. The availability of enough food is what India is struggling to manage. With increased urbanisation, land for cultivation is shrinking. If domestic production is not enough then it is augmented by importing foodgrains. But it is a short-term measure. It can be a costly alternative. So ideally India would like to become self sufficient. The problems are caused by traditional farming methods and dependence on natural rainfall that is uncertain. To overcome these problems govt of India took steps to revolutionise the practices. The Green revolution and White Revolution are the culminations of efforts in right direction. Along with production proper distribution will reduce severity of the problem. Organisations like NDDB can play a crucial role in sustainable development. They are the role models to emulate.

References:

www.Amul.com

www.google.com

www.nddb.org

www.oneworld.net

www.wikipedia.com

Food Security Indicators and Framework for use in the Monitoring and Evaluation of Food Aid Programmes-Frank Riely, Nancy Mock, Bruce Cogill, Laura Bailey and Eric Kenefick: U.S. Agency for International Development for the Food and Nutrition Technical Assistance Project Publication Jan 1999 India-

Food Security and its future- By Hari Sud,South Asia Analysis group

INSURANCE BUSINESS IN BANGLADESH: THE CASE STUDY ON AMERICAN LIFE INSURANCE COMPANY (ALICO)

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INTRODUCTION :

Insurance industry is playing an important role in the national economy of Bangladesh.

Insurance is not a new idea or proposition to the people of Bangladesh. Since 1947 until 1971 insurance business gained momentum in this part of what was then known as East Pakistan. With the emergence of the People's Republic of Bangladesh, the government, in order to make available the fruit of liberation to the general mass, nationalized the insurance industry in 1972 by Presidential order No.95, more specifically known as the Bangladesh Insurance (Nationalization) Order, 1972.By virtue of this order, save and except postal life insurance and foreign life insurance companies, all companies and organizations transacting all types of insurance business in this country came under this nationalization. The general insurance business conducted by public and private insurance companies may broadly be classified into:a)Traditional Insurance Business;b)

Non-Traditional insurance Business

Traditional insurance business covers several lines of activities namely, marine insurance, fire insurance, etc. The non-traditional side covers some important aspects of national economy like life insurance, accidents, education protection, pension, or damage of properties.

A total of 54general insurance companies and 17 life insurance companies are now operating in the private sector insurance business in Bangladesh.

LITERATURE REVIEW:

From the view point of Mishra (2000), Insurance is define as a co-operative device to spread the loss caused by a particular risk over a number of persons who are exposed to it and who agree to ensure themselves against that risk. Life insurance contract may be defined as the contract, whereby the insurer in consideration of a premium undertakes to pay a certain sum of money either on the death of the insured or on the expiry of a fixed period.

Chaudhuri (2004) define Insurance Business as, it is nothing but a system of spreading the risk of one on to the shoulders of many. While it becomes somewhat impossible for a man to bear by himself 100% loss to his own property or interest arising out of an unforeseen contingency, insurance is a method or process, which distributes the burden of the loss on a number of persons within the group formed for this particular purpose.He also mentions that Life Insurance is freely assignable in the sense that it is an assignment of policy proceeds and not the assignment of the contract. The life insured here remains the same and it is not necessary that the assignee should have any insurable interest on the life assured.

Agrawal and Ali(2007) argue that Insurance is particularly useful with potentially high severity losses that can cause substantial cash flow volatility. Such losses are often managed more efficiently through insurance. In contrast, high frequency, low severity losses usually cause little cash flow volatility, as their financial effects are reasonably predictable. Consequently, they are seldom insured.

From Wikipedia, the free encyclopedia (2008), Life insurance or life assurance is a contract between the policy owner and the insurer, where the insurer agrees to pay a sum of money upon the occurrence of the insured individuals or individuals death or other event, such as terminal illness or critical illness. In tern, the policy owner (or policy payer) agrees to pay a stipulated amount called a premium at regular intervals or in lump sums. There may be designs in some countries where bills and death expenses plus catering for after funeral expenses should be included in Policy Premium.

OBJECTIVES OF THE STUDY:

The study has been conducted with following objectives:

1) To understand the working process and nature of life insurance business.
2) To understand the need to increase life insurance business in Bangladesh.
3) To understand the marketing activities of life insurance business.

METHODOLOGY OF THE STUDY:

This is a descriptive research by nature; Secondary data has been conducted for these articles. The major information collected from annual reports, journals, leaflets, books, Internet, etc. Most of the data has been collected from ALICO's published booklets.

ORGANIZATIONAL STRUCTURE OVER THE GLOBE:

American life insurance company (ALICO) incorporated in 1921 Delaware, in U.S.A is one of the largest international life insurance companies in the world. ALICO maintained its global leadership and provided individual and group insurance protection and a continuum of financial services for million of policyholder in over 55 countries on the five continents. It marketed at broad range in over 55 countries. ALICO branches and subsidiaries market a wide range of life and health insurance products. These products include traditional life insurance, variable universal life insurance, credit life insurance, supplemental medical and personal accident products, health and hospitalization insurance, group life, pensions and annuities, through a network of some 35000 agents. ALICO conducts business globally in Japan, Europe, the Middle East, South Asia, Latin America, and the Caribbean in more than 55 countries. In Middle East, Africa and South Asia divisions, ALICO has broad range of markets, other products and plans over 300 offices with networking system. There is another company like, American International Assurance (AIA). Where there is AIA in any country, there is no ALICO in that country. ALICO is no-1 in MEASA division. In Bahrain, Bangladesh, Egypt, Jordan, Kenya, Kuwait, Lebanon, Oman, Pakistan, Palestine, Qatar, Saudi Arabia, Turkey and UAE, they all have followed the principle operations of ALICO Middle East, Africa, and South Asia division. ALICO transacts business in over 136 countries and jurisdictions in every corner of the world. It is a member company of the American International Group (AIG), the leading US based international insurance organization. AIG is divided in to three major divisions: Life Insurance; General Insurance;Financial Services

Its assets exceed with more than US $ 294 billion of life insurance in force as of December 31, 2006.

RECENT PHENOMENON:

There are many life insurance companies in the world. There is also 18 companies works worldwide. Consist of 18 companies for collect premium income ALICO is the one.

ALICO Bangladesh is the oldest operation in the companies Middle East, Africa and South Asia (MEASA) division tracing its origin back to 1952 when it entered Pakistan with business activities extending also to East Pakistan. ALICO started their full service branch operation in Bangladesh in 1974 and has since been marketing individual and

group life insurance products with remarkable success. ALICO has been the market leader in Bangladesh since 1997 and currently has about US $ 725 million (equivalent) of life insurance in force. ALICO plays an important role in the economy of Bangladesh. Its assets in Bangladesh currently exceed Tk. 2100 Crore with more than 4,81000 life insurance policies in force as of December 2006.Besides with more than 7900 career agents and more than 240 dedicated employees, ALICO is a major employer in the country. ALICO Bangladesh invests its entire invest-able surplus locally, mostly in government securities. There is operational difference in all life insurance company.

The difference is-Foreign currency, Target market covered top to bottom, Target market covered middle and high

MAJOR FINDINGS OF ALICO:

In the schedule, they have 9010 rules. Their premium is highest and their bonus is highest. Their last premium is tk 80000 and highest premium is tk 7500000. ALICO have shareholder who are 10% members of highest income. ALICO maintain a life fund which find from income – expense=life fund. The bonus was given 90% to the present holder. If there is loss, no bonus will be paid. Bonus increases every year. Last 5 years many companies cannot give their bonus to their shareholder except ALICO.

a) Marketing Offers:

ALICO has some plans about life insurance and others product. They offered all the products for their clients. All the products are designed in actuarial department whose head office at Sharjha. They have mainly 4 ordinary plans. They are-

1) Three payment plan plus
2) Education protection plan plus
3) Life line pension plan
4) Circles of protection

They are discussed below.

1) **Three-payment plan plus:** ALICO's three-payment plan plus (3PPP) provides high insurance protection and attractive returns on the client's investment at an affordable cost.
2) **Education protection plan plus:** It is the foundation on which the client can build their child's future and career.
3) **Life line pension plan**: One year after the completion of the Premium Payment Term, client will start receiving income coupon every year and

it will continue during his/her life time up to attaining age 100 provided the policy is not surrendered.

4) Circles of protection:

In Circle-1, 24-Hour year round accident protector includes maximum Double indemnity is Taka 3000000 and benefit amount should not exceed 10 times the applicant's annual income.

In Circle-2, Weekly accident indemnity includes elimination period is first 7 days.

In Circle-3, Accident medical reimbursement includes deductible amount is Taka 500 per accident.

In Circle-4, Hospital Health care includes any benefit amount of the Optional in hospital surgical can be selected along with the in hospital income.

In Circle-5, Life income plan includes the monthly benefit should not exceed the applicants basic monthly income/earnings.

b) Types of product:

ALICO has 3 types of product. They are-

1) Ordinary Life Policies: This is simplest product. If somebody takes the ordinary life, one supplementary contract will be add with it. They have also WP (Waver of premium) who works, as nominee should be paid. This product divided in to four parts. They are-

a) Three payment plan plus

b) Education protection plan plus

c) Income growth plan

d) Life line plan

e) Endowment

2) Personal Accident Policies: It is in general insurance. It includes natural death and accidental death coverage. It has only one premium and should be paid total money only for one time. Its duration is 3 to 5 years. It has mainly four types of products. They are-

a) Stand Alone

b) PAL Rider

c) Embedding Plus

d) Double Billing

3) Group Policy or Term policy : It is prepared mainly for the organization employee. For a fixed period of time one group will be come for policy. It depends on group member age, weight, height, income, etc. It depends on group size. ALICO take every thing in average. They have flat coverage for tk 100000 to all person and multiply 24 of salary basis. It is one-year renewable term policy. This is the main difference of group policy.

ALICO has 2 special types of product. They are-

a. *My Child Special*: It includes children's education and health plan. It relaxes with single premium for 3 or 5 years. This policy is that the premium is paid only once and Clients child is covered for 3 or 5 years.

b. *Good Health Special*: It relives burden of large hospital bills. It offers single premium for 3 or 5 years and monthly cash income up to Tk.8000 for the clients and family.

a) Market expansion of Life Insurance Business:

The insurance market is characterized by low penetration of life insurance business. In Bangladesh only 4 persons out of 1000 have life insurance policy. American Life Insurance Policy, which is favorable for people. Mainly they have followed three types of policies that mentioned earlier are discussed in the following;

Ordinary Life Policies:

Three payment plan plus

Education protection plan plus

Income growth plan

Life line plan

Endowment

All these are discussed below.

In ordinary life policies, there is rate pamphlet for 10,15,20,25&30-year endowments at age 55.60,65-accident indemnity certificate, accidental death benefit waiver of premium. All these are include in regular endowment contracts.

There is also income tax advantage that is," under the provision of the Bangladesh income tax act a person who has insured his own life or that of his wife or children is in respect of the premium paid by him".

There is also education protection plan plus and three payment plan plus, which is known as ordinary life policies. Education protection plan plus is the foundation on which the policyholder can build their child's career and future. Policyholder can select the period of the plan to suit the age of the child at which they want the policy proceeds to be paid. On survival of child at maturity, ALICO will give them face amount of the policy and bonuses are paid.

The money can be used to pay for higher education expenses. On survival of child at maturity, they will be use the money to other purpose such as starting their career or marriage.

In this education protection plan plus, there is some advantages that, in case of policy maker/holders death,

All future premiums under the policy will be waived and the policy continues in full force.

Income for education equal to 1% of the face amount is paid every month to the child till the maturity of the policy. At maturity, child will be receives the benefits started above.

If the child is death before maturity, total face amount and accrued bonuses payable subject to Juvenile Endorsement.

For insurance business ALICO make some attractive features:

èCash values, paid up values and extended term insurance values are guaranteed.

èPremium will never increase.

èIt is secured and flexible. Policyholder will transfer their policy to any one of the over 60 countries where ALICO is operating subject to any legal restrictions.

In ordinary life policy, ALICO's three-payment plan plus provides very high insurance protections and attractive returns on policyholder's investment at a very low cost. The unique feature of the plan is that ALICO pays 50% of the face amount much before the maturity of the policy. It combines both death and living benefits in the most beneficial and convenient manner to the policyholder's and the beneficiaries.

Three payments are-

è25% of the face amount is paid at the end of 1/3 rd of the term of the policy.

èAnother 25% is paid at the end of 2/3 rd of the term of the policy.

èAt maturity the remaining 50% of the face amount is paid with bonus.

In this payment, ALICO will be given bonuses, optional benefit and protection.

They have some attractive features.

èPremium will never increase.

èCash vales, paid-up values, extended term insurance values are guaranteed.

èLike all other policies, the premiums are income tax deductible.

In ordinary policies, Lifeline pension plan is another one. First determine the age that policyholder want lifeline to commence providing with the annual income coupon to meet their financial needs. They may select the premium payment term of 10,11,12,13,14,15,16,17,18,19,20 years and the required premium affordable by the holder.

One year after the completion of the premium payment term, policyholder will start receiving income coupon every year and it will continue during lifetime up to attaining age 100 provided the policy is not surrendered. No premium payment will be required to keep the policy in force after completion of the premium payment term. The income could be used to meet the policyholders regular expenses, to supplementary other income or for anything as they desire.

In family income protector, it guarantees for the lifetime of policyholders spouse or children shall suffer an accidental loss of life or permanent total disability.

Policy factor:

While calculating premium, a policy factor by made of payment must be added after multiplying the premium per thousand by the sum assured. Policy factor is independent of plan, age, amount of insurance and applicable for all policies participating & non-participating. The policy factor now is charged at the given rates.

Mode of payment	Policy Factor
Annual	tk70.00
Semiannual	tk32.50
Quarterly	tk23.00

(Source: ALICO Leaflets)

Example: 20 years Endowment (Participating) for tk 60000 issues age 35.

	Annual	Semiannual	Quarterly
Basic premium*60	tk3357.60	tk1745.95	tk906.55
Policy factor	tk70	38.5	23.33
	tk3427.6	1784.45	929.88

(Source: ALICO Leaflets)

Description of benefit:

Total minimum cash income 20 years	Monthly income
tk1440000	tk60000
tk7200000 tk30000	
tk3600000 tk15000	
tk1800000 tk7500	

(Source: ALICO Leaflets)

Policyholder will be covered 24 hours, any where in the world.

In case of simultaneous less of life of insured and spouse as a result of the same accident, the monthly income will be doubled.

If the accident result is dismemberment, loss of sight, hearing or speech or permanent total disability to either the insured or spouse, then the disabled one will receive the monthly income for a life time.

At the complementation of the term of this contract, if there is no claim, then 20% of the premium paid for this policy will be refunded to the insured as no claim bonus.

In case of natural death of the insured the designated beneficiary will receive tk10000. In case of natural death of the spouse the beneficiary will receive 50% of the natural death benefit of the insured.

In this plan, if the beneficiary is a child below 18 years of age at the time of accident, the benefits will be restricted to 20 years. Payable to the surviving parent or legal guardian until child attains age 18. In this case, the monthly income is guaranteed to pay for a minimum of 20 years, even if the beneficiary dies.

In the lifetime income plan, here is a protection plan that guarantees a cheque-a-month for the lifetime of policyholders spouse or children or himself if they will suffer an accidental loss of life or permanent disability. This plan from ALICO guarantees lifetime financial independence. A child beneficiary under 18 receives benefits for 2 years. Every monthly cheque can be as much as tk20000 each.

Personal Accident policies:

In this policy there are mainly 4 types of plans made by ALICO Bangladesh. They are-

Stand Alone

PAL Rider

Embedding Plus

Double Billing

These four are discussed below:

Stand Alone:

Circle of protection:

Circle-1: 24 Hour year round accident protector:

1) Maximum double indemnity is Taka-3000000.
2) Benefit amount should not exceed 10 times the applicant's annual income.

Circle-2: Weekly accident indemnity:

1) Elimination period is first 7 days.

Circle-3: Accident medical reimbursement:

1) Deductible amount is taka 500 per accident.

Circle-4: Hospital health care:

1) Any benefit amount of the optional in hospital surgical can be selected along with the in hospital income.

Circle-5: Lifetime income plan:

1) The monthly benefit should not exceed the applicant's basic monthly income/ earnings.
2) To calculate the principal sum of circle-5, multiply the monthly income in to 200. This is needed to determine the total principal sum combining circles 1 and 5 for the required financial statement for amounts of tk 3000000 and above.
3) This benefit is not available to class d.

Good Health Special:

This policy relieves burden of large hospital bills. It is a single premium for 3 or 5 years. It's monthly cash income up to tk 8000 for policyholders and the family.

My child special:

In this policy, children's education and health plan are included. It relaxes with single premium for 3 or 5 years.

Executive five plus:

In executive five, ALICO prepared a plan in which 5 years world wide protection in case of accidental loss or major disability, 24 hour protection, on or off the job, any where in the world.

a) Natural death tk-10000

b) Accidental death tk-100000

c) Permanent total disability tk-100000

d) Permanent Partial disability tk-100000

e) Accidental daily medical reimbursement for hospitalization tk-400

PAL Rider:

#Hospital Care:

There are hospital care and accidental indemnity. In hospital care, accident and sickness hospital income that is supplementary contract pays to policyholders, the cash amount which they selected when they or their insured family members become hospitalized, regardless of expenses, even in a free hospital. The cash income will be started from the very first day of hospitalization and continues for up to 52 weeks for each confinement. This can pay the policyholder up to tk 547500 under plan 1. This cash income is paid directly to a regardless of expenses to policyholder.

THE HOSPITAL CARE

In hospital weekly cash income for policyholder and their family

Benefits	Age	Plan1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 6
Accident & Sickness Weekly benefit		10500	7000	5250	3500	2100	1750
Double benefit for 9 dread diseases		21000	14000	10500	7000	4200	3500
Annual premium for adults	40	5445	3629	2723	1815	1089	908
	40-49	6804	4536	3402	2268	1361	1134
	50-59	7710	5141	3855	2570	1542	1285
Renewals only	60-65	8769	5846	4385	2923	1754	1462
Dependent children (age1-19 or 23 if full time student)		4083	2722	2042	1360	817	680

(Source: ALICO Leaflets)

Special Features about Hospital Care:

The choice of six coverage packages to supplement policyholder's life insurance will cover.

The policyholder will select the plan of their choice for them and their family.

The daily cash income continues for up to 52 weeks from the very first day of hospitalization.

The cash income is payable regardless of expenses, even if the policyholder is confined in a free hospital.

The cash income is paid directly to the policyholder, to use any way.

No deductible amount or waiting period.

Benefits are payable in addition to any other insurance plan that policyholder may have.

For accidental indemnity, there are some advantages are included in contract paper. In this supplementary contract, they have followed some rules and regulation. This rules maintain a table, which is also known as advantages of accidental indemnity.

TABLE OF INDEMNITY

(If compensation is created within 90 days)

a) When death occurs total extra money of contract.
b) If arms, knees or above part of this portion become affected, two or more parts of body if loss, then total extra money of contract.
c) The power of eye site totally becomes lost then total extra money of contract.
d) The power of one eye become blind, then total extra money of the contract.
e) Metacarpofelanzian joint or above portion of one arm become lost, ¼th total extra money of the contract.
f) If arms, legs become lost, 1/3rd of total extra money of the contract.
g) If the policyholder cannot primarily joint for accident from the date of accident, then for the period of time weekly compensation (tk 7.5 for per 1000 tk of extra total money of contract).

(Source: ALICO Leaflets)

There is another compensation like,

* Compensation for flight passenger.

* Double compensation for the passenger of road transport.

* Premium not to be paid if the policyholder become under compensation.

* Sensitive disease of compensation.

All these are main compensation or indemnity of life insurance policy of the American Life Insurance Company.

Policyholder will be a gainer of ALICO policy by paying a nominal premium (one time) ranging from tk1510 to tk2550 depending on holder's age.

Critical Care:

In critical care, ALICO prepared a plan that is the convenient and affordable critical illness protection plan that is specifically designed to protect the policyholder and have to design a special scheme to provide necessary financial protection.

In this plan, ALICO offered to anyone in good health and who is between 18-59 years of age. When time is critical to anyone' future and require immediate medical attention, critical care will provide some benefits, that is,

1) Lump sum payment: Up to tk500000 payable upon diagnosis and receipt of proof for one critical illness only.

2) Critical care offers a maximum Benefit of tk.500000 and a minimum benefit of tk 150000.

Embedding Plus:

a) Accidental death and dismemberment

b) Permanent total disability

c) Accidental Reimbursement offers-100% of ordinary life face amount.

d) Medical Reimbursement offers- 25% of ordinary life face amount.

Double Billing:

Family Guard: This product is a special offer for limited time. This ensures income of tk 1008000 for the policyholder's family.

3) Group Policy or Term policy : It is prepared mainly for the organization employee. For a fixed period of time one group will be come for policy. It depends on group member age, weight, height, income, etc. It depends on group size. ALICO take every thing in average. They have flat coverage for tk 100000 to all person and multiply 24 of salary basis. It is one-year renewable term policy. This is the main difference of group policy. This policy mainly based on negotiation with the employee's of any organization.

CONCLUDING REMARKS AND RECOMMENDATIONS:

ALICO has some advantage like similar products and quick customer service. This is main thing for insurance business of ALICO but ALICO have some disadvantage also. This product range is very small. It has only 3 types of product that mentioned previously. It is disadvantage but it is also makes ALICO the market leader.

ALICO allowing usage of the progressively increasing fund for public interest. ALICO maintain infrastructure development, industrialization and employment generation

and it have over 2700 well-trained career agents and 223 dedicated employees. So, ALICO is a major employer in the insurance business in Bangladesh.

In Bangladesh there are various life insurance business are working effectively. ALICO always try to satisfy their customers, identify their needs and wants. They seek different types of product that can be valuable for new customers and existing customers. Their working process operated very systematically and customer satisfaction is their nature of business. ALICO do business with people. Their marketing activities always increase interest to the customer.

Therefore, they need to take some initiative steps that may helpful for their business.

* New product that is useful and necessary for human being need to be developed.

* ALICO need to make some policy that is affordable to all kinds of people.

* They need to develop information center that people get right information at the right time.

* Advertising needs to be developed for existing product and new product.

* Bonus and incentives should be increased for the existing product.

REFERENCES:

- Annual reports of ALICO
- Leaflets from ALICO
- Web site: Wikipedia
- Agrawal,Simmi and Ali, Muhammad Mahboob , "An analysis of risk management with reference to insurance"(Co-author), Arthanity Journal, The Journal of the Chittagong University Economic Association, University of Chittagong, Vol.XII, No.1, July 2007.
- Chaudhuri, Azizul Huq ELEMENTS OF INSURANCE, Reprint-2004, Pages-184, Published by-Bangladesh Insurance Academy, Motijheel Commercial Area, Dhaka.
- Mishra, M.N. INSURANCE (Principles and Practices), Reprint-2000, Pages-618, Published by-S.Chand & Company Ltd. RamNagar, New Delhi-110055

PROSPECTS OF AGRIBUSINESS IN BANGLADESH : AN OVERVIEW

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Introduction:

Under the global village, food is becoming scarce and prospects of agribusiness are increasing gradually. Agribusiness can be defined as the business activities related to the agricultural product which will add value, create synergy in the production process, import-export of agricultural products and redistribution of the product starting from the wholesaler to retailers and ultimately consumers can be able to get the products. Agribusiness includes seed production and product processing, drying paddy, dairy, fish farming, poultry, vegetables, floriculture, fruits jute, livestock, tea, gingers, potatoes, oilseeds, pulses, sugarcane etc. is to legally transferred to the customers. Agribusiness may have brighter future in Bangladesh if the country can avail the opportunity.

Rahman (2004) argued that poultry inputs like chick, feed and medicine markets are oligopolistic in nature, in which prices are determined individually considering probable reaction of others. Agribusiness requires entrepreneurship effort through combining different attributes of productivity, experimentation, innovation, risk-taking, efficiency, effectiveness and synergy. Diversification of the agribusiness process into agricultural product and market segmentation is required. Due to Global warming situation, importance of agribusiness has been raised after the end of the first decade of twenty-first century.

Green revolution was initiated during the sixties to maximize the benefit of agricultural output. After independence BADC worked hard to develop agricultural sector. But it became crippled to mitigate personal gain of the policy makers during eighties in the name of privatization. Now we are emphasis on private and public partnership. Optimum a scale of plants has already been produced. Decreasing returns to scale is prevailing in the agriculture sector of Bangladesh. Land, canal and labor is essential for production of agricultural product. Without raising the production, supply cannot be raised and demand cannot be fulfilled. As such in the latter part of the first decade of the twenty-first century agriculture related business will not rise at a faster rate.

According to a World Bank report improving physical and social infrastructure - roads, electricity, communication, water and sanitation, health and education – in rural areas is fundamental both for promoting employment opportunities and welfare. While Bangladesh has done well on developing rural roads, it has a long way to go to

meet other infrastructure needs, such as electricity, which is only available to 15 percent of villages.

Because of the inefficiency of the government in public service delivery, the non-governmental sector has de facto become one of the main actors in development efforts. While decentralization efforts remain incipient, the efficiency and sustainability of public service delivery remains in question(Source: http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/EXTSAREGTOPAGRI/0,,contentMDK:20273763~menuPK:548213~pagePK:34004173~piPK:34003707~theSitePK:452766,00.html).Virtually agribusiness is very much prospective for Bangladesh.

The article has been undertaken to observe importance of agribusiness in a country like Bangladesh.

Literature Review:

Khan and Hossain(1989) argued that due to high pressure of population and limited opportunities for non-agricultural occupations, land is cultivated in very small business.

According to Bangladesh Bureau of Statistics, during the year 2004-05, percentage of net cultivable land in terms of total land was 56.87% while cropping intensity was 176.91%. Actually cultivable land is decreasing at an alarming rate. In this aspects Ahmed's proposal is more practical oriented.

Austrade (2007) describes that agro-commodity products account for about 10 percent (A$16 billion) of Bangladesh's total annual imports. The figure may rise to 15 per cent based on the country's production from year to year. Demand for some agro-based products depends on various climatic factors. The report also argued that bumper crops might see food imports drop, though the import of cotton, pulse crops and oilseeds are showing ongoing upward trends.

Rahman et. al.(2004) argued that the factors which help increase production of Boro rice are extension service, human labor, seed, fertilizer , age and experience .Area and bullock power have positive effect on the Aus output. Similarly, extension service, area and bullock power have positive effect on the Aman output.

Ahmed (2008) proposed that for saving the cultivable land the country would have to be habituated to community living. He also advised that at this moment, if it is not possible to construct multi-storied building in rural areas we can opt for making two storey mud-built houses by applying indigenous technologies, which in turn will save a good extent of lands.

According to Quasem (2008) crop productivity of land is low, as new technologies are not widely spread specially in non-rice crops. To thrive in the competitive business environment, the plan should be properly done so that competitive advantage and economies of scale in producing those agricultural products should get priority. Speculative motive in the agriculture sector still works. As such farmers sometimes deprived from getting their due share for their valuable contribution towards production.

Ali and Nupur (2009) suggested that create awareness among the producers and the consumers about organic farming by improving the level and quality of information through materials ranging from simple field training, media programs, leaflets ,cell phone up to web sites and comprehensive campaigns.

Present Situation:

Bangladesh possesses deficit balance in global business in the context of the global arena. In the twenty-first century, there is a wide scope to mitigate deficit in the global business. Although Bangladesh is still an undeveloped country, the primitive characteristics of LDCs do not exist here. But the country is still lagging behind to take any sort of appropriate measures for the agriculture sector, which should be complementary with WTO.

Deb and Zaman (2007) argued that during the last 35 years agricultural production in Bangladesh has substantially increased. Production of crop, livestock and fisheries has increased significantly. Rice production has increased from 9.90 million metric tonnes in 1972/73 to 26.53 million metric tonnes in 2005/06. Crop GDP has increased from Tk 19.76 billion (US$ 2714.69 million) in 1972/73 to Tk 622.324 billion (US$ 9277.34 million) in 2005/06. Production of potato, maize, fruits, vegetables and other crops has also increased. Production of wheat and sugarcane has decreased. Area under jute has declined though production increased slightly due to increased yield. Poultry production has increased from 76.88 million birds in 1972/73 to 232.99 million birds in 2005/06. Meat production is more than five times than that in 1972/73. On the other hand, milk production is about five times while fish production is about 2.9 times of the production in 1972/73. Shrimp production has increased to 110 million tonnes in 2004/05. Thus, agricultural production system in Bangladesh has been transformed from a subsistence oriented system to a commercially driven production system which is very much responsive to prices, policies and trade liberalisation.

According to Bangladesh Agribusiness Report Q3 2009 the Bangladesh Agribusiness service provides proprietary medium term price forecasts for key commodities, including corn, wheat, rice, sugar, cocoa, coffee, soy and milk; in addition to newly-researched competitive intelligence on leading agribusiness producers, traders and suppliers; in-depth analysis of latest industry developments; and essential industry context on Bangladesh's agribusiness service (source: http:// www.researchandmarkets.com/reports/1080797)

Zhu and Sur (2008) argued that the demand for food in Bangladesh and around the world is changing rapidly. Driven by economic growth, rising incomes, and urbanisation, demand is shifting away from traditional staples toward high-value food commodities. High value agricultural commodities include fruits, vegetables, spices, fish, and livestock products, many of them processed before reaching the market. In Bangladesh, additional demand for these commodities is projected to be worth about $8 billion by 2020 (in 2005 prices).

At the second Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) summit in New Delhi, which held during mid November 2008, the chief advisor of Bangladesh proposed for a food bank. In the context of the recent global food crisis that has created a sense of food insecurity among the peoples in the developing as well as low-income countries, regional cooperation for food security has emerged out as an important issue. For this matter, the proposals for setting up of a BIMSTEC poverty alleviation centre in Bangladesh and a food security reserve among BIMSTEC members should merit attention. The idea behind such proposals is good. But unless the same are endorsed by all the member-countries of this regional cooperation body with a strong commitment to operationally the same at the earliest, no meaningful results in the desired direction are likely to come.

Reduction of the subsidies on fertilizer and also consent to private trade in fertilizer, small irrigation equipment and seed sectors etc were done during different phases of the economy. Structural adjustments started with the liberalization processes and openness of the economy through diverse agricultural input delivery systems from public sector to the private sector. Social enterprise business system tried to develop. But it creates disparity between have and have-nots. As private disbursement system of agricultural inputs works as a monopolistic nature so it creates small and marginal farmers on an awkward situation.

Bangladesh is now exporting vegetables and other high value crops in the European, Middle East, and Asian countries. This process opens new avenues to private sector investment in the areas of agricultural production of high value of crops, production of seeds. However, according to the Export Promotion Bureau, during the year 2005-06,the highest earnings of the export of agricultural products come from the Jute sector, which was BDT 9965.37 Million while second earnings comes form vegetable BDT 2212.42 Million which was and third one was tea sector which was BDT 799.28 Million during the same time period.

Labor Forces Survey has not been conducted after 1999-2000.From the BBS: Labor Force Survey Bangladesh 1999-2000,August 2002 it revealed that 62.91% of the total labor force are working in the agricultural sector. However, labor productivity in the agricultural sector is also low. High tech agriculture based on labor-intensive technique is required. Small and medium farmers should get inputs at an affordable price. For developing the agriculture sector, agricultural staff and media should play vital role. They must motivate farmers how to produce in the accurate moment and to

arrange direct selling process starting from the production to the marketing strategies, they may work as a supplementary factor.

Agricultural sector takes over Bangladesh economy in terms of contribution to national income as well as employment. According to Bangladesh Economic Review-2007, in 2006-07, the overall contribution of the broad agriculture sector at constant prices is projected 21.11 percent of GDP. With the broad agriculture sector, the contribution of agriculture and forestry and fisheries are estimated at 16.38 percent and 4.73 percent respectively in 2006-07.

Agricultural development policy and its implementation is yet to be initiated. Agriculture sector still suffers from uncertainty depending on nature. Although agriculture sector is dominating other sectors yet methods of production are not properly mechanized. Construction of large scale of irrigation and drainage facilities are yet to develop for proper production of the agricultural output. Chronic electricity failure disrupts irrigation facilities. **Paddy** agriculture of Bangladesh relies heavily on irrigation. Scarcity of water for irrigation during **dry** season in the recent years creates problem. Water management system should be improved.

In Bangladesh through making the agriculture sector more competitive the economic development can be attained. Agricultural production chain in Bangladesh is not properly working. Moreover, global warming is creating problem for the economy of Bangladesh. Maintenance of biodiversity has been a challenging problem for Bangladesh. Environmental issues should be properly handled so that green house effect cannot create problem.

As scheduled bank's credit program are of high cost and anti rural biased, unwillingness of the bank staffs to work in the rural areas, a new system may be taken to meet the credit needs if small and marginal farmers, distressed woman, landless laborers etc. For proper agricultural development branches of rural banks may create special cells for dissemination of knowledge and technology. This will help in developing small-scale projects with greater employment potentialities. Priority for the development of agro-based small and medium industries should be taken. The rural branches and their subsidiary institutions may be established in each village of the country through creation of a syndicate of specialized banks, participatory commercial banks, cooperatives and various NGOs. Before the crop is ready for cutting the farmer may not have any money to survive.Farmers are also heavily depended on informal sector. Moreover, huge amount of disguised unemployment are prevailing in the agricultural sector Due to natural disaster ,each year farmers faces problem as crop may be destroyed and they do not have any crop insurance.

Discussions and Conclusions:

Transformation in the agriculture sector from the subsistence level to the commercial sector is required so that surplus can be generated to the industrial sector .On the other hand industrial sector can properly provide supports to the agricultural sector. The agriculture sector needs mechanization following the Japanese mode of agricultural production system. Moreover, disguised unemployed in the agriculture sector will get employment in the industrial sector. Non-farm should get priorities.

Women who are involved in the production of the agriculture directly or indirectly should be counted in the process of GDP accounting system. Drainage of crop especially starting from production to the marketing stages should be avoided. Agriculture should not be ignored as it will be the international business and within ten years it will be able to prove that trends of terms of trade of agricultural product will be higher. Deb and Zaman(2007) as comment ,agricultural production has raised but we should be more cautious so that dependency syndrome on foreign companies for seeds ,pesticides ,fertilizers etc. can be reduced.

More emphasis should be given on continuous research and development so that agribusiness can be properly handled for which supply chain management i.e. starting from producers of agricultural products to get incentive to produce not only for domestic market but for the global market but also other facilties Transportation facilities within the domestic and international arena should be arranged. Strategic alliances should be created with foreign agribusiness companies for collaborative business environment. Agribusiness process should be interlinked with the environment, considering the actions of competitors, long-term sustainability in the business process.

Improved public- private partnership in developing various agricultural inputs i.e. seeds, fertilizers, agro-machineries and also improving environment of agribusiness are required. The Poverty Reduction Strategy Paper-II (PRSP-II) also emphasizes agriculture and rural development as one of the key sectors for poverty reduction and pro-poor economic growth. However, PRSP-I did not bring much fruitful result for poverty reduction especially in the rural areas and reducing disguised employees' dependence on the agricultural sector. As such it won't be wise to think that under PRSP-II agriculture sector should be much benefited.

Agrarian reform is required for increasing productivity of the agricultural output, strengthening agribusiness and to mitigate huge deficit in the Global business of Bangladesh. Environmental management in the agriculture sector must cope up with global warming trend. Creation of employment opportunities for surplus labors in the agriculture sector to non farm activities is required and which can be feasible by the Govt. and private initiatives. Agricultural scientist should be posted in each village level and they should get well training so that they can guide the farmers to produce what product at what time. Information symmetry should be arranged so that agricultural producers get the right prices fro there product. Transportation system

from the rural areas to urban areas and to sell products at International market well designed plan should be developed by the Ministry of Agriculture and that plan must be properly implemented. Different stages for transportation of products may be minimized and rent seeking should be eradicated. Distinct competencies should be created and operations management in the agriculture sector should be improved.

BADC should be activated and public-private partnership of the agribusiness programs should be taken. As per World Bank's report inefficiency of the government in public service delivery, the non-governmental sector has de facto become one of the main actors in development efforts which should be superseded by BADC through transforming and restructuring the organization by Business Process reengineering. Proper agribusiness model must be developed with the combination of competitive attitude, value chain, productivity, transportation and marketing strategy. However, agribusiness expansion should be carefully monitored so that business motive doesn't conflict with the social obligations and conglomeration of the wealth at the hands of the few. Ali and Nupur's(2009) comment should be considered by the policy makers for quality assurance of agro-products in Bangladesh.

Business in the agriculture sector depends on diversity of demand and supply of agriculture oriented products. As scarcity of food rises, so agriculture oriented products become more demandable. In the business process no longer agriculture products can be viewed as a primary product. Rather in the global market, agriculture products especially food is turning to become core competitive products. Bangladesh bank should come forward with a special scheme to give poor and distress farmers at the time of extreme poverty situation when crop is not ready .Farmers may repay the amount after the crop is sold. Crop insurance may be arranged by the Govt. for small and marginal farmers.

Benchmarking in the agribusiness should be set up to maintain international standard. Both efficiency and effectiveness in the agribusiness is also low. The country lacks of strategic planning for disbursement of agricultural credit and marketing of agricultural products. Commercialization in the agricultural sector is required. Pest Management is also weak. As such pest management should be improved. Water management system as well as mechanization process of the agricultural production process may be improved and Japanese mechanization style may be used. Special attention should be given so that global warming as a whole can not create negative impact on the domestic economy of the Bangladesh.

The country should utilize its opportunities to run the agribusiness in favor of the country. Agribusiness should add value in the agricultural sector and in turn helps to contribute in the growth rate of gross domestic product. Both Govt. and Private sector should work side by side with long term vision, mission, goals, objectives and tactics. As such in the agribusiness firms, strategic leaders are required who will work as a mentor and his/her leadership strategy will be formulated and these strategies will be implemented effectively and efficiently.

References:

- Ahmed, Moeen U (2008): Food security of Bangladesh, *The Daily Star*, September 13
- Ali,Muhammad Mahboob and Nupur,Jannatul Mawa(2009):"Consumer's perceptions and Quality assurance of agro-products of Bangladesh :Focus on Organic foods specially Vegetables, fruits and crops,Journal of Business and Technology (Dhaka),Vol.4, Issue:2, July-December.
- Austrade(2007): A*gribusiness to Bangladesh: Trends and opportunities -The market*, http://www.austrade.gov.au/Agribusiness-to-Bangladesh/default.aspx
- Battles, Ralph W., Robert C., Jr. and Thompson, Robert C., Jr. (2000): Fundamentals of Agribusiness Finance , Blackwell Publishing
- BBS(2008): Bangladesh Economic Review-2007
- Deb, Uttam and Zaman , Zaki-Uz(2007). Agribusiness in Bangladesh:Current Situation and Challenges, Trading Up, Samar Verma(Editor), April-June
- http://www.researchandmarkets.com/reports/1080797
- http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/EXTSAREGTOPAGRI/0, contentMDK:20273763~menuPK:548213~pagePK:34004173~piPK:34003707~theSitePK:452766,00.html
- Khan ,Azizur Rahman and Hossain, Mahabub(1989):*The Strategy of Development in Bangladesh,* Macmillan.
- Quasem,Dr.Md.Abul(2008):*Development Strategies and Challenges ahead of Bangladesh*,Palok Publishers,Dhaka.
- Rahman,K.Md.M. et.al.:"Far, specific and farm size –specific efficiency measurements and related policies for Bangladesh Rice Crop", *Bangladesh Journal of Political Economy*,Vol.21,N0.2.
- Sabur,S.A. and Rahman,M.H.(2004):"Agribusiness of Poultry and Poultry Products in Bangladesh" ,*Bangladesh Journal of Political Economy*,Vol.20,No.1,June
- Zhu , Xian and Sur, Mona(2008):" High-value agriculture and agri-business in Bangladesh", *The Daily Star*,18 February

"SITUATIONAL LEADERSHIP" A VITAL TOOL FOR CHANGE MANAGEMENT IN INDIAN CORPORATIONS

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ABSTRACT

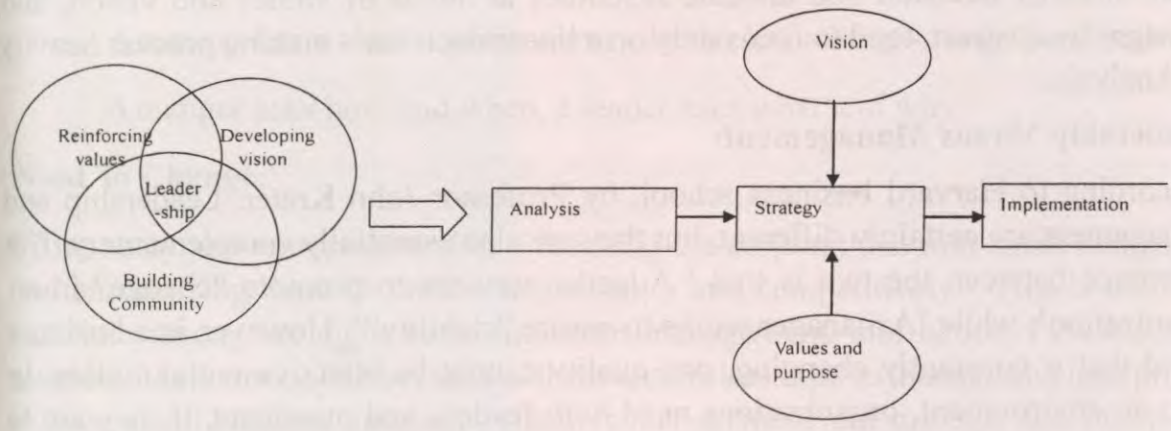
Now a days due to globalization, privatization and liberalization, several MNC's INCs & NGO's expand their business with having same kind of products /services or different kind of products/services and also one big advantage for India for globalization several MNC's INCs & NGO's set up their business in India and also some India corporations becomes "Indian multinational corporations" without any governmental restriction and any political involvement and compete with each other in corporate world using several tools, techniques ,theories and principles of modern management /scientific management ,HRM & OB, marketing, advertising and selling ,maintaining public relations and awareness of product /services by making strategically plans in all above mentioned disciplines and decision making, for all these efforts in all business organizations ,corporations ,enterprises and companies not only need most effective management but also most strategic ,dynamic and situational leadership with strong balancing act that is proper "trade-off " of management and leadership is needed because today's dynamic business environment needs both equally to achieve excellent business stability & profitability and with this intention for management I prefer to use "strategic management "and for leadership I recognize to "situational leadership" to achieve success in business by means of effective managing and leading in corporate world ,with maintaining customer-company, customer-employee ,employee – employee , employee-company and company-societies ,human relations with solving of all theirs conflicts/complex problems by proper managing as well as leading as per the "changes" comes from the environmental forces and global competition and present investigation discuss two variables which co-relate to each other is "situation" and "change"

India may now have the opportunity for a period of accelerated development on the simulation of rapid 'technological change' and 'growth in Agricultural Sector' due to advancement in technology. Such a pattern of expansion has few historical precedents. The details of the pace and pattern of economics development of each nation represent a unique adaptation to physical, technological, political, economical, and social environment. For the past two decades[5], India has been the object and source of alternating attitudes towards economical and technological development. Most notably, the second Five year plan (1955 – 60), developed by P. C. Mahalanobis, helped to turn attention away from growth strategies that emphasis labor mobilization and small scale production towards the plan that stressed the acquisition of capital goods, technology and modern industrial power[1]. This is the first good step towards the technological development, which changes the shape, size, and work of companies and responsible for economical growth of the nation. After that since 1990 and 1991 due to the liberalization, globalization and privatization. Several companies, small and big enterprises, corporation entered in India without any Government restrictions and interferes, with advance tools, techniques, machines, and technology, and from here need arise to make highly skilled personnel and labors, to use these technologies, and to make enable personnel/labors to use this advance machines and technology update them according to 'changes' in all these, effective management and leadership both are needed.

Introduction to leadership:

[2,7,8,9] "Leadership can be understood either as a pattern of behavior or as a personal quality. As a pattern of behavior, leadership is the influence exerted by an individual or group over a large body to organize or direct its effort towards the achievement of desired goals. As a personal attribute, leadership refers to the character traits that enable the leader to exert influence over others." A leader is one who has "foresight and vision", who takes decisions, keeping the larger picture in mind. Leaders generally posses a lot of charisma, which is how they are able to hold, sway over the minds of people. However, great leaders also have to be a very brave and confident, for very often they have to take decisions, which will be unpopular in the short run, but will invariably reap benefits in long run in each kind of 'situation'. Means we can able to say in other words "A Leader is one who thinks what he can give to others instead of asking what others can do for him." Hence, let us begin by attempting to define 'Leader and leadership'. Several business leaders defines leader as: one who leads or guides; one who is in charge or commands; one that leads a political party or organization. And leadership as: The position of a leader; capacity or ability to lead; guidance or direction. Now with considering all these theory, I want to exhibit a new model of the leader's mission.

THE LEADER'S MISSION – A NEW MODEL[3]



Model (A) Model (B)

[Execution of Model (A)]

[adopted: Thomas J. Peter and Robert H. Waterman Jr. In search of Excellence; Warner books, 1982]

Now I would like to explain this model in brief. This model exhibits basically leadership is an integration three different tasks, they are, developing vision, reinforcing values and building community and each leader or new leader must address these three central tasks.

Reinforcing Values:

The leader must identify and communicate the values of the organization, and establish the purpose of the enterprises. Effective leaders always clarify the meaning of the work, and help reconcile the growth needs of both the organization and the individual.

Developing Vision:

A vision is an idealized scenario of what the future of an organization or an organizational unit can become i.e. the effective leader will envision the organization's end state and help the organization define the strategy for getting there. But this is not one time task. As the organization evolves and the environment changes, the vision must be continually refined and sometime entirely reinvented. And more rapid 'change' – a sign of our times – will require that leaders has more vision than ever like Jack Welch at GE, Bill Gates at Microsoft, Andrew Grove at Intel, Ken Blanchard at Blanchard consultancy, John Adair, Dale Carnegie, etc.

Building Community:

The success of a leader ultimately hinges on the ability to forge a community of individuals who will work together in the form of organization which again split into teams, to realize their individual and collective potential.

Model B:

Model B is the simply model to show execution of Model A, effective leaders make strategy decision and allocate resources at nexus of values and vision, and manager by contrast, tend to focus only on a linear decision – making process heavily on Analysis.

Leadership Versus Management:

[8]According to Harvard business school, by Professor John Kotter, Leadership and management are certainly different, but they are also essentially complementary. The difference between the two is that ' A leader services to promote "change" in an organization', while 'A manager works to ensure "stability"'. However, in a business world that is constantly changing, one quality cannot be effective without other. In such an environment, organizations need both leaders and managers, if they are to survive and grow in corporate world. The emerge of large organization in the early 20th century led to the development of many of the modern managerial practices and procedures. Without proper management, large and complex organization would not have survived. Thus, management brings orders and consistency into the activities performed by the people in an organization whereas on the other hand, to cope with 'change', leadership is required. Leadership gained in importance in the late 20th century as the business environment became highly competitive and volatile, and each day there is technological and environmental changes overcome in corporate world. [1]In brief, in focus of this text –

- Leadership provides a direction for change, while management deals with planning and budgeting.
- Leadership motivates people, while management controls and solves problems.
- Leadership deals with aligning people, while management deals with organizing and staffing.
- Leadership involves having a vision of what the organization or organizational unit can become. The role of management is to implement the vision.
- Leadership requires eliciting teamwork and corporation from a large network of people and motivating a substantial number of people in that network. Management is less concerned about motivating a large network of people.

[1]Functions of Leader Versus Manager:

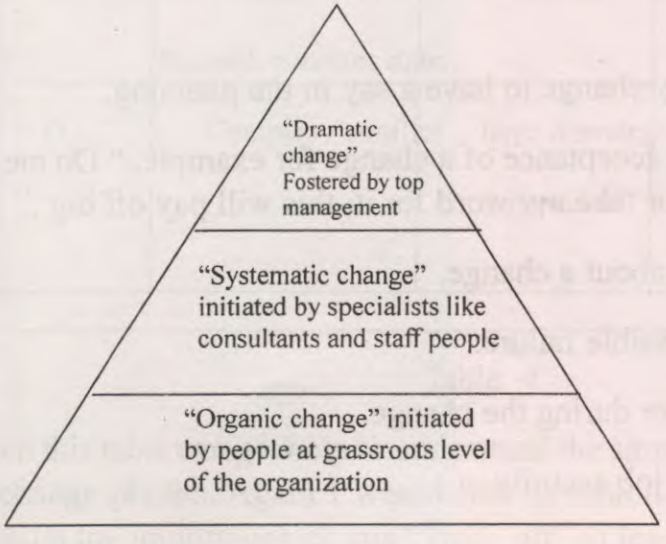
Now days, in changeable and dynamic business environment need strong and balanced leadership simultaneously with management. Because,

- Leaders, not managers, create change.
- A manager administers, a leader innovates.
- A manager maintains, a leader develops programs.

- A manager focuses on system and structure, a leader focuses on people.
- A manger relies on control, a leader inspires trust.
- A manger has a short – range view, a leader has a long – range perspective.
- A manger asks how and when, a leader asks what and why.

Need To Change:

[3]"Autonomy and entrepreneurship – breaking the corporations into small companies and encouraging them to think independently and competitively". This is the third principle among the eight basic American management, and hence, 75% business revolution in America just because of these enterprises. And to manage and lead proper to these small business units very effective management and strategic and situational leadership. And this principle can also very helpful for India for economical and technological growth. Companies grow by expanding into new competitive, attaining a complex mix of financial, material and knowledge assets, expanding market scope, and replicating and standardizing their wins in similar market space. Competitive spaces undergo "change", new technologies emerge and customers "change". But companies sometimes fails to change and make the most of the new opportunities because they are still trying to get pace out of the old opportunities. "Steering Mechanisms" in organizations grow as the organization gets involved in more complex/ conflict activities. These steering mechanisms are essential to make meaning out of the innumerable activities that go on inside the organization. Steering mechanisms are created to align the organization with the leaders vision and also to align the company's vision with organizational changes and with changes in the marketplace. This steering mechanism is controlled and executed by the leader for organizational change with the present "situation" and leading according to situation to teams and organization is "situational leadership". There are so many changes in business organization take place by different management levels and personnel as shown in below model with considering three major changes.



[Model – C], By Henry Mintzberg
Source: ICFAI Centre for Management Research

Vision and Strategies for change

The guiding coalition needs a vision or a clear picture of the future. [3,4] The vision provides the direction in which the organization need to more that's why it is referred to as the "Change Vision." This vision should be easy to communicate .It should appeal to customers, stock holders, executives managers, leaders and employees. Because an unclear change vision can derail the transformation of a company. Without a guiding vision the efforts aimed at change are fragmented, and amount to noting more than confusion, as they are often incompatible. Efforts without a clear vision are bound to FAIL, Even if plans directives, procedures, programmes, decisions, goals and deadlines are properly laid out .The many details of change can confuse employees unless they have a clear understanding of where they are being led. A change vision should be compelling enough to motivate fundamental rethinking at all levels of the corporations. The Success of a change vision depends upon the circumstances in which the firm operate, and leaders ability to communicate. The feasibility of a change vision depends to a great extent on the ability of the leader to carry others with him. A leader who is a good at convincing people can make ambition goals appear quite feasible. And "Judging the

feasibility of the vision also depends on a clear and rational understanding of the organizations Strengths and weakness ", the environment in which the organization operates, and competitive trends. Formulating a strategy that takes into consideration all these aspects is a prerequisite to make and realize strategy for change vision.

Why change Resisted:

[1] There are many reasons why "change" is resisted. Most have to do with the attitudes of people at the top, change is resisted when a Leader:

- Fails to show why change is necessary.
- Fails to be specific about where we are now, where we need to be and how we can get there.
- Fails to allow those affected by change to have a say in the planning.
- Uses a personal appeal to gain acceptance of a change for example, " Do me a favors and vote for my plan " or take my word for it; this will pay off big ."
- Fails to keep people informed about a change.
- Fails to allay worries about possible failure.
- Creates excessive work pressure during the change.
- Fails to deal with anxiety over job security.

Situations and change: solution Trade off of leadership and Management [My Modeled Approach]

I would like to start some introduction of "Situation", before my modeled approach. The effectiveness of any kind of leader behavior depends upon the configuration of their "Situation" in which leadership is being exercised. The Situational factors to be taken into account include characteristics of the task or problem, the participants (both leader and followers), and the organization environment. Thus instead of regarding one form of

leadership as generally better than another w .r. t. Change. It is more accurate to speak of type of leadership as being best for particular combination of circumstances. Means "change" according "Situation", and for change vision for affective leadership, understanding and prediction of "Situation" is must of employees, executives, customers etc, with maintaining managers-employees, leaders-employees, employees-employees, employees-company's, managers-leaders, employees-customers and so on, all these "Human-relation", with respective situation by making change and interpersonal-skills. And All these not only possible by management, equivalent or balanced leadership simultaneously needed to operate Business effectively. Hence proper "Trade off " of both is needed. To handle "Situation" by making "change" As shown below Table – I

Conditions	Situation (S)	Change (C)	Effect on Business Management
A	Complex/conflict	Normal	Perfection Not obtain
B	Normal For Normal situation	Large	perfect, but waist of time
C	Normal Needed, constant state.	Normal	Perfect, No any change
D	Complex / conflict	large &strategic With vision	perfect, with understanding vision & situation clearly and Changes according to that.

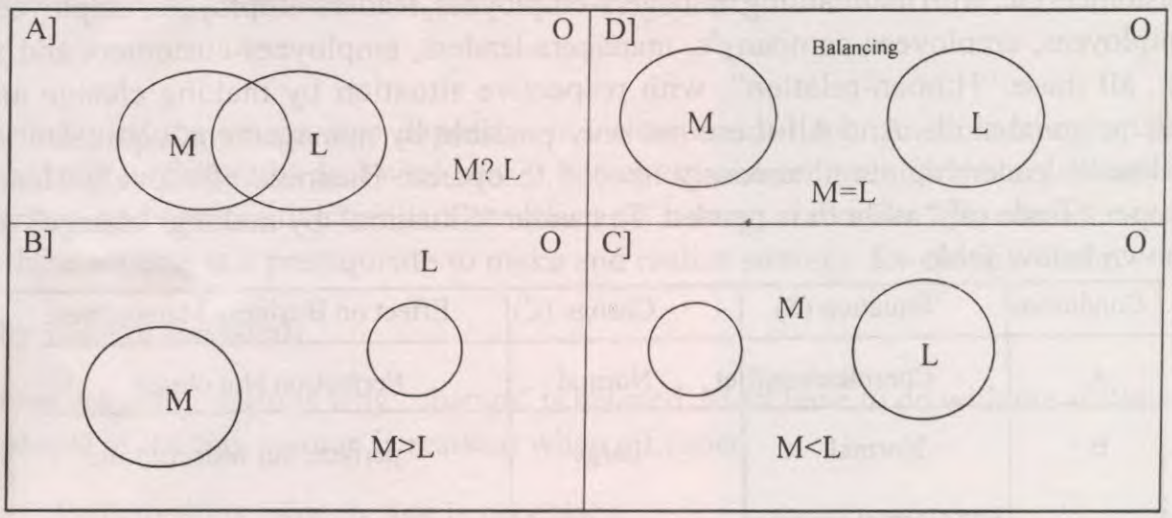
Table –I

From this table can get help to understand the situation and how much effort is needed to change predict. Again I would like to exhibit Table II , in which I am trying to Discuss the importance of this "Trade off" of leadership and management.

Condition	Managing [M]	Leading [L]	Organization output
A	Less	Less	Un stability
B	Less	More	Un stability
C	More	Less	Un stability
D	More	More	High stability

TABLE II

In Table I & II, I have discussed for conditions A, B, C, D, considering in Table –I two variables " Situation" and "change" and Table – II " Managing" and "Leading" respectively. Now with reference to Table- II, I have generated, A balanced Model for proper Trade- off of variable "M" and "L" for management and leadership as shown below. Model – D. constructed using Venn diagrams.



Model – D: [O = Organization, M = Managers, L = Leaders]

With focusing to this Model – D I want explain in brief, what's happen if leadership and management not balanced in today's competitive world. Consider the first condition, i.e. A, where 'M)"L" means some personnel in organization engage in both function

managing and leading hence due overloud pressure, responsibilities and burden there is a chance of malfunctioning. Hence circumstances create organizational unstability in output. And condition 'B&C", where in 'B' More managing and less leading the organization & Symmetry more leading and less managing in 'C' both again create organizational unstability in output. Hence "D" is the only perfect condition i.e. "M=L" means proper Trade-off of leadership and management in organization and hence high organization stability. Hence for management I recommended effective & strategic management and for leadership I recognized to "Situational leadership".

Situational Leadership:

[2]Situational leadership styles have there in, lead to personnel according to their strengths and weakness. Means "Direct" them only in their strengths, but

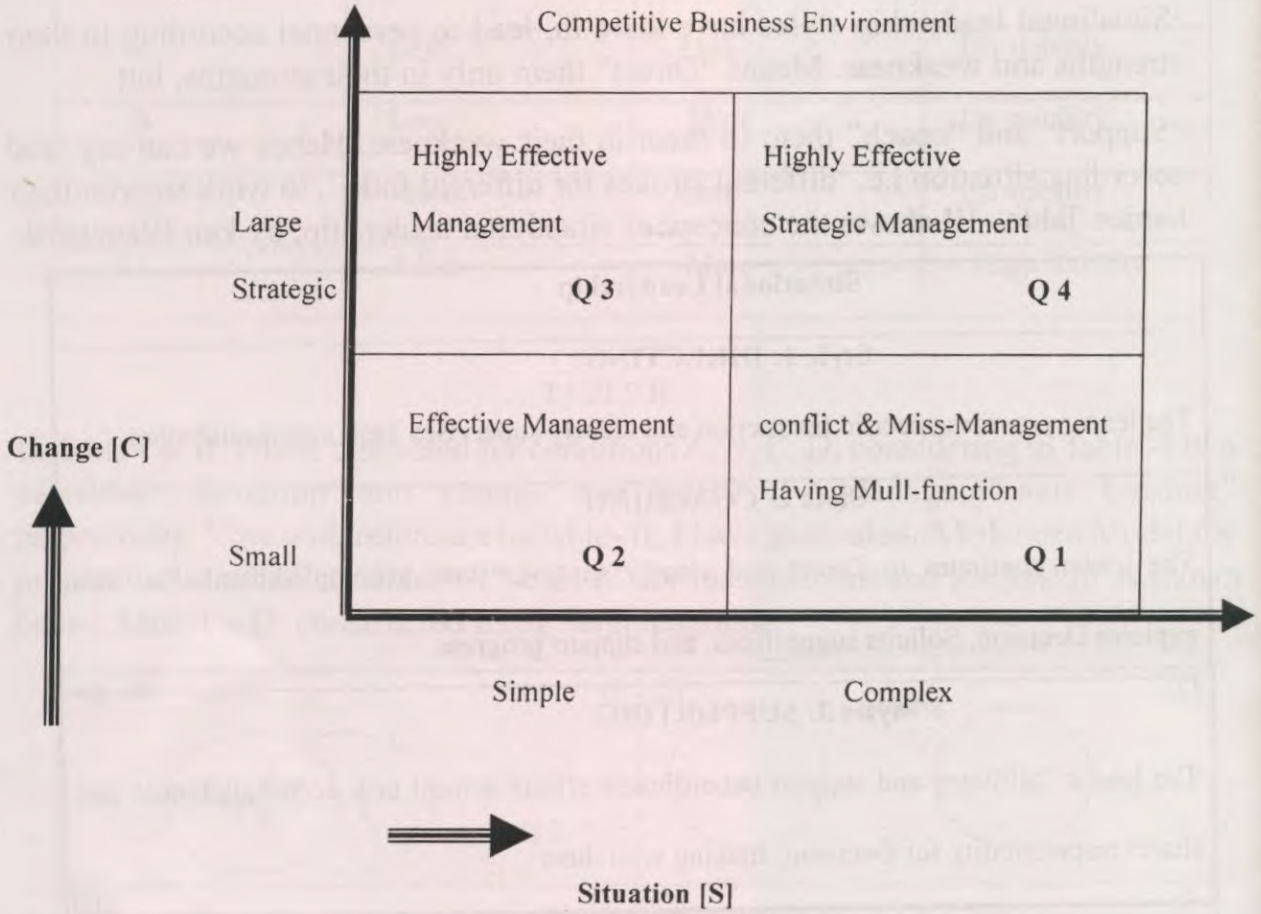
"Support" and "coach" them to them in their weakness. Hence we can say lead according situation i.e. 'different strokes for different folks', to work smarter than harder. Table –III shows the concept of situational leadership, by ken Blanchard

Situational Leadership
Style 1: DIRECTING The leader provides specific Instruction and closely supervises Task accomplishment.
Style 2: COACHING The leader continues to Direct and closely supervise task accomplishment. But also explains Decision, Solicits suggestions, and support progress.
Styles 3: SUPPORTING The leader facilitates and support subordinates efforts toward task accomplishment and shares responsibility for Decision- making with them
Styles 4: DELEGATING The leader turns over responsibility for Decision-making and problem-solving to subordinate

Table –III: [By ken Blanchard consultancy]

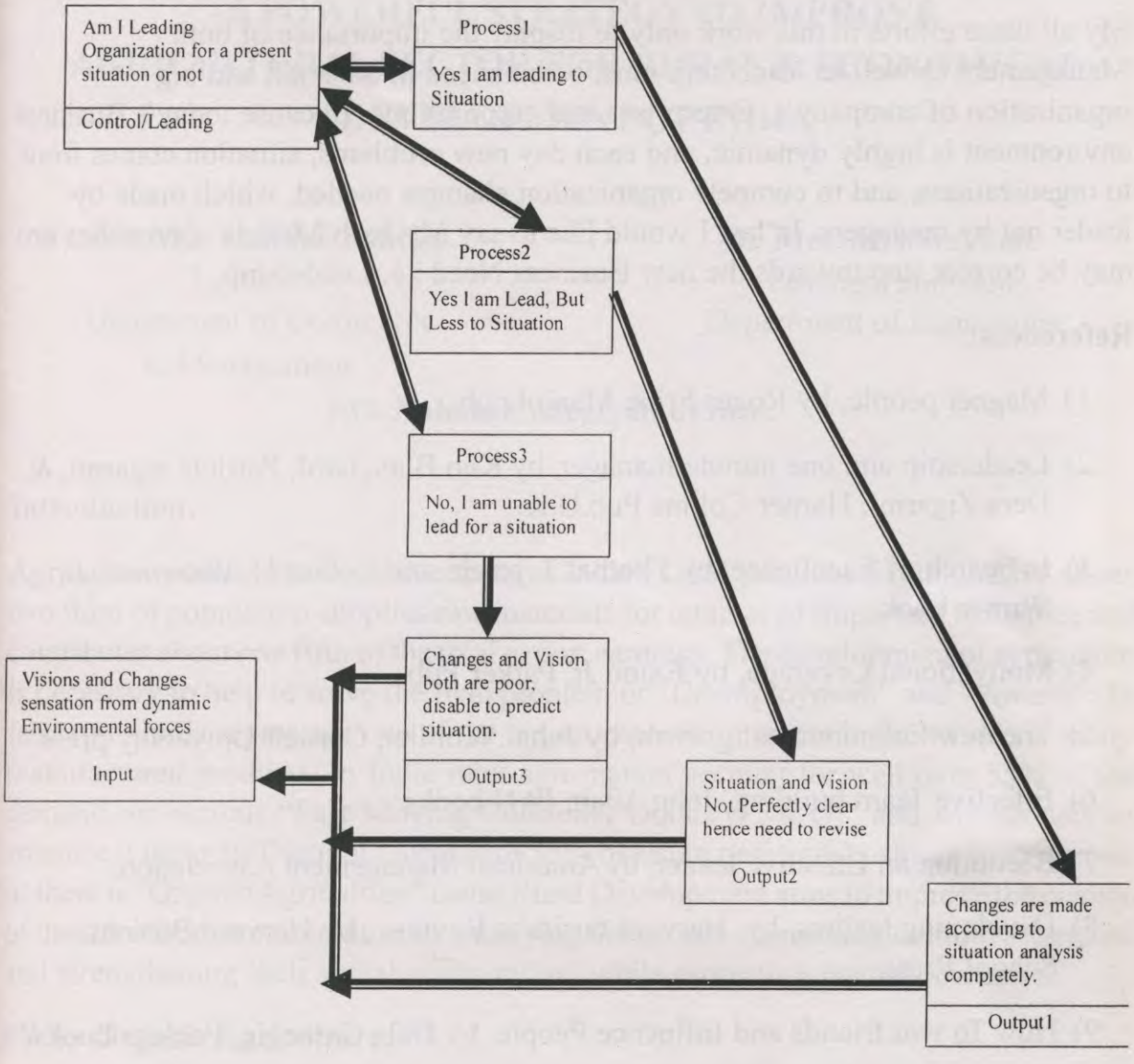
- **My Modeled approach to situational leadership:**

Now with respective all the mentioned literature in my this work, I conclude each and every day requirement of Business corporations, companies, and enterprises changes, just because of dynamic competitive environment like political change, technological change, market trend change, social change need to balance business with enternal change i.e. organizational change or change management with respective external environmental forces for change. These "changes" becomes "situations" to handle in corporate world very carefully otherwise miss-management or management degradation occurs. Hence very concise leadership needed and my suggestion "situational Leadership" approach is excellent among all. My Model Discuss two variable again from Table – I, i.e. 'Situation" and "change" as shown below Model -E



Model – E (Situation – change – Model)

With reference to this Model consider first Quadrant Q1, here situation is complex and with respective situation changes in organization simple and Small, that will result conflict in management all levels and would be produce Mull-function. In Q2 there is no need to worry at all because situation are simple so slightly or small changes in organization is considerable, and again in Q3 quadrant situation simple and against of that change with having strong vision, and strategy, Hence Management or organization is effective. And Q4 is a correct way to handle complex situation by made largest changes with having high stability vision by various strategies, and make Enterprise more stable in competitive world. And all these changes made by the very few by the manager and mostly by the leader. So one can get the help to measure his leadership pattern ether "Situation" or not according to changes by the help of Model –F as Display below



Model-F: (Measurement of Situational Leadership)

"Model – F" Display how one can measure their situation leadership ability. Now I have given system approach to this Model i.e. input. Control, processes, and outputs. Here I used three systems A, B and C. In which only system A we can say perfect system with having situations, vision and changes are sensed very clearly and carefully, Hence with proper control i.e. situation leading process 1.Becomes highly effective and strategic, and in result we got very stable and efficient organization at output 1. , Where system – B and C fail, to do so

Conclusion:

My all these efforts in this work only to display the importance of both Management as well as leadership must be balanced in all small and big organization of company's, Enterprises and corporations. Because today's Business environment is highly dynamic, and each day new problems, situation comes front to organizations, and to compete organization changes needed, which made by leader not by managers. In last I would like to say My both Models approaches are may be correct step towards the new Business Need i.e. Leadership.

References:

1) Magnet people, by Roger Fritz, Manjul pub.
2) Leadership and one minute manager, by Ken Blanchard, Patricia zigarmi, & Dera Zigarmi, Harper Collins Pub.U.K.
3) In Search of Excellence, by Thomas J. peters and Robert H. Waterman. Jr, Warner book.
4) Motivational Leverage, by Exton Jr, Parker Pub.
5) The new Economics of growth, by John .W.miller, Cornell University press.
6) Effective Team building, John Adair, PAN books.
7) Becoming an Effective leader, by American Management Association.
8) Developing leaders, by Harvard business Review , by Harvard Business School Press.
9) How To win friends and Influence People, by Dale Carnegie, Pockets books.

"ORGANIC AGRICULTURE" - A POWERFUL STRATEGY TO IMPROVE AGRICULTURAL SECTOR FOR RURAL & ECONOMICAL DEVELOPMENT OF INDIA

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Introduction:

Agriculture contributes over one forth of India's GDP, provides livelihood for about two third of population supplies raw materials for number of important industries and contributes about one fifth of the total export earnings. The development of agriculture is necessary to help to solve the twin problem of "Unemployment" and "Poverty". In fact, rural India represents one of the largest potential markets in the world for many manufactured products. In India rural agri-market account for well over 55% of the demand for various "Fast Moving Consumer Goods [FMCG]" and we can able to enhance it up to 100%supply instead of 55% by using new agri-business strategy, one of them is "Organic Agriculture" cause Rural Development aims to improve the quality of the life of rural communities by satisfying their socio-economics, cultural aspiration and strengthening their social organization, while protecting natural resources.

#Why Organic Agriculture:

Term "Organic" itself defined its meaning i.e. production of crops plants without artificial chemicals such as sprays and fertilizers and bacteria's etc. Hence we can able to define term organic agriculture in suitable words as

"Organic Agriculture" is a holistic production management system which enhances agro-ecosystem health, utilizing both traditional and scientific knowledge. Organic Agriculture System rely on ecosystem management rather than internal agriculture inputs.

Means is monocultures using large quantities of chemicals, chemical fertilizers and pesticides provoke desertification, salinization and contamination of land and water, resulting loss of productive lands, ecosystem, biodiversity and the extension of species. Hence to get out from these problems "Organic Agriculture" is demonstrating with real life example how to protect land, water, air, and electricity, how to enhance economical, social and environmental "Sustainability". Not only rural population enjoys the fruits of Organic Agriculture, but also urban citizen as well, with completely enviro-eco-friendly grains/crops production system.

Organic Agricultural uses concepts of agricultural sciences, and with/without help of technologies without using any chemicals and chemical fertilizers grow crops/ grains/plants/ fruits/vegetables. Hence strongly decline towards agri-ecosystem and strong enviormental friendly as shown below. Hypothetical generated models.

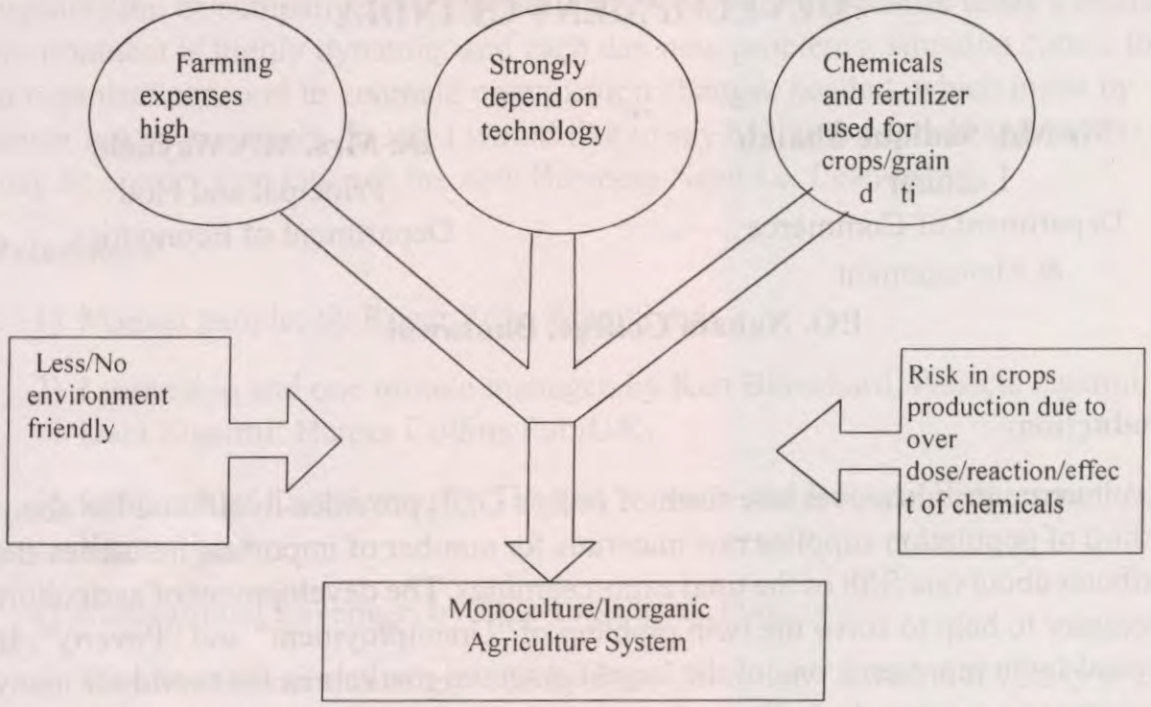


Fig. (a)

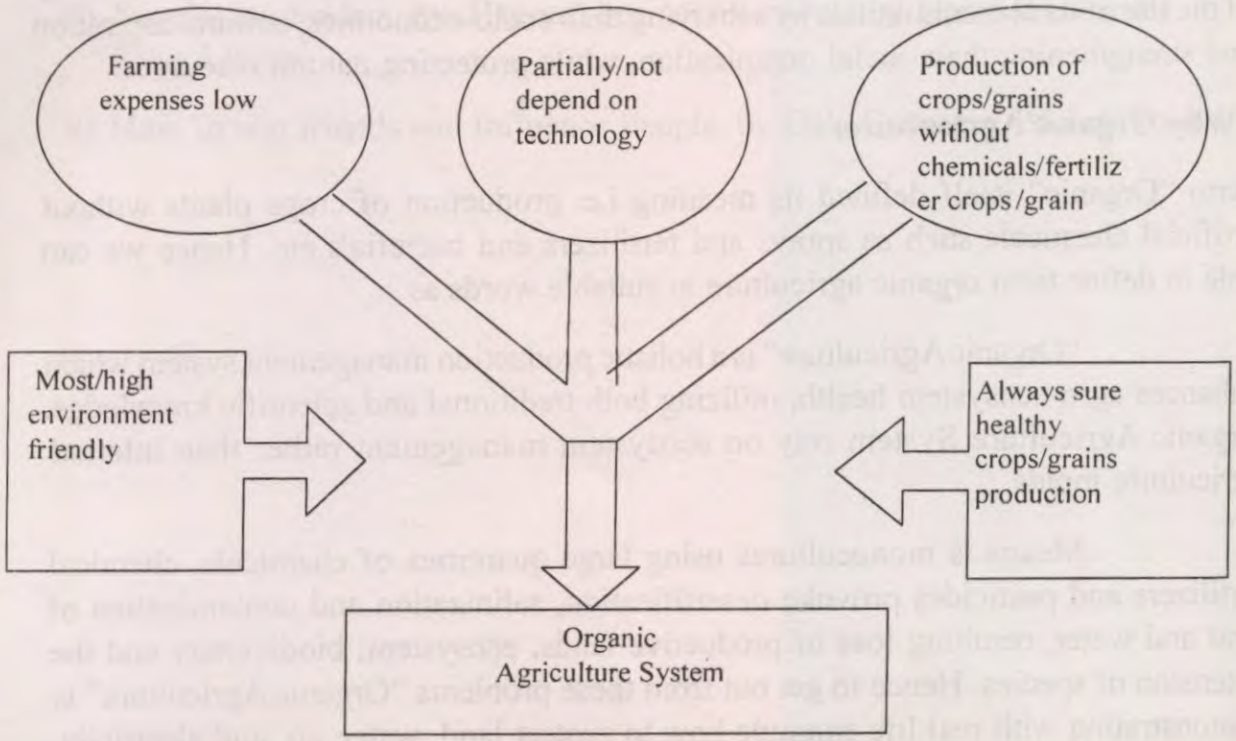


Fig. (b)

#Motives for Implementation:

The govt. of India have to clearly set objectives of Agriculture development emphasizing inter alia as

1. The core need of releasing national creativity.

2. Converting the liability of peoples wants into the assets of ability agriculture/ rural development is, thus of prime necessity.

3. Reduction/ elimination of social and economic inequalities between rural people and urban/metro people and generating maximum social welfare for agri-business/ forming.

Means in abstract any how Govt. of India must have to provide strong financial support and facilities to formers and those personnel's involved in agri-business management. These efforts motivate the Organic Agriculture.

 # Relation between Agriculture and Infrastructure Rural Development:

It is the sheer massiveness of India's agricultural sector which dictates the large quantity of resources needed for its development and substantial results possible from that development. Consequent to the economy's relatively rapid growth from 1960-61 to 1964-65, agricultures share of the total net domestic product, and also provides raw materials to several productions industries. Agriculture provides us "Food security" and thus, is the life blood of our economy hence play great and vital role in industrial and economics growth to develop nation.

Result and Discussions:

Sustainable increase of farmer's income:

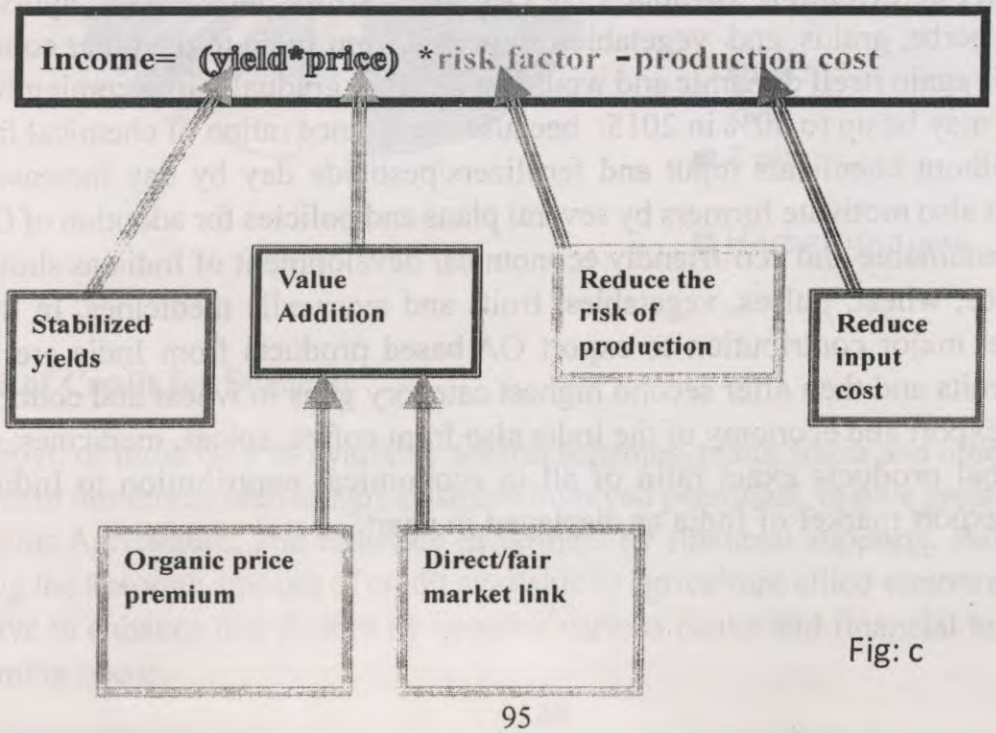
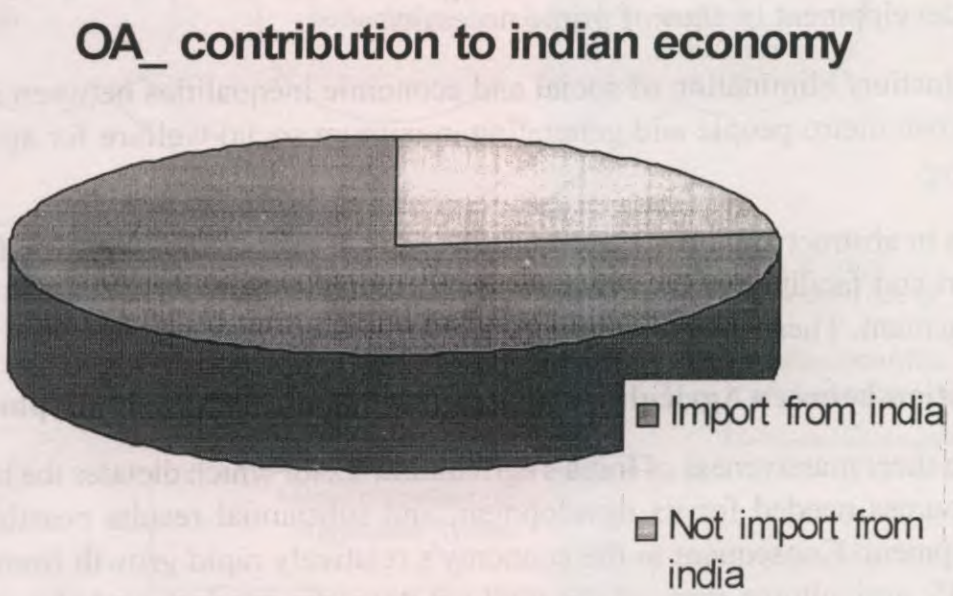
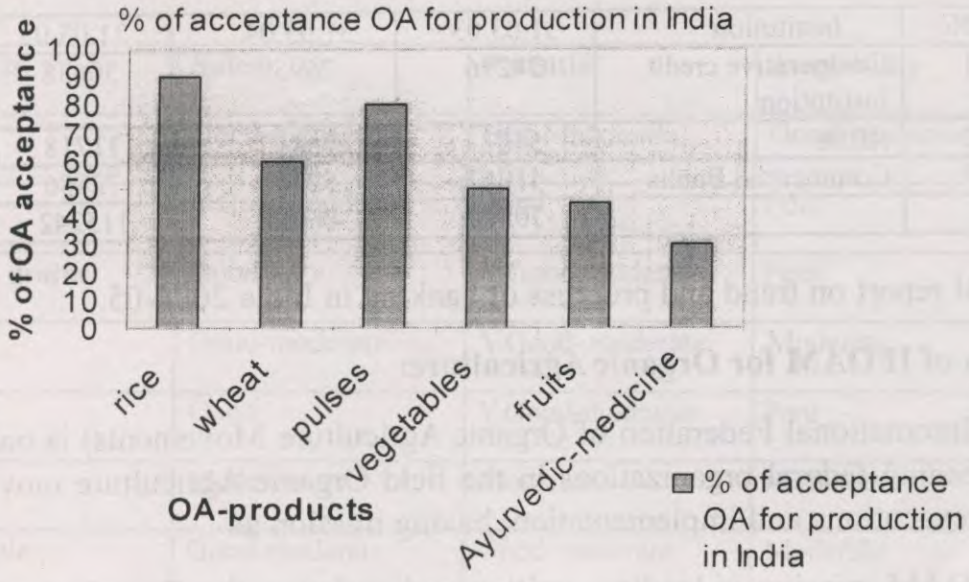


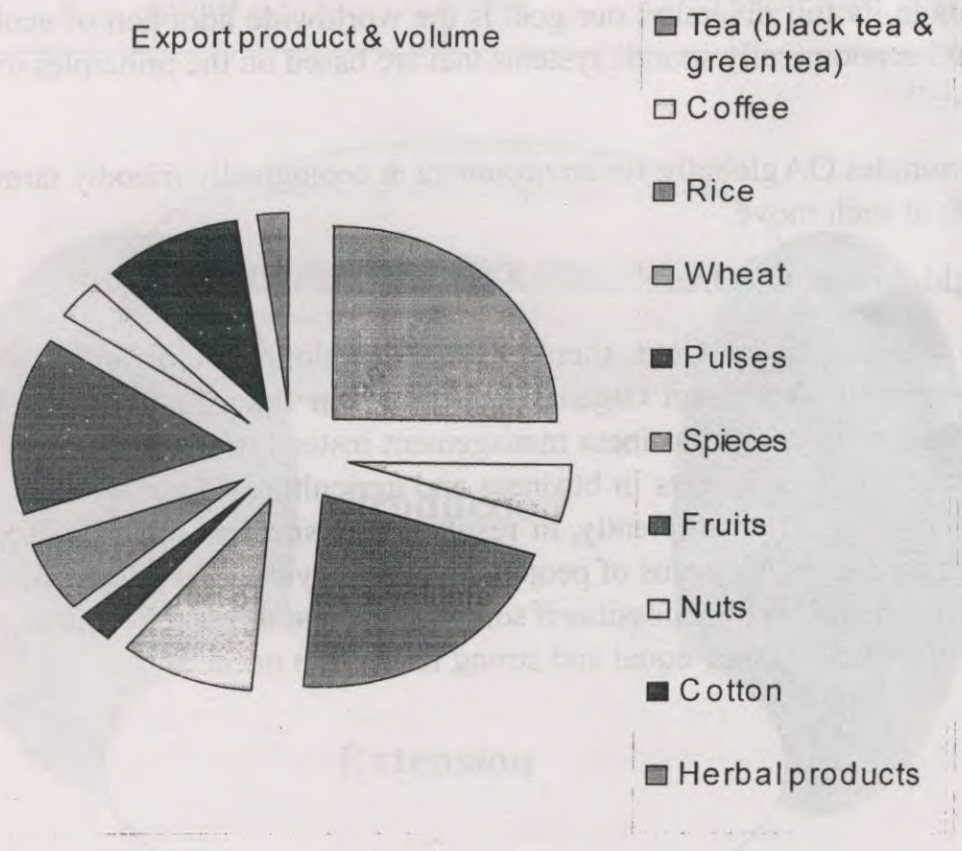
Fig: c

Above figure: c shows model equation for sustainable development of farmers in India by adapting OA based farming and increase in income. This equation is modeled on the basis of several farming needs and by adapting OA how equation become effective and helpful in rural economical development of India.



In India since 2001 approximately many states farmers and government start to take initiative to permute and support to chemicals, fertilizers, paste and pesticides free farming of plants, grains, fruits, nuts, grains, medicines, herbals, oil seeds, vegetables and crops which are healthier and fast without any chemical input in it and after adapting OA contribution to India 23% OA based fruits, nuts, crops, ayurvedic medicines, herbs, grains and vegetables imported from India to the other countries this ration is again itself dynamic and would be increase gradually in incoming two or three years may be up to 50% in 2015. because acceptance ration of chemical free or farming without chemicals input and fertilizers/pesticide day by day increase and government also motivate formers by several plans and policies for adoption of OA in India for sustainable and eco-friendly economical development of India as shown in chart for rice, wheat, pulses, vegetables, fruits and ayurvedic medicines. In Indian 23% market major contribution to export OA based products from India are, Tea, Rice and Fruits and then after second highest category goes to wheat and cotton and after some export and economy of the India also from coffee, spices, medicines, nuts, grains, herbal products exact ratio of all to economical contribution to India by enhancing export market of India as displayed in chart.





 # Need of Credit for Success:

Thus Govt. of India have to available several schemes, plans, loans and others credits facilities to farmers as well as agri-business involved personnel, to give great initiative to Organic Agriculture, and motivate to farmers by financial supports. Below table showing the absolute amount of credit available to agriculture allied sectors and Govt. also have to enhance this further by opening various banks and financial institutions for farming needs.

Sr.No	Institution	31.03.03	31.03.04	31.03.05
1	Co operative credit institution	24296	26959	30638
2	RRBs	5467	7581	11718
3	Commercial Banks	41047	52441	72886
		70810	86981	115242

Source: BI report on trend and progress of banking in India 2004-05.

 # Mission of IFOAM for Organic Agriculture:

IFOAM (International Federation of Organic Agriculture Movements) is one of the greatest leading federal organizations in the field Organic Agriculture movements, planning, executions and implementation, having mission as

"IFOAM mission is leading, uniting and assisting the Organic Agriculture movements in its full diversity; our goal is the worldwide adoption of ecologically, socially and economically sounds systems that are based on the principles of Organic Agriculture."

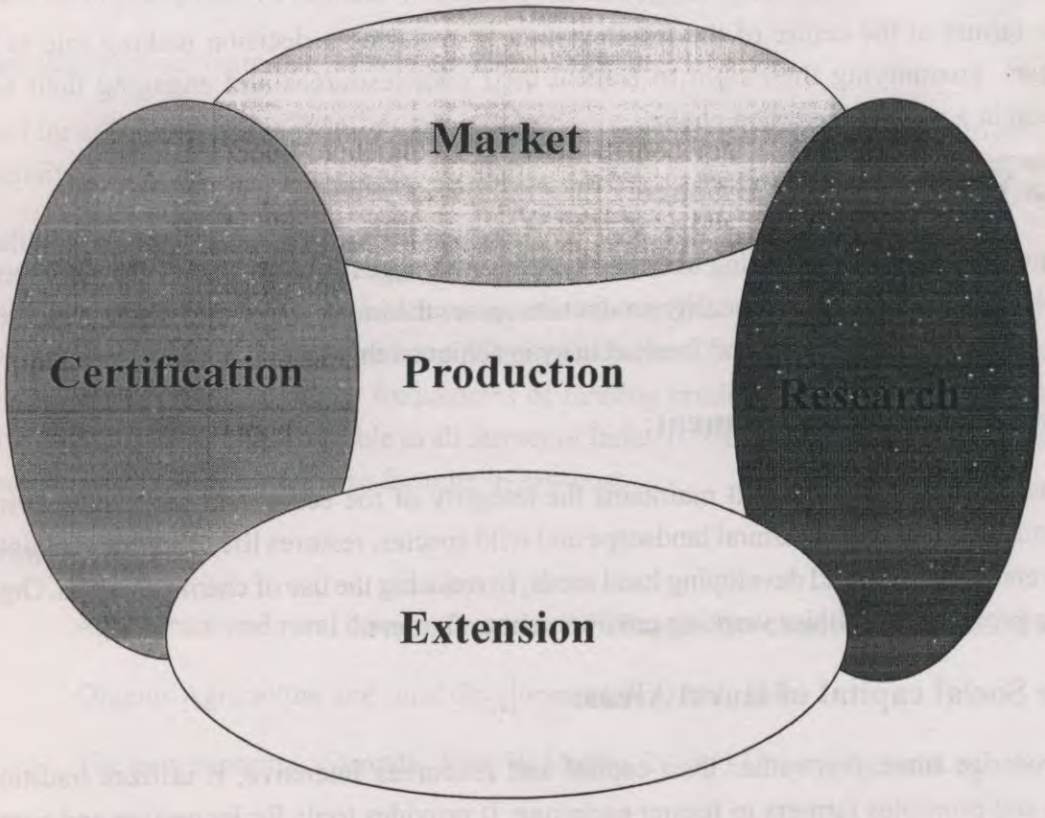
IFOAM promotes OA globally, for environment & ecologically friendly farming, and got success at each move.

 # Leadership needs for OA:

Similar to IFOAM, Indian Govt. should have to develop some organization to lead, coach, guide, plan and direct Organic Agriculture in India and permote Organic Agriculture as well as agri-business management instead of move political leaders, need strongly arises of leaders in business and agriculture which are two hands of country if work together efficiently, in result higher success, and development of economy as well as social status of people, high employment, low poverty, and rural development, and this is only possible if some of lead and direct the agriculture sector very very effectively. Hence equal and strong leadership needed.

Potential for Indian domestic market:

Products	Sales	Potential	Availability
Tea	Good-moderate	Good-moderate	Good-moderate
Rice	V.Good-moderate	Good	Poor
Protein grains	Good	V.Good-moderate	Poor
Spices	Good-moderate	V.Good- moderate	Moderate
Vanilla	Good	V.Good-moderate	Poor
Mango	Moderate	Moderate	Moderate
Pineapple	Good-moderate	Good-moderate	Moderate
Nuts	Good	Good	Poor



1) Large number of companies, NGOs, farmer organizations and government agencies Promoting organic agriculture

2) Estimated* 12'000 certified organic farms in 210 projects, cultivating more than 200'00 ha certified organic land

3) Wide range of organic products in different States

4) Government programmes to support organic farming

5) Good chances on the export market; domestic market coming up.

Above table focused on the aspect of Potential for Indian domestic market this table grades to sales, potential and availability of the products **Tea, Rice, Protein grains, Spices, Vanilla ,Mango ,Pineapple and Nuts** in to very good,-moderate, good-moderate, good, moderate and poor respectively.

Advantage of OA:

Enhance Governance:

It puts the farmer at the centre of the farming strategy restoring a decision making role to local communities, guarantying their right to control their own resources and engaging their active participation in a value added food chain.

Creates a Vibrant economic Space:

Reduced mechanization and avoiding use of agrochemicals creates employment and increase returns to labor. Diversified production of quality product decreases the impact of crop failures and increases marketing opportunities. Income and food security is achieved through diversity.

Maintains a healthy environment:

Through its ecological approach, it maintains the integrity of the ecosystem and productivity of natural resources. It preserves natural landscape and wild species, restores life to soils and maintains agro biodiversity by using and developing local seeds. In reducing the use of chemical inputs, Organic Agriculture provides a healthier working environment to farmers.

Build the Social capital of Rural Areas:

Being knowledge intensive, rather than capital and resources intensive, it utilizes traditional knowledge and promotes farmers to framer exchange. It provides tools for inspection and control, like internal control and participatory guarantee system that strengthen social organization and empower rural communities.

Unsustainable Food System:

More and more farmers are depending on only a few crops that demand substantial investment and create dependence on sometimes unavailable and ineffective agriculture inputs. Inputs cost is high and market prices continue to decrease forcing farmers and workers to abandon their fields.

Saved Natural Resources:

Avoid uses of chemical hence, no water, air pollutions and with sure crops production. Life of soil also increases.

Conclusion:

Some people may be objected to organic agriculture, where as some people strongly appreciate and favour ton organic agriculture debate, but my confusion is positive with organic agriculture it's one of the good farming "strategy" to get high production and sure production of crops/grains without any loss due to under and over chemical hence highly environment friendly with minimum technical efforts so affordable to each farmers. OA facilities several types of relief's, benefits and abilities like

1) Focus on improvement of farmers' livelihoods development orientation

2) Main target group: marginal farmers on marginal land

3) Need for efficient management of natural resources (soil & water) to maintain agricultural productivity

4) Healthy and tasty food, better environment

OA is the emerging need of economical development especially country like India where 55% sector approximate engage in farming as a source of brad and butter. OA require minimum or no chemical inputs and machineries to increase frequencies of farming products growth hence very high cost effective and affordable and adaptable to all farmer of India. It is a key source in which several tools and techniques available to increase farming in low cost

References:

Agriculture and rural development, by S.K.Bagchi, the charted accountant, Feb. 2006

1. Organic Agriculture and rural development, IFOAM, sheet 1.
2. The new economics growth, John.W. Mellor, Cornell University press.uk
3. RBI – Manual, vol.5, report(2005), source: internet
4. Significance of the new strategy of agriculture development for small farmers,
5. V.S.Vyas,D.S.Tyagi,AERS-63,1971
6. www.ifoam.org

AN EMPIRICAL STUDY OF SERVICE GAP MAJOR TELECOM COMPANIES AND THEIR CUSTOMERS IN PUNE GSM CIRCLE (AIRTEL VS VODAFONE)

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Introduction:

In so centuries ahead man has realize that the connection between people has to he as easy as the drinking water and has fast as wind's speed. The speed in being in touch with others will help in entire life situations. The telecommunication has changed the face of communication in man's life and this industry has spread out rapidly and gain tremendous significance in today's world. The speed of growth in this field has created tough competitions between various telecommunication companies in difference area of service providing to customers.

A gap between company's promises and delivery can be seen easily in telecom sector. Level of cap and its reasons will be analyzed by various methods. Factors like Price, Network Service, Brand image and various Value Added Serviced that influence a consumer behavior toward a particular brand.

Indian Telecommunications:

It has been zooming up the growth curve at a feverish pace, emerging as one of the key sectors responsible for India's resurgent economic growth. It is the fastest growing telecommunication market in the world, and with 353.66 million telephone connections (at the end of September 2008, include both the wire line as well as the wireless subscribers) is the third largest telecom market. Simultaneously, overall tele-density has increased to 30.64 percent. While the subscriber base for wireless services has increased to 315.31 million. The subscriber base of the wire line service has declined to 38.35 million from 38.92 million at the end of September 2008. (Source: Corporate Bureau 2009-01-14).

The stupendous growth of the telecommunication companies in India over the last fifteen years can be attributed to the liberal government of India, economic policy. The economic renaissance affected in the early 1990s brought around a paradigm shift on the overall business scenario of India. The telecommunication companies in India went through a huge make-over during the implementation of the open-market policy of India. The erstwhile closed market policy was replaced by a more liberal

form of economic policy. A whole new form of Indian Telecommunication Policy was drafted to compliment the change effected in the economic policy of India. The amendment affected the new telecommunication policy of India made huge changes with respect to investments and entry of Foreign Direct Investments (FDI) and Foreign Institution Investors (FIT) respectively, into the virgin Indian telecommunication market. This resulted entry of private, domestic and foreign telecommunication companies in India. The economic contribution made by these newly formed telecommunication companies of India is really mentioned worthy and this industry witnessed highest growth after the Indian Information Technology industry. The robust growth of Indian economy after the economic liberalization in the 1990s induced massive change in the telecom policy and new draft was framed and implemented by the 'Telecom Regulatory Authority of India' (TRAI) and Department of Telecommunication' (DOT), under the Ministry of Telecommunication government of India.

Evolution of the Industry:

Tue important milestones achieved by the telecommunication industry have been shown in the following table:

Table : Important Milestones of Telecommunication Industry

Years	Important Milestones
1851	First operational land lines were laid by the government near Calcutta (sear of British power)
1881	Telephone service introduced in India
1883	Merger with the postal system
1923	Formation of Indian Radio Telegraph Company (IRT)
1932	Merger of FTC and IRT into the Indian Radio and Cable Communication Company (IRCC)
1947	Nationalization of all foreign telecommunication companies to form the Posts. Telephone and Telegraph (PTT)
1985	Department of Telecommunications (DOT) established, an exclusive provider of domestic and long distance service that would be its own regulator (separate from the postal system)
1986	Conversion of DOT into two wholly government-owned companies: the Videsh Sanchar Nigam Limited (VSNL) for international telecommunication s and Mahanagar Telephone Nigam Limited (MTNL) for service in metropolitan areas.
1997	Telecom Regulatory Authority of India created.
1999	Cellular Services are launched in India. New National Telecom Policy is adopted.
2000	DoT becomes a corporation, BSNL

Major Players:

There are three types of player in telecom services:

- State owned companies (BSNL and MTNL)
- Private Indian owned companies (Reliance Infocomm, Tata Teleservices,)
- Foreign invested companies (Hutchison-Essar, Bharti Tele-Ventures, Escotel, Idea Cellular, BPL Mobile, Spice Communications)

OBJECTIVES OF THE STUDY

- To study consumer perception regarding major Telecom Brands w.r.t Price, Network Service. Brand Image and Value added services.
- To study the satisfaction of customers with the queries of getting solved.
- To have a look on the problems occurring to the customers which make them contact customer care.

Companies Profiles

Vodafone Essar

Vodafone Group Plc is the world's leading mobile telecommunications company, with a significant presence in Europe, the Middle East, Africa, Asia Pacific and the United States through the Company's subsidiary undertakings, joint ventures, associated undertakings and investments.

The Group's mobile subsidiaries operate under the brand name 'Vodafone' in the United States.

Specialties:

Outsourcing, Wireless, Telecoms, IT, Innovation Management

Popular Profiles at Vodafone

- Heny MahmoudHR Director
- Jeni Mundy, UK CTO
- Naceen Chopra, CEO-Mumbai

- Alberto Ripepi, CTO
- Francisco Roman, CEO

New Hires and Recent Promotions at Vodafone

- Juan Pablo Gallardo, Captacion Canal Indirecto
  was Ejecutivo Grandes Cuentas Vodafone - 2 months ago
- Anne-Marie Claessens, Advisor E-care - Maastricht
  was Advisor Business Services - Maastricht - last month
- Filippo Diotalevi, Software Architect
  was Technical Team Leader - 2 months ago
- Peter Mitcheimore, Solution Architect
  was Globa Service Manager - 2 months ago
- Arthur Graper, Internship Vodafone Italia
  was Sales Advisor - 2 months ago

Ownership:

Vodafone Essar is owned by Vodafone 52%, Essar Group, 33°/s and other Indian nationals, 15%. On February 11, 2007, Vodafone agreed to acquire the controlling interest of 67% held by Li Ka Shing Holdings in Hutch-Essar for US$11.1 billion, pipping Reliance Communications, Hinduja Group, and Essar Group, which is the owner of the remaining 33%. The whole company was valued at USD 18.8 billion. The transaction closed on may 2007

Bharti Airtel

Specialties

Mobile, Broadband and fixed telephony, DTH, Enterprise & International

Carrier Services

Popular Profiles at Bharti Airtel Limited

- Amrita Gangotra - Director-IT (India & South Asia)
- Vinita Tikoo - General Manager - HR, Leadership Development & Culture Building
- Deepak Srivastava, - CEO, Kolkata, West Bengal & Orissa
- Deepak Lal - Human resources
- Ajai Puri - Director & CEO - DTH Business

New Hires and Recent Promotions at Bharti Airtel Limited

- Amrita Gangotra - Director-IT (India & South Asia)

  was CIO - Mobile Services & Chief -Airtel IT Operations, Governance - this month

- MianRao, - CEO - Enterprise Business

  was CEO - Globai Voice Business - 2 months ago

- Kishor Asrani - Vice President & Business Head - IT, Telecom & ISP

  was Vice President & Business Head - Manufacturing and Distribution Vertical - 5 months ago

- Nishachal Chudhary - GM – Sales

  was GM - Sales - 3 months ago

- Abhijit Chakravarty - GM - Customer Services & Operations

Review of Literature:

The Indian telecommunication industry, with about 55 million mobile phone connections (Dec 2009) is the third largest telecommunication network in the world and the second largest in terms of number of wireless connections. The Indian telecom industry is one of the fastest growing in the world and is projected that India will have 'billion plus' mobile users by 2015. Projection by several leading global consultancies is that India's telecom network will overtake China's in the next 10 years.' For the past decade or so. Telecommunication activities have gained momentum in India. Efforts have been made from both governmental and non-governmental platforms to enhance the infrastructure. The idea is to help modern telecommunication technologies to serve all segments of India's culturally diverse society, and to transform it into a count of technologically aware people.

Telecom in the real sense means transfer of information between two distant points in space. The popular meaning of telecom always involves electrical signals and nowadays people exclude postal or any other raw telecommunication methods from its meaning. Therefore, the history of Indian telecom can be started with the introduction of telegraph.

Wireless telephones

The Mobile telecommunications system in India is the second largest in the world and it as thrown open to private players in the 1990s. The country is divided into multiple zones, called circles (roughly along state boundaries).

Government and several private players run local and long distance telephone services. Competition has caused prices to drop and calls across India are one of the cheapest in the world. The rates are supposed to go down further with new measures to be taken by the Information Ministry. The mobile service has seen phenomenal growth since 2000. In September 2004, the number of mobile phone connections has crossed fixed-line connections. India primarily follows the GSM mobile system, in the 900 MHz hand. Recent operators also operate in the 1800 MHz band. The dominant pavers are Airtel. Reliance Infocomm, Vodafone, Idea cellular and BSNL/MTNL. There are many smaller players, with operations in only a few states. International roaming agreements exist between most operators and many foreign carriers.

Main article:

List of mobile network operators of India

The breakup of wireless subscriber base in India as of December 2009 is given below

Operator	Subscribebase
Bharti Aitel	118,64,031
Reliance Communications	93,795,613
Vodafone Essar	91,401,959
BSNL	62,861,214
Idea Cellular	5761 1,872
Tata Teleservices	57,329,449
Aircel	31,023,997
MTNL	4,875,913
MTS India	3.042,741
Loop Mobile India	2,649,73 0
Uninor	1,208,130
HFCL Infotel	341,862
Stel	141,411
All India	525,147,922

The list of ten states 9including the metros Mumbai, Kolkata and Chennai in their respective states) with largest subscribers base as of September 2009 is given below

State	Subscriber base	Wireless density
Maharashtra	58,789,949	51.69
Uttar Pradesh	57,033,513	26.32
Tamil Nadu	45,449,460	63.66
Andhra Pradesh	37,126,048	42.58
West Bengal	32,540,049	34.28
Karnataka	28,867,734	43.76
Rajasthan	27,867,734	39.09
Gujarat	27,475,585	45.49
Bihar	27,434,896	25.04
Madhya Pradesh	24,923,739	33.09
All India	471,726,205	

Data Analysis

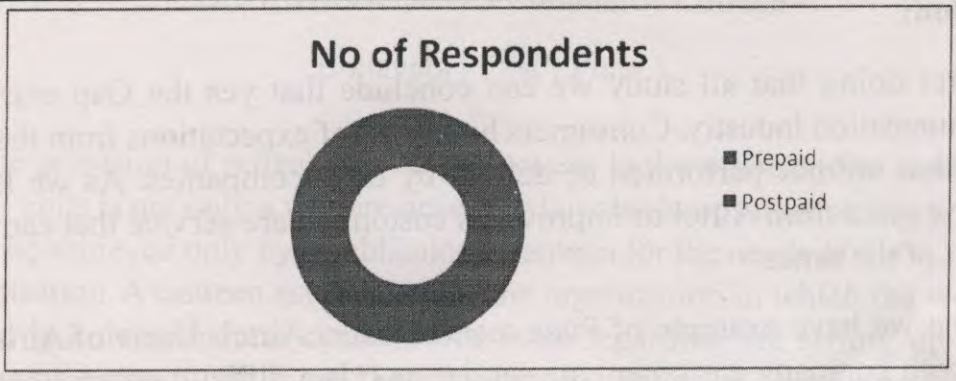
The partial data which is collected through questionnaire has been analyzed and is as below:

Q.1 Which mobile connection do you have?

Particular	No. of respondents
Airtel	15
Vodafone	15

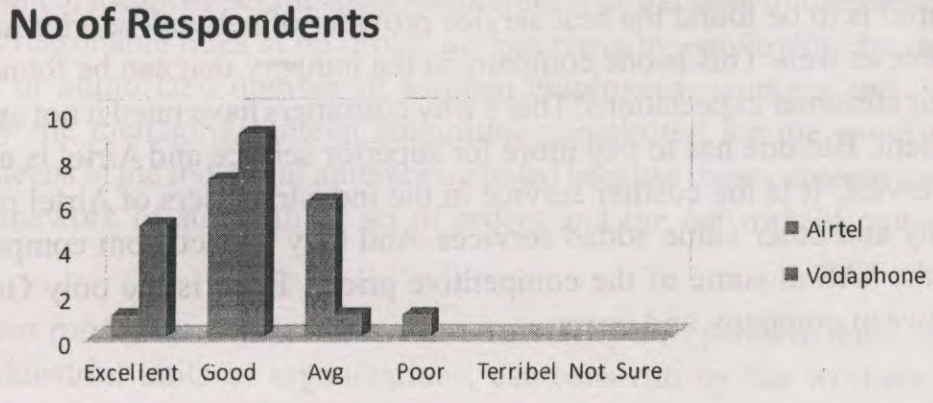
Q2:— What Kind of service you have?

Particular	No. of Respondents
Pre-Paid	30
Post-Paid	0



Q. 3 : Overall, how would you rate your service provider?

Brands	Excellent	Good	Avg	Poor	Terrible	Not sure
Airtel	1	7	6	1		
Vodafone	5	9	1			



Suggestions and Conclusion

Suggestions:

Airtel performance of network service is the best in the market. It has been also rated the best customer care service provider. But it has been found a little costlier than others competitors in the market as not a single customer preferring it because of its pricing strategies. So company should rethink on its pricing strategies. All the companies in the industry have entered into a pricing war in the industry. So Airtel should also provide some of its product and services competitive in the market.

Vodafone again rated best network service provider, best Value added services provider and customer care service provider as well. Overall the performance of the company is best in the industry. Company is also very competitive in the industry as well. But it can improve more by providing more good value added services. Company SMS pack weekly service is no more attractive in these days. And that is one of the most preferred factors by youngsters for the purchase of a telecom service.

Conclusion:

After doing that all study we can conclude that yes the Gap exist there in telecommunication industry. Consumers have a lot of expectations from their service provider that are not performed or deliver by their companies. As we know that consumer expect from Airtel to improve its customer care service that can be found busy most of the times.

Then we have example of Pune market leader Airtel. Users of Airtel are not satisfied with company customer care service as it is a difficult process because one has to wait a lot or call again and again to talk with a customer care representative.

Vodafone performance is good but Gap exists not just with Vodafone, but with all the companies in the industry. Various VAS (Value Added Services) provided by company does not seems to be satisfying their users. Customers are not satisfied with SMS pack that is perceived costlier as compare to others companies SMS packs by Vodafone users. Users also found monthly low call rate pack costlier as well.

Airtel is to be found the best service provider of network service and customer care service as well. This is one company in the industry that can be found delivering as per their customer expectations. That's why customers have rated it not as satisfactory but excellent. But one has to pay more for superior service and Airtel is one example of such service. It is the costlier service in the industry. Users of Airtel paying more for validity and other value added services. And they expect from company to offer some of the VAS at some of the competitive prices. Price is the only Gap exists in Airtel between company and users.

References

1. Miss Amrita, the Vodafone Executive Manager, Tilak Road , Herabagh Chowk, Pune
2. Miss Nayal Rawal, the Sale Manager of Airtel Outlet, M.G. road, Pune
3. Kaushal, Rajeev and Sinha, "Tele Communciation, " Indian Brand equity foundation, Dec 2008..

ORGANIZATION, WORKING & MANAGEMENT OF DEPARTMENTAL CANTEENS

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The provision of refreshment to employees in the office and to workers in the industrial units is not only a welfare necessity but also keeps them active and healthy. This can be achieved only by establishing a canteen for the needs of the employees in the organization. A canteen established by the organization in which the workers are employed is a departmental canteen. The rules regarding the setting up of such a departmental canteen, the management of staff, funds are very important for the organization or the industrial unit.

It is essential to prepare a set of streamlined orders and procedures for the working and functioning of the departmental canteens. A departmental canteen is a canteen set up at government cost inside a government department/office/establishment or inside an industrial unit at the cost of the industrial unit itself for the employees or workers to meet their refreshments as a welfare measure and so to prepare tea/coffee and snacks, lunch, meals as per the local requirements or the taste of the beneficiaries, concerned at reasonable rates at no profit, no loss basis by employing, by recruiting the required or authorized number of canteen employees, workers and which is controlled by the managing/canteen committee constituted for the same specific purpose. Canteens in the industrial units are included because these canteens too follow the same framework of streamlined set of orders and the network of management structures.

Canteens run by the departments, canteens run by co-operative units, canteens run by the industrial units or organizations, canteens run by the workers on the establishment or by the employees hired for specific purpose are included in the category of departmental canteens. The departmental canteens are in a sense the canteens of the workers by the workers and for the employees. These are in house establishments, sometimes as a separate establishment on the premises of the industrial unit functioning as an independent department of the concern. In Defense establishments too, departmental canteens play a significant role in feeding the members of the different units. In Railways, the catering establishments are generally run as departmental canteens, even those ones which are let out to be run by the contractors.

The functioning of the departmental canteen is in any respects similar to that of the other type of industrial canteens but the difference lies in the streamlined efficiency,

the financial back-up and the way quality and quantity control is maintained at every stage of the management of the departmental canteens in the establishments of government and private enterprises.

The organization like the departmental canteen is run by managing the physical, financial and human resources in an integrated manner to achieve the desired results of feeding satisfactorily the employees in a department. Money is the resource of the financial management of the departmental canteen and its provision is made by the department or the establishment concerned. The space, materials and equipment are the physical resources which are again supplied by the top level management of the departmental canteens. The working by the staff, the time and energy required for the operations and the procedures involved in preparing, holding, serving food and the cleaning of the premises are the factors which are part of the actual working of the organization such as a departmental canteen.

The organizational working of a departmental canteen begins with the purchasing of provision. The purchases of both types of items non – perishable and perishable – need different procedures. The non- perishable items such as grains and spices, nuts, oil and other foodstuffs are purchased in bulk and are to be stored systematically. The perishable items like milk, vegetables, eggs, poultry and other perishables need to be purchased at frequent intervals from every day to at least once in a week. The storage of the perishables needs cold – storage facility. The menu planning is an important part of the organizational working of a catering unit like the departmental or an industrial canteen. In most of the canteens the meals and snacks both are served to the consumers. Rice, Dal, and chapatti, roti or paratha are the main items of the standardized meals plate. Dry and wet vegetables meaning vegetables without and with gravy or curry are essential items. Chutney, curds, pickles, raita, and papad are necessary accompaniments with salad of onions, cucumber, carrot, tomato, beet and radish, according to the availability of items. South Indian preparations are favored. Bakery products and snacks are in great demand, fast food items are getting popular. Food production process is an essential part of the preparation of food items, which involves many processes but cooking is the general term used for the entire processing network. The food service involves the mechanics of waiter service. The dining hall service in the departmental canteens is taken care of by the staff who is responsible for the floor management. Self service is being introduced in some of the canteens. The service in the hall or in the open yard is being encouraged these days. The dishwashing, cleaning and equipment maintenance are the final process in the organizational working of the departmental or industrial canteens. The organizational working involves the main task of preparation and serving of food items and disposal of waste materials including cleaning and washing.

The structure of the organization is the way the managements are designed in the administrative set – up and management structures. The structures of the management are of four distinct types. The first type of the structure of management organization is the tight bureaucratic structure with clear commands and control

relationships and strict rules. These structures are known as the closed systems of management structures. The second type of management organization structure is the loose network with a large degree of discretionary decision making which is known as the open system management structure. The third type is the project based structure of management organization. The fourth type is the matrix structure management organization. Current notions farour giving more opportunities to individual at various levels to make ad hoc. decisions. This is empowering the individuals by making the rules loose with the process to be followed but at the same time tightening the control of results. In this pattern, the individual organizations and systems are held accountable for the choices and decisions they make in this loose tight arrangement one which is loose about means but tight about ends.

In the context of the departmental canteens the structure of management organization is generally of the first type in which the structure is of tight bureaucratic structure which is more or less a closed system structure. There is a centralized command and control system of policy making and implementation. The guidelines given in the Green book are the part of a centralized command and control system. The closed system of management organization of decision making at the top and the execution at the lower level is the pattern of the organizational structure of the departmental canteens.

The process of management consists of forecasting, planning, organizing, directing, co- coordinating, controlling, innovating, each of which contributes towards efficiency. The pattern of structure of organization in the context of departmental canteens is that of the decision- making and policy matters at the top end of the structure and the execution and implementation at the lower end of the structure of management organization. The same is followed by most of the departmental canteens. It is more or less similar to the pyramid structure with the tip of the summit at the top and the bottom base at the lower end. The summit top is represented by the top level management of policy makers and the administrators. The lower base at the bottom is the symbolic representation of the lower end workforce of those utility men, helpers, waiters, cooks and other employees who carry out the instructions of the policy – makers and decision – makers.

There are several central and state government offices in and around Pune. The headquarters of the Southern command is situated in Pune. There are many other Defense production units like Ammunition Factory, Ordnance Depot and defense Research establishments like DRDO, ARDL and AIT, command hospital, Artificial Limb centre, Bombay Engineering Group, Mines and Sappers, Defense Accounts, Army Physical Training centre and other units are functioning in Pune. It is also the headquarters of the Air force unit. The training Institute like National Defense Academy is at Khadakwasla near Pune. The National Virology Institute functions in Pune. The Income Tax Commissionerate and the Central Excise Department offices are working in Pune. The Zoological survey of India, the Botanical survey of India, the Archeology Department office and other central government offices have their Pune branches

functioning here. The National Chemical Laboratory has occupied a significant position in the research establishments all over the World. The Central Power and Water Research Institute is another unique institution in Pune. The Tropical Metrology Department and other units have made significant contributions to the scientific forecasting of the weather and monsoon conditions for the entire country and in Pune this department is known by the name of Simla Office. The All India Radio Station Pune and the Film and Television Institute in Pune, the National Film Archive made their mark in the fields related to their functioning. The Armed Forces Medical College is situated in Pune.

Similarly, Pune is the administrative headquarters of the region named Western Maharashtra. The Governor of the state resides during the rainy season in the Raj Bhavan. The directorates of departments like Agriculture, Animal Husbandry, Co-operation, Forests, Education, and Higher Education, Youth and Sports, Social Welfare and others are working from Pune. The regional level offices of the other departments of the state are situated in Pune. Text – book Bureau and HSC, SSC Board offices and SCERT have their headquarters in Pune. There are many state level institutions in Pune. In addition to these central and state government offices, there are many Universities such as Pune, Bharati, DY Patil, Symbiosis, Tilak Maharashtra and others that function from Pune. Similarly, hospitals like Sassoon Hospital, Chest Hospital, Deenanath Mangeshkar Hospital, Ruby Hall Clinic, YC Hospital, Birla Hospital and Inlax Burhani Hospital and many others have made Pune a major healthcare destination. A large number of educational institutions and IT units are established in Pune.

Most of these institutions mentioned above have the units of canteens in their establishment and a large majority of these canteens are run as departmental canteens.

References

1. Ahmad Naseem, 'Hotel Management and Accounting', Amol Publications Pvt. Ltd. 2006

2. Boella M J, 'Human Resource Management in the Hospitality Industry, Pub Stanley Thornes Ltd. (1996)

3. Brown, J., Canteens and Food Services in Industry, A Manual of International Labour Organization, Geneva, 97. (1988)

4. Dr. Ashok Singh , ' HRM in Hotel Industry HRM in Hotel Industry – Concepts and realities' Raj Book Enterprise (1199, Uniyaroka Rasta, Chandpole Bazaar, Jaipur-302001) First edition in 2002.

ENVIRONMENTAL ECONOMICS

AND INTERNATIONAL ECONOMICS

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In 1972, the first international conference on the Human Environment, the United Nations conference on the Human Environment, met in Stockholm. Since then, growing worldwide attention has been devoted to environment issues. Now-a-days national and global environmental issues become major challenges to our society. Due to this there is a new emerging question 'why do we use economics in environmental policy'? Response to these, the main reason s that in our society the environment has becomes a scare resource. Since economics is about how to tackle scare resource, it can often be useful when dealing with environmental problems.

One way of using economics is to ensure that the cost and the benefits of environmental measure are well balance. Economics and environmental objectives are often perceived as being contradictory. It is believed that a choice must be made between one and the other and that both cannot be achieved concurrently.

Two different approaches address economic analysis of environmental issues. The standard approach applies economic theory to the environment using concept of money valuation and economic equilibrium. This aims for efficient management of natural resources and proper valuation of waste and pollution impact on the environment. Variations of standard market analysis can be applied to cases where economic activity has damaging environmental effects or uses up-scarce resources.

In this article I have discussed the main themes of environmental issues due to stable economic growth rate of 21st country. These include: Impact of economic growth on environment, blurring growth debate and relationship between economic growth and environment; the article high lights suggestions and recommendation.

The first essential fact of this new global economy is our dramatically increased population, although global population growth rates have been falling since the 1970s. World population will remain over 60 million per year the next several decades. Such population growth raises the question of whether or not we can feed the world. Growing populations require more space for urban, residential and industrial development. This need will tend to encroach on farmland, forest, and natural ecosystems.

Second, recourse use issues also surround the question of future population and economic growth. Our current heavy dependence on fossil fuel resources poses major problems for the twenty first century economy. Coal, oil and gas burning all contribute to ground level air population as well as to global carbon emission, an important cause of global climate change.

Over harvesting of renewable resources has caused serious environmental losses. World forest cover has declined, with particularly rapid loss of tropical forest during the past several decades. These pressures will only increase with rising demands for food, fuel, wood products, and fiber. Fourth Economic growth also brings the problem of growing volumes of cumulative pollutants and of toxic and nuclear wastes. Controls on emission, the traditional force of pollution policy, are of limited use in dealing with these more indigenous problems.

The environmental space for the poor deteriorates at the same time as the rich can buy at least temporary release from global environmental degradation. Thus international trade in full and unequal world is something quite different from the story told by standard economics. There are various definitions of sustainability and especially of sustainable development. Notably, economic development provides for human needs without undermining global ecosystems and depleting essential resources. Increased output of goods and services can certainly be a part of the desired outcome, but equally important is the maintenance Of the ecological base of the economy as such fertile soils, natural ecosystems, forests, fisheries and water systems. Techniques for modifying the measurement of national income can take such factors into account.

Every economy must use some non-renewable resources but sustainable development implies conservation or recycling of these resources and greater reliance on renewable. On the consumption side an important distinction must be drawn between wants and needs contrast to the standard economic paradigm, in which 'dollar votes' commands the market place and determines which goods are to be produced, sustainable development implies putting a priority supplying basic needs before luxury goods.

An issue arises as to weather renewable energy sources have the capacity to replace fossil fuel dependence. The challenge is a daunting one, because renewable now supply less than

10% of energy in the industrialized nations. The picture is different in developing country , where a large portion of current energy supply comes from biomass as such would, plant and animal wastes. Efficient use of biomass and maintenance of forest resources can thus play important role in energy policy. Technological advances in solar, wind and biomass energy systems have lowered the prices of these renewable sources and their potential for future expansion is significant both in developed and developing nations.

SUGGESTIONS AND POLICY RECOMMENDATION

1. IT may be recommended , that the rich nations should shoulder more responsibility of environmental conservation as their average consumption ,share in total consumption and the trend consumption are many times higher than the poorer nations, albeit their elasticity of consumption can not and must not be considered as an excuse for the rich nations for the reasons that even with lower elasticity their consumption level will remain manifold higher than that of the poorer countries associated with pseudo high elasticity.
2. Move away from the ideology of global economic integration by free trade, free capital mobility, and export –led growth. Move towards a more nationalist orientation than seek to develop domestic production for internal markets as the first option having resource to international trade only when clearly much more efficient.
3. Maximizing the productivity of natural capital in the short-run and invest in increasing its supply in the long run.
4. Stop counting the consumption of natural capital as income.
5. Environmental regulation act should be properly enforced.
6. The environmental policy framework needs to be strengthened.

CONCLUSION

The environment provides goods and services that sustain human development so we must ensure that development sustains the environment. Better economic approaches and natural resource management increases the income nutrition of poor people, but steady economic growth raise challenges in the twenty first century. Response to these challenges requires understanding the economics of the environment policy aimed at environmental; protection have economic costs and benefits, and this economic dimension is often crucial in determining which policies we adopt .Some environmental goals ,in other cases these goals may prove compatible and mutually reinforcing.

Additionally the nature of economic growth itself must adapt to environmental and resource constraints .The concepts of sustainable development attempts to combine economic and production energy use, natural resource management ,and be widely adopted .A sustainable global economy also implies limits on population and material consumption .The question of sustainability of economic activity has already become a major issue , and will be more important in coming decades.

REFRENCES

1. Meadows, Donella H, The limits to growth, New York: University Books,1972

WEB: www.developmentgoals.com/environment.htm

2. Jeroen, CJM, Van Den Bergh, themes approaches and differences with environmental Economics.

3. Daily Herman M (1999) "Testing the impact of trade liberalization on the environment"

In P.Fredikson,Word bank discussion Paper no 402Washinton DC, The World Panel.

4. Baumal W.J and W.E.Otes 1988.The theory of Environmental Policy, 2nded Cambridge University Press U K

5. Bergh J.C.J.M. Vanden 1996 Ecological economics and sustainable development: theory methods and applications Edward Elgar, Cheltenham

6. Ayers R. U. 1998 Theory And Implementation of Economic models for sustainable Development, Kluwwer Academy publication, Dordrecht, pp.2-18.

7. Abhay Kumar, 2005. Environmental Protection in India. New Century Publication, New Delhi, India.

8. B. L. Mathur, 2007. Economic Environment and Policy. Wide Vision, Jaipur. India.

THE EMERGING TREND :
ORGANIC AGRICULTURE AND FOOD SECURITY

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Introduction:-

Food safety, food security and agriculture are intimately inter-related. How we grow our food and what we grow determines what we eat and who eats. It determines the quality and safety of our food. Yet food safety, food security and agriculture have been separated from each other. Food is being produced in ways that is robbing the majority of people of food, and those who are eating are eating bad food. One billion people on the planet are hungry. Another two billion are suffering from food related diseases such as obesity, diabetes and hypertension. Those who are not getting Access to food are victims of the malnutrition related to being poor. Those who carboy food in the global supermarket is also victims of another kind of nutrition, the malnutrition of the rich. Third World countries are carrying a double burden of food-lasted disease, hunger and obesity. The WHO / FAO have predicted that by the year 2020 it is ojectedthat 70% of ischemic heart disease deaths, 75% of stroke deaths, and 70% of diabetes deaths will occur in developing countries. These diseases, called noncommunicablediseases, are directly linked to diet.

Organic agriculture is as an environmentally and socially sensitive food supply system. This paper examines its many facets, looking at the contribution of organic agriculture to ecological health, international markets and local food security in India. It builds empirical experiences throughout the world and analyses the prospects for a wider adoption of organic agriculture. Numerous scenarios depicted in this paper represent the millions of people from all social and economic backgrounds who have adopted this new agrarian ethic on the integrity of food. An introduction to the general concepts of organic agriculture includes an overview of its agronomic, economic, social and institutional performance. Further, the paper presents scientific evidence of the impact of organic- agriculture on environmental goods and services and offers an evaluation of its possible contribution to the implementation of international environmental agreements. It also reviews the current status, trends and prospective development of certified organic agriculture production and trade. The important contribution of resource-poor peasants and indigenous farmers to non-certified organic agriculture is highlighted and reviewed, Specific examples of how organic agriculture improves agricultural productivity and rural livelihoods are presented, along with

lessons for scaling up positive experiences. The emerging sector of organic aquaculture is described, and its potential is discussed. Finally, case studies from Brazil, India, the Islamic Republic of Iran, Thailand and Uganda show how traditional knowledge, social mobilization and agro-ecological approaches have been used to restore degraded natural resources while producing food. The small farmers who seek fully integrated food systems are given recognition throughout the publication. They, along with the consumers who are creating market-based incentives for ecological management of agricultural systems are at the centre of the "organic movement". The paper discusses the weakness of institutional support for nurturing existing knowledge and exchange in organic agriculture, support that could further enhance organic agriculture's positive impact on the food security.

The organic agriculture in India

Organic agriculture is no longer a phenomenon of developed countries. Countries). Although difficult to quantify, non-certified organic systems (e.g. indigenous models that follow organic principles by intent or by default) of several million small farmers may represent at least an equivalent share in subsistence agriculture of developing countries.. Unlike legally protected labels, the term "organic agriculture" is used in this review in its broadest sense. Organic agriculture as a holistic production management system that avoids use of synthetic fertilizers, pesticides and genetically modified organisms, minimizes pollution of air, soil and water, and optimizes the health and productivity of interdependent communities of plants, animals and people. The term "agriculture" is used in its wider sense to include crop/livestock systems, organic aquaculture and organic harvesting of non-timber forest products. Agricultural "products"

Include food, fibers and medicinal and cosmetic raw materials. Finally, "organic agriculture" is not just about production. It includes the entire food supply chain, from production and handling, through quality control and certification, to marketing and trade. In the market place, the organic claim requires certification, and related in the market place, the organic claim requires certification, and related products are distinguished by an organic label. Organic labels are obtained through third party certification and grower group guarantee systems, both of which provide valid verification of compliance with organic Standards. Those farming systems that actively follow organic agriculture principles are considered.

Organic, even if the agro-ecosystem or the farm is not formally certified organic. However, the nonuse of external agriculture inputs does not in itself qualify a system as "organic", especially if this results in natural resource degradation (such as soil nutrient mining). Therefore, organic agriculture includes both certified and non-certified food systems.

To provide clarity on the organic claim, organic agriculture is governed by detailed standards and lists of allowed and prohibited substances. In addition, the organic community3 has adopted four overriding principles for organic agriculture.

- **Principle of Health**: organic agriculture should sustain and enhance the health of soil, plant, animal and human as one and indivisible.
- **Principle of Ecology**: organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.
- **Principle of Fairness**: organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.
- **Principle of Care**: organic agriculture should be managed in a precautionary and responsible manner to protect the health and well being of current and future generations and the environment.

These principles are currently being translated by IFOAM into international benchmark standards that will allow diverse pathways towards achieving organic agriculture objectives.

The origin of hunger

The India is producing enough food for all. However, billions are being denied their Right to food. The globalised industrialized food system is creating hunger in many ways. Firstly, industrialized agriculture is based on destruction of small farmers. Uprooted and dispossessed peasants join the ranks of the hungry. Secondly, industrialized agriculture is capital intensive. It is based on costly external inputs such as purchased and non-renewable seeds, synthetic fertilizers, pesticides, herbicides. Peasants get into debt to buy these inputs. To pay back debt they must sell all they grow, thus depriving them of food. If they cannot pay their debts they loose their land. And they are increasingly loosing their lives. More than150, 000 farmers in India have committed suicide as costs of inputs have increased, and the price of their produce has fallen, thus trapping them into debt. Malnutrition and hunger is also growing because farmers are being pushed intogrowing cash crops for exports. The nature of agriculture and the nature of food is being transformed. Agriculture, the care of the land, the culture of growing good food is being transformed into Corporate, industrial activity. Food is being transformed from being a source of nutrition and sustenance into being a commodity. And as a commodity, it will first flow to factory farms and now cars. The poor will get the left over.Factory farms are a negative food system. They consume more food than they produce. Industrial beef requires 10 kg of feed to produce 1 kg of food. Industrial pork requires 4.0 – 5.5 kg of feed to produce 1 kg of food. Factory farmed chicken requires 2.0 – 3.0 times more feed than it produces as food.Industrial befouls are putting a new pressure on food. Food prices in India have doubled.

Food Safety: Freedom from hazards of industrial uniformity?

Food safety is a growing concern with the industrialization and globalization of food.Food related diseases has spread. As Tim Lang, Professor of Food Policy at City University, London reports, "incidence of food-borne disease has in fact risen during the era of the productions Paradigm. In West Germany cases of infections S.Enterites rose from 11 per 100,000 head of Population in 1963 to 193 per 100,000 in 1999, in England and Wales formal notifications of the same disease rose from 14,253 cases in 1987 to 86,528 in 2000."Food hazards have increased with industrialization of food production andprocessing. As Colin Trudge observes "the modern food supply chain is convoluted and so long that it allows endless opportunities for malpractice of all kinds – including many that beggar the imagination of those who are not criminally inclined. TheSupply chain is impossible to police because it is so complex, and because policing is so expensive (and nobody wants to pick up the bill – certainly not the governments who win votes by keeping the price of food down). Sometimes though, it is not at all easy to draw a line between outright villainy (like the adding of contaminants) from the standard, legitimate practices of the modern food industry. On a global scale, new diseases are emerging and more virulent forms of old diseases are growing as globalization spreads factory farming and industrial processing and agriculture. Disease epidemics and food hazards are the outcome of food production methods based on hazardous inputs and processes.

The food security challenge:

Developing sustainable food security for all has been the key mandate of FAO since its founding. This mandate was reinforced by the World Food Summit in 1996 and its follow up meetings and instruments, such as the Right to Adequate Food. Recognizing that there has been great progress towards this goal in the last 60 years, the 32nd Session of the Committee on World Food Security assessed the food situation in September 2006 and acknowledged that the World Food Summit target of halving the number of hungry people by 2015 will not be met; the number of undernourished has remained virtually unchanged since 1990-92, although there has been a reduction in the percentage of undernourished (FAO, 2006). Household and national food security is complex and complicated goals influenced by many

Factors such as technologies, human capacities, policies, prices, trade and infrastructural context. Demand for food is certain to increase with increasing population pressure and income, even though this demand and ability to supply the demand are not equal in all communities. Indeed, today's total global agricultural production is sufficient to feed the current world population and both necessary technologies and multilateral environmental agreements are available to help meet development and conservation needs.

However, hunger, poverty and environmental degradation persist even as concerns about global human security issues continue to increase. Moreover, the last decades provide

Uncompromising evidence of diminishing returns on grains despite the rapid increases of chemical pesticide and fertilizer applications,

1. Resulting in lower confidence that these high input technologies will provide for equitable
2. Household and national food security in the next decades. Overall, global cereal output is declining,
3. Mainly among the major producing and exporting countries.

Seventy-five percent population of the India's live in rural areas of developing countries. They suffer from problems associated with subsistence production in isolated and marginal locations with low levels of technology. This subsistence and small holders' livelihood systems are risk pronto drought and floods, crop and animal diseases and market shocks. However they also possess important resilience factors associated with the use of family labour, livelihood diversity (non-farm activities account for 30 to 50 percent of rural income) and indigenous knowledge that allow them to exploit risky environmental niches and to cope with crises. Pro-poor policies based on efficiency and employment generation associated with family farms can be expected to improve these household conditions.

For example:

A diverse agricultural system that enhances Agriculture is therefore fundamentally multifunctional, as it involves much unique solution.

Lessons learned in hunger reduction

- Hunger reduction is necessary for accelerating development and poverty reduction; hunger Perpetuates poverty and targeted interventions are needed to ensure access to food;
- Agricultural growth is critical for hunger reduction. In the poorest countries, agricultural Growth is the driving force of economies and combating hunger requires an expanded Commitment to agriculture and rural development
- Technology can contribute, but under the right conditions (e.g. adapted to local conditions that favour small-scale producers and increase farm incomes);
- Trade can contribute to hunger reduction and poverty alleviation but gains are neither automatic nor universal;
- Public investment is essential for agricultural growth (e.g. infrastructure, research, education And extension;
- Development assistance does not target the neediest countries and has declined compared with the levels of 1980s; and protected conflicts seriously undermine food security.

Opportunities and Constraints of Organic Agriculture under Each of the Four Food Security Dimensions

The multidimensional nature of food security includes food availability, access, stability and

Utilization. For each dimension, organic agriculture offers benefits and experiences constraints, as summarized below. It is important to keep in mind that, for each of the food security dimensions, the benefits and challenges described will not apply evenly to all organic farming systems, which range from non-certified production destined for local consumption to market-oriented certified systems seeking price premiums. In all cases, synergies are possible; either by better linking good agro ecological practitioners to markets or ensuring that specialized organic systems (monocultures) do not compromise environmental and social benefits.

A Food Availability

Availability refers to having sufficient quantities of food of appropriate quality, supplied through domestic production or inputs, food aid and net imports. In addition to the decades-long challenge of sustainably intensifying food production to meet increasing population and limited natural resources goods and services, the world is today confronted with new challenges, like water scarcity and fossil-fuel crises, posing questions on the feasibility of sustaining productivity with high external agricultural inputs; rural depopulation (world's urban population exceeded rural population in 2006), posing questions on availability of food; globalized food systems that erode local food systems, posing questions on the ability of small holders to produce food for themselves.

B. Food Access

The food access dimension of food security refers to the access, by individuals, to adequate resources and entitlements for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which he or she lives (including traditional rights such as access to common resources). At national level, food accessibility is computed from food import price levels and the ratio of food imports to total export earnings. It is clear today that assuming that growth will trickle down and improve the conditions of the agriculture can no longer develop in isolation as environmental services from the rural space are increasingly known to be essential for global ecosystem health (e.g. biodiversity, the water cycle, the carbon cycle) and rural landscapes are increasingly used for tourism purposes.

C. Food Stability

Climate change and inter-annual variability and, thus, adverse impacts on yield stability and increased ability of the food insecure; alarming of environmental services

and, thus, agro-ecosystem and global ecosystem resilience; Trade reform impacts on development and seasonality of both prices and quantities, with adverse impact on rural food security if it unduly reduces real prices received by domestic farmers.

Resilience:

Well managed organic agriculture uses a number of preventive approaches that can greatly reduce the risk of severe yield fluctuations due to climatic and other uncontrolled incidents, contributing to the resilience of the food supply. Due to its agro-ecological approach, organic agriculture is an effective means to restore environmental services. This factor is much more important than individual practices (e.g. use of drought-resistant crops) in preventing system imbalances such as new pest and disease outbreaks. It is organic management's self-correcting process that gives a climate-related value to the agro-ecosystem.

Water-use efficiency:

Building active soils with high content of organic matter has positive effects on soil drainage and water-holding capacity (20 to 40 percent more for heavy loess soils intemperate climate), including groundwater recharge and decreased run-offs (water capture in US organic plots was 100 percent during torrential rains). In india organic corn yields were 28 to34 percent higher than conventional in years of drought. In India, biodynamic soils have been reported to decrease irrigation needs by 30 to 50 percent. Water-use efficiency is assumed to further improve through minimum tillage but no comparative studies are available on this subject.

Risk management

The production and processing diversity re-introduced by organic systems brings back traditional food provisioning strategies to secure food at all times, especially in times of crisis. Diversification of production, storage and processing of organic foods builds on traditional practices but more knowledge is needed to enhance the management of such "decentralized" food stocks and safety nets. An increase in the incidence of food self-sufficient households .

D. Food Utilization

The food utilization aspect of food security refers to ways in which food contributes to

An adequate diet, clean water, sanitation and health care, and in turn, to a state of nutritional well-being where all physiological needs are met. This highlights the impact that non-food inputs can have on food security. New challenges include

Diversifying:

Successful diversification of small holder farming systems can lead to

Improved nutrition in poor households due to more secure and diverse food intake with a Combination of minerals, and vitamins, etc

Nutrition:

The nutritional adequacy of organic foods, as compared to food produced with high external inputs, includes generally higher vitamin C, less nitrates, higher zinc/ phytate ratio, higher plant secondary metabolites and conjugated fatty acids in milk. Organic milk contains 0.34 percent of conjugated linoleum acids versus 0.25 percent for conventional, suggesting higher protection against cardiovascular disease and cancer. Essential amino acids are found in higher proportion while total protein content is decreased. More than individual food content *per se*, the primary nutritional benefit of organic diets stems from increased diversity.

Health: sanitation and health in organic food systems make major contributions to reducing

Occupational pesticide poisoning. Conventional agriculture reports 20 000 deaths per year related to pesticide use which also can cause widespread illness including Parkinson's disease. However, no data exists on health risks for producers using permitted organic pesticides such as copper chloride or plant extracts. For organic consumers, benefits include a lower incidence of allergies and improved human health due to the above mentioned nutritional advantages.

Water quality: organic production systems contribute to the availability of clean water.

Surface waters are reduced by less phosphate leaching and groundwater quality is enhanced by up to four times less nitrate leaching. Outdoor pig production, however, remains concern with regards to nutrient leaching.

The Right to Adequate Food

A rights-based approach provides the powerless with leverage to address the causes of food

Insecurity and poverty. It strengthens local communities to take care of their own members. Besides its market pull, organic agriculture upgrades traditional knowledge through interactive learning, strengthening farmers' analytical abilities and creativity. Organized rural community's stand-up frothier rights and extend entrepreneurial skills. In doing so, organic management revalorizes indigenous knowledge and community structures which have eroded for a variety of reasons (e.g. land alienation, population pressure, migration) and empowers social systems to control their own food supply. Furthermore, organic agriculture is in line with the right to adequate food that consumers demand.. The *Voluntary Guidelines for the Right to Food* (FAO, 2005) includes guidance for an enabling environment. They are used here to provide a basis

for analyzing compliance of organic agriculture with their recommendations. Democracy and governance in the food supply chain: organic agriculture encourages transparency through labeling, seeks compliance with social justice standards, empowers individual sand civil society and legally protects the organic claim. However, social justice standards remain those of the private sector and are not contemplated in government organic technical regulations. Economic development: organic agriculture is a feasible option for rural development, it invests in natural and human capital to improve livelihoods, provides fair return from labour

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CONCLUSIONS AND RECOMMENDATIONS

Organic food systems ought to be evaluated in a wide development context which includes the fact that agriculture has often had a detrimental impact on the environment (e.g. land degradation, water pollution, GHG emissions, biodiversity extinction and environmental services erosion) and on rural societies (e.g. disenfranchised farmers and discredited agri-culture and knowledge). Although organic agriculture is not a panacea and has its own limits in addressing challenges posed by modern lifestyle, its external environmental costs are much lower than those of conventional agriculture and, in some areas, it can reverse problems of natural degradation. Moreover, non-certified organic systems increase food availability and access exactly in those locations where poverty and hunger are most severe. Increased food performance in developing countries, through conversion of subsistence systems to organic management, is more than a serious proposition. The challenge is neither agronomic nor economic but socio-political.

Although there is still room for improving its performance, organic agriculture continues to

Provide alternative models (or better alternatives) for sustainable development:

- As a response to the pollution created by conventional agricultural production, organic farmers developed non-chemical ways to farm their land successfully;
- As a response to the lack of adequate technologies and technical advice, organic farmers became innovators and experts in adaptive management;
- As a response to institutional marginalization, organic communities came together to provide some risk-bearing economies of scale, thus creating self-reliant and vibrant rural economies;
- As a response to costly third-party certification, grower groups developed participatory

Guarantee systems to differentiate their products on local markets;

- As a response to long distance food procurement, organic entrepreneurs developed short supply chains;

REFERENCES

1. FAO. 2005. Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security. Adopted by the 127th Session of the FAO Council November 2004. Rome.FAO. 2006. Mid-Term Review of Achieving the World Food Summit Target. CFS: 2006/3. Rome.
2. FAO. 2006b. World Agriculture: Towards 2030/2050 – Interim Report. Global Perspective Studies Unit. Rome.
3. Organic Agriculture: Statistics and Emerging Trends2006", pp. 23-37, eds H. Willer and M. Yussefi (International Federation of Organic Agriculture Movements:Bonn, Germany & Research Institute of Organic Agriculture: Frick, Switzerland).
4. UNEP-UNCTAD, 2008. Organic Agriculture and Food Security in Africa (UNCTAD/DITC/TED/2007/15), available at http://www.unep-unctad. org/cbtf
5. www.fao.org

INFORMATION CONCEALING IN IMAGES: AN STEGANOGRAPHIC APPLICATION

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1.0 INTRODUCTION & BACKGROUND OF THE STUDY

The subject of steganography (also referred to as *stego* hereafter) has been brought into limelight by several intelligence agencies and the news media in recent times following some terrorist attacks around the globe. It has been alleged that these terrorists, apart from using state of the art communication technologies and media, are using cryptography as well as steganography to attain their objectives.

Despite the fact that steganography faces cynical comments by some people, it can however be put to good use. In order to maintain privacy most people prefer sending a letter in envelops instead of postcards. In a similar fashion, cryptography has aided people to turn intelligible data into gibberish data and thus disappoint the prying eyes of curious people. However, some countries disallow use of cryptography. Also, cryptographic text can easily be identified. Now, a businessman cannot protect his company's trade secrets; people cannot launch a campaign to oust an autocratic ruler; a spouse cannot inform the police of his/her partner's abusive activities, and so on. All these vulnerable groups of the society can probably consider 'stego' to be their savoir. A message, either encrypted or unencrypted, can be hidden in a computer image file (containing the picture of, for instance, an innocent 3 year old baby) and transmitted over the Internet, a CD or DVD, or any other medium. The image file eventually enables the deniability of the existence of any message to unauthorized bodies. Image files are not the only carriers. Other files such as sound files (.wav, .mp3), video files (.mpeg) can all be used to hide information. Information can also be hidden in intelligible text itself.

Due to the practical importance of *stego*, this study has targeted to explore the subject further and attempted to write an application that implements steganography empirically.

1.1 Objectives of the research

The major objective of the study is to carry out a brief but in-depth research on steganography. Based on the research findings, a steganographic application to hide data in a computer image file, as well as retrieve the hidden data from the image containing the hidden data will be developed and implemented. More emphasis would be given on the general usability of the computer program than on implementing a strong steganographic application.

It is expected that after successful completion of the proposed research, the developed application along with complete source code can/would be made available on the Internet for any interested user free of charge. The study has named the application *Stego Machine*.

1.2 Organization of the research

The research consists of seven (7) sections. Section 1 highlights the background and objectives of the research. Section 2 conducts a literature review on steganography. Section 3 outlines the requirements of the application to be developed. Section 4 presents the design of the application of *Stego Machine*. Section 5 works on the implementation of the proposed application. Section 6 deals with the testing of the application. Section 7 makes an evaluation of the application in light of the requirements outlined in section 3 followed by some concluding remarks.

1.3 Importance of the research issues

There are several reasons behind the decision of taking up the study of the said subject and attempting to write an application that implements steganography.

Most of the available steganographic programs lack usable interfaces, or contain too many bugs, or unavailability of a program for other operating systems. Although some of the commercial programs such as *Invisible Secrets* [7] are excellent, they are inoperable over non-Windows platforms. The proposed application in this study will take into account these shortcomings. Since it will be written in Java, operability over multiple operating systems and even over different hardware platforms would not be an issue.

The subject of *stego*, despite being such an empirically interesting and important topic, is not included in the syllabus of most Computer Science (CS) and related courses. An attempt to justify the practical implications of the said application would therefore be considered as an endeavour to raise the issue of including the subject in CS and/or related fields of studies.

The research will be invaluable to people in the field of information security (such as computer forensics), people from intelligence agencies (such as CIA, MI5), people who are looking for covert communication means to exchange information securely and safely, students wishing to pursue higher studies in the field of steganography, and so on.

1.4 Limitation of the research

The research would expectedly limit the number of readers as it requires them to have a sound knowledge of IT prior to reading the research findings and its practical implications. The coding part requiring knowledge of the Java programming language can be made available to readers with incompetence in Java upon request to enable them to have a smooth read.

2.0 LITERATURE REVIEW

This section presents an overview of steganography, stego methods, and steganalysis. The section avoids any discussion on cryptography - the dark cousin of stego. The section however initiates the discussion with a comparative overview of steganography and cryptography in a tabular form. Watermarking, a similar

kind of steganography process having a different intention , as well as image formats are also discussed.

Table 1 Cryptography and steganography compared

Attribute	Steganography	Cryptography
Objective of use	Hide data	Obfuscate data
Ease of detection	Should be hard to detect	Always detectable
Use	Terrorists, drug dealers, covert communication, espionage	E-commerce, ATM, digital cash, digital signature, terrorists, drug dealers, espionage
Source: Literature review		

2.1 Introduction to Steganography

The word *steganography* was derived from the Greek word *steganos,* which means covered or secret, and *graphy* means writing or drawing [2: 5]. Steganography is also called *stego* in short. It is also known as data hiding or information hiding. Modern day steganography can be defined as the hiding one message into another. The word steganography, unfortunately, could not yet admit itself to most English dictionaries. For example, the Microsoft® Office Word 2003 version does not have steganography in its dictionary.

The concept of steganography has existed for thousands of years. The Greek used to pass secret information by writing in wax-covered tablets: wax was first scraped off a tablet, the secret message was written on the tablet, and then the tablet was covered again with the wax (Kahn, 1967). Another technique was to shave a messenger's head, tattoo a massage or image on the bald head, and let hair grow again so that the tattoo could not be seen. Shaving the head again revealed the tattoo (Kahn, 1967). The use of invisible inks was also used extensively during the World War II. An innocent letter contained secret information written between the lines in invisible ink, made with lemon juice, milk, urine, or some other chemical compounds. The invisible secret message gets revealed when heated. During the same time, the Germans invented the microdot technology (Kahn, 1967). The microdots were photographs of the size of a printed period containing text, drawing, or photograph. Large amounts of information could be transmitted with this technology.

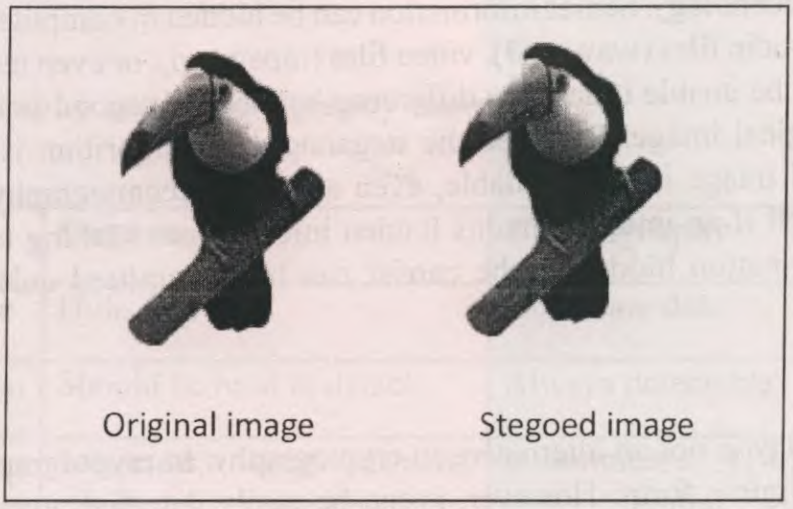
Computer technology and the Internet have made a breakthrough in the transmission of information. It has also opened a whole new way of applying steganography using computer technology. Secret information can be hidden in computer image files (jpeg, gif, bmp), audio files (wav, mp3), video files (mpeg, avi), or even text files. An average person will be unable to tell any difference between a stegoed image and the visibly similar original image. Provided the steganographic algorithm is good enough and the original image is not available, even an adept steganography expert would be unable to tell if an image contains hidden information. Making use of the Internet, secret information hidden in the carrier can be transmitted quickly, secretly, and securely.

Steganography is not an alternative to cryptography. In cryptography, data is turned into unintelligible form. However, it can be easily detected, even though the data itself cannot be turned into intelligible form easily without the encryption keys and the encryption algorithm. Cryptographic text easily raises suspicion that some secret information is being transmitted. Steganography, rather than obfuscating the data, *hides* the data itself. A message, encrypted and then stegoed, gives two layers of security instead of one. The sender can deny the transmission of any cryptographic text at all.

The practice of steganography is termed a dark art and illegal by some people. Allegations are made that stego, coupled with crypto, are the perfect technologies for terrorists exchanging information for planning activities similar to the 9/11 incident. It must be realized that technology can be used for both good and bad. Dynamites can be used to blow up buildings killing innocent people, or it can be used to blow up a wall to rescue someone trapped behind the wall. If steganography is illegal, so is an M-16 or AK-47.

The figure below shows three images. The image labeled *stegoed image* contains the *hidden image. Invisible Secrets 4* (NeoByte Solutions, 2004) was used to hide the hidden image with AES encryption algorithm and password "*@c3r$*"). It is impossible to tell the difference between the *original image* and the stegoed image by looking at the images.

Figure 1 Steganography using image



Hidden Image

2.2 Steganography using digital media

Data can be hidden in digital media in a number of ways. The techniques can be broken down mainly into the following:

2.2.1 Insertion-based

2.2.2 Substitution-based

2.2.3 Generation based

2.2.1 Insertion-based steganography

In this technique, data is inserted into another file. There are portions of a file those are ignored by the application. When data is inserted into these portions, it does not affect nor degrade the actual contents of the file; only the file size is increased. Some files have an EOF (end of file) marker. The application reading the file, when encounters this marker, steps reading any more data from the file, as it thinks it has reached the end of the file and there is no point trying to read any more. This can be exploited to hide data. Data is simply inserted into the file after

the EOF marker, and later can be easily retrieved. JPEG files have a EOF marker having the hex value *FFD9*. If data is inserted into the JPEG file after this marker, the file is not corrupted and behaved just like the original. The image in the file is also not even degraded. Only the file size is increased by the amount of data inserted into the image. An unlimited amount of data can be hidden this way. The insertion technique can also be used to hide data in text files. A tab character can be used to represent a binary 1, and a space character to represent a 0. These characters can be placed after the end of each line. Since these characters are invisible, unless the text application has options to show space and tab characters, they would fool anyone reading the text file.

This type of steganography is sometimes very easy to detect. The EOF technique can easily be detected: a hex editor can be used to open the file and see if there is any data after the EOF marker. This would require knowledge of the EOF marker for the particular file, as not all files use the same EOF value.

2.2.2 Substitution-based steganography

This is most common form of steganography. In this technique, the bits of the file are replaced by bits of the data to be hidden. Only the bits of the file should be replaced which would have minimum impact on the file. The choice of the file is also an issue. It is not feasible to replace the bits in a text file; a single bit replaced would change the original character. Files those are suitable for this type of steganography include image files, sound files, and video files. With this technique, there is a limit to the amount of data that can be hidden (Cole, 2003: 112).

Detecting this type of steganography depends on how and how many of the bits were replaced.

2.2.3 Generation-based steganography

This form of steganography is quite different from the previous two. A carrier file is not required to hide the data in. The data to be hidden is itself used to generate a file. The data to be hidden is fed into an algorithm which generates a file based on that data. The generated file might not be perfect. For instance, a steganography program that takes as input a text file and generate a WAV file of classical music as output will unlikely produce something perfectly harmonic.

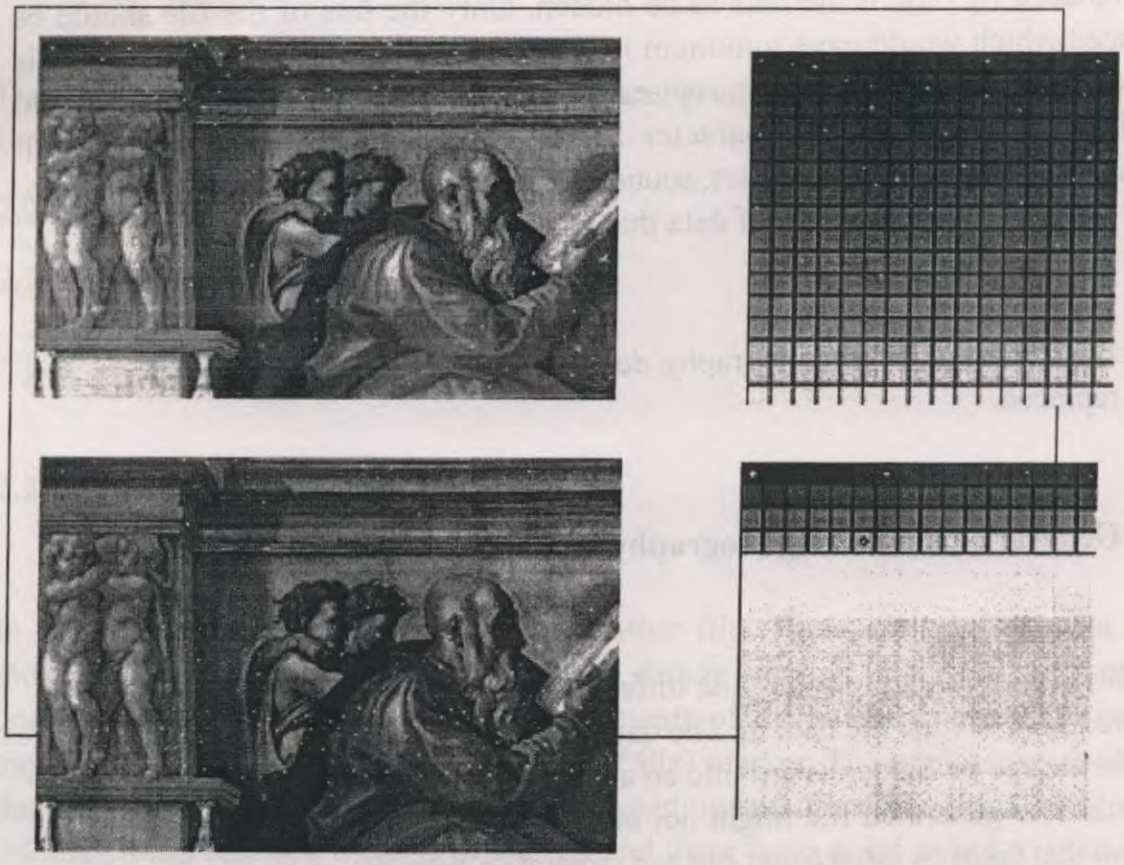
This type of steganography is hard to detect as there is no original file which it can be compared with. However this type of steganography can best be detected with human perception than with anything else.

2.3 Image formats

Graphics Interchange Format (GIF)

GIF was developed by CompuServe back in 1987 to display color images. It can display images containing from 2 colors up to 256 colors. Although present day computers can display millions of colors, graphics hardware back then could only display this amount of colors. Although GIF is not suitable for displaying color real world photographs for modern day video cards and monitors capable of displaying millions of colors, it is still excellent for graphics.

Figure 2 GIF images with corresponding color palettes of 256 and 64 colors



GIF uses a *lossless* compression scheme called LZW which accounts for its small size. It has a color table (palette) which can contain up to a maximum of 256 colors. Each pixel of the image maps to the color entries in this table. If the exact color is not in the table, the pixel points to the color with the closest match. Due to the color limitation, GIF can be very poor for displaying photographs; JPEG performs really well for photographs, and on most occasions, the ideal choice. Alongside JPEG, GIF is the most popular image formats on the Internet.

Joint Photographic Experts Group (JPEG)

The Joint Photographic Experts Group released the JPEG standard in the early 1990s to meet the needs for high quality image compression standards for the storage and transmission of real world photographic images.

The image standard makes use of human visual characteristics and advanced mathematics to deliver high quality photographic images. JPEG was developed with photographs in mind, hence the word *photographic* in its name. It can achieve very high levels of compression. It uses a *lossy* compression scheme, meaning some data of the image is lost due to the compression. Compression is achieved not using a single algorithm, like LZW in GIF, but a number of different compression schemes. JPEG is not suitable for graphics, only real world photographs. JPEG images have become one of the two most popular image formats on the Internet.

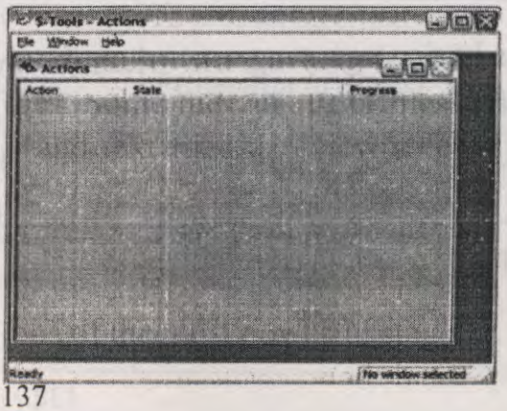
2.4 Stego software

There are as many as one hundred different stego software available. Most of them hide data in images, especially in GIF files. Some hide in JPEG files. There are also some available which hide in MP3 and text files. I review a few of them below.

S-Tools

S-tools is written by Andy Brown and is one of the most powerful stego programs available. It can hide data in GIF and BMP images, in WAV sound files, and even in the unallocated sectors of a disk. The software has options to encrypt the data before hiding it. The encryption algorithms available are IDEA, DES, Triple DES, MPJ2, and NSEA.

Figure 3 Screenshot of S-Tools 4.0

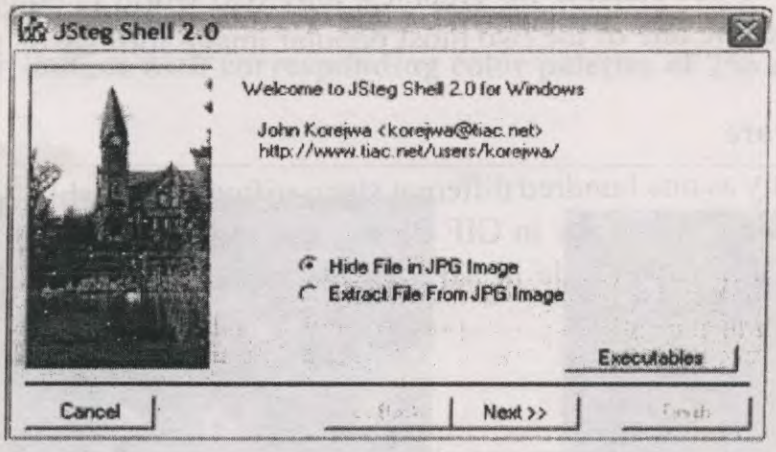


For BMP images, it hides by changing the least significant bits of the red, green and blue colors of the image pixels. For GIF images, the program first tries to reduce the number of colors of the image before substituting the least significant bits of the image pixels with those of the data to be hidden. The reduction process allows colors to be spread over several byte ranges so the shifts of the least significant bits cause little impact (Johnson and Jajodia, 1998).

JSteg

JSteg hides data in JPEG files. It provides a very easy to use wizard based user interface. It also has options to encrypt the data before hiding it in the image. There are also options to set the compression quality of the JPEG file, allow smoothing of DCT coefficients, grayscale output of the image, and optimization of the Huffman table.

Figure 4 Screenshot of JSteg Shell 2.0

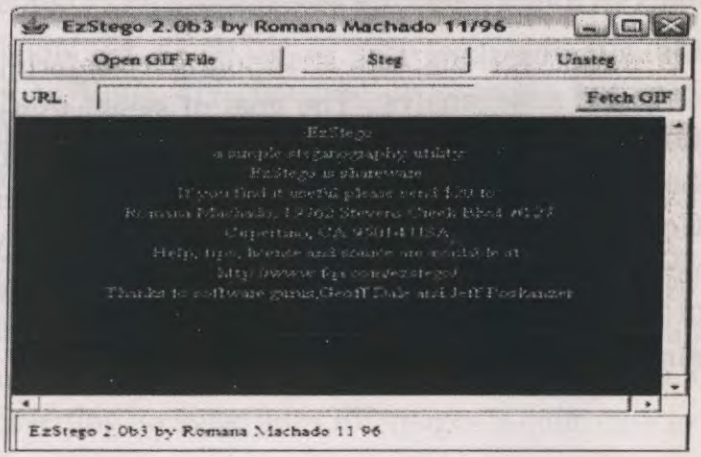


The data is hidden in the DCT coefficients of the JPEG image.

EzStego

EzStego is a basic stego program written in Java and hides data in the least significant bits of a GIF image. It is written by Romana Machado, who also wrote an earlier stego program named *Stego* (Wayner, 2002: 165). The program simply lets users hide data and extract the hidden data in GIF images. It does not have any password based security to protect the hidden data in it.

Figure 5 Screenshot of EzStego 2.0



The program first sorts the colors of the color palette of the GIF image so that all the 2^n colors of the n-bit image flow smoothly from one to another (Wayner, 2002: 165). The data to hide is then inserted in the least significant bits of the image.

2.5 Watermarking

The mounting use and business concerning the use of digital information, which are prone to effortless copying in most cases, has made it a necessity to find a way for copy protection. Embedding identifiable information to digital content, without degrading the information a lot, is called watermarking. Although it has quite a lot of resemblance with steganography, the objective is very different. With watermarking, it is not necessary to keep the existence of the identifiable information a secret. The table below compares steganography with watermarking.

Table 2 Steganography and watermarking compared

Attribute	Steganography	Watermarking
Ease of detection	Should be difficult to detect	Not required to be difficult
Amount of data	Maximum possible	Minimum possible
Ease of removal	Should be hard to remove	Should be hard to remove
Objective of use	To hide information	To protect information
Uses	Terrorists, drug dealers, covert communication, espionage	Protection of digital information by companies selling digital information
Goal of attacker	To detect and possibly recover the hidden information	To remove the hidden information

2.6 Steganalysis and attacks on steganography

Steganalysis is the breaking of a steganography algorithm, and the person who does this is called a steganalyst. The goal of steganalysis is quite different from cryptanalysis. The goal of cryptanalysis is to break an encrypted message to read it, while the goal of steganalysis is just to detect whether a message has hidden data in it (Cole, 2003: 188). If the message contains an encrypted message, breaking the encrypted data becomes the job of the cryptanalyst (Cole, 2003: 188). After the detection of the hidden data, the steganalyst may attempt to destroy it. Some of the attacks against steganography are discussed next:

File Only

The attacker has access to the file that might contain a hidden data. This is the weakest form of attack. Statistical analysis of the file could be done to attempt to find any hidden data (Cole, 2003: 10).

File and Original Copy

The attacker has access to the original file and the file containing hidden data (Cole, 2003: 10). This is the most powerful attack, as this only requires comparing the two files for file sizes, bits of the files, or computing the hash values of the two files. No steganographic technique is likely to withstand this attack.

Access to File and Algorithm

An ideal steganographic algorithm should withstand scrutiny even if the algorithm is known. However, simple steganographic algorithms that just hide and unhide cannot withstand this attack (Cole, 2003: 11).

Destroy everything attack

Steganography is vulnerable if the message containing the hidden data is itself destroyed. Cryptography is also vulnerable to this type of attack (Cole, 2003: 11).

Overwrite attack

The same could be used to overwrite the actual hidden data in a message (Cole, 2003: 11).

Reformat attack

The file is reformatted to some other format and converted back again. This is likely to destroy any hidden message because of the way different program convert formats (Cole, 2003: 12). A GIF file could be converted to JPEG format and back again to GIF. The lossy compression of the JPEG will likely to destroy the hidden data. Same applies for conversion of WAV to MP3 and back to WAV again.

2.7 Summing up

Steganography is a method to hide one message into another. The carrier message can be an image file, sound file, video file, or even plain text. The message that is to be hidden could be anything. By changing or inserting bits into the carrier message, another message can be hidden. Steganography can also be implemented by generating a message with the message to hide as input, such generations are not perfect.

Images are the most common carriers of hidden data, because images are so common and inserting hidden messages in images does not make any significant change in the image. The most common type of image for hiding is GIF images. GIF images are very common, and inserting message into GIF images is quite easy to implement.

Watermarking is a form of steganography mainly used for copy protection. Due to the large amount of transactions using digital content, digital content vendors require their products from being illegally copied and pirated. Watermarking is used to achieve this.

There are allegations that steganography is a dark art and mainly used by criminals and terrorists to carry out their destructive actions. While this is possible, the other side of the coin is often overlooked. Steganography is also a means for the weak and less powerful people to exchange or store information. Technology is for everyone.

3.0 SYSTEM REQUIREMENTS

The requirements of a software project can be defined as, according to Pressman (2000): "A complete understanding of the software development effort. No matter how well designed or well coded, a poorly analyzed and specified program will disappoint the user bring grief to the developer."

According to Somerville (1995): "System requirements should set out **what** the system should do rather than how this is done. A requirement may be a **functional requirement**, that is, it describes a system service or function. Alternatively, it may be a **non-functional requirement**. A non-functional requirement is a constraint placed on the system (for instance, the required response time) or on the development process (such as the use of a specific language standard)."

This section will discuss the functional and non-functional requirements of the application. The hardware and software requirements would also be discussed.

3.1 Functional and non-functional requirements

3.1.1 Functional requirements

Functional requirements are the functionalities and facilities the system has to offer to the user. The requirements should use non-technical terms and diagrams

easily comprehendible by everyone. It should avoid terms and complex diagrams that require expertise in certain areas. The functional requirements for the application, Stego Machine, are:

- A very usable and nice looking wizard based GUI for the system
- Ability to operate the system with no prior training and consultation of any help files, i.e. it should be possible to use the program successfully to accomplish a task in the first run
- Ability to hide data in GIF and JPEG images
- Ability to reveal the exact hidden data from GIF and JPEG images
- Ability to encrypt the data to be hidden in the images
- Ability to decrypt the encrypted retrieved hidden data from the images
- Ability to choose to hide data in the image with or without encrypting
- Ability to choose custom pass-phrase (a password that is not limited to a single word) to encrypt and decrypt data to be hidden in the image
- Ability to operate the application over different hardware and software platforms
- Ability to exit the application at any stage
- Ability to choose custom images to hide data
- Ability to both hide and unhide in images without restarting the application or starting a different application
- Ability to view the original image containing no hidden data and the image containing hidden data from inside the application
- Ability to choose the hiding method used to hide data in and reveal hidden data from images
- An image, after hiding the data, should not degrade in quality

3.1.2 Non-functional requirements

Non-functional requirements are those which are not directly related with the specific functions of the system. They relate to various *under the hood* properties such as reliability, stability, response time, etc of the system. Non-functional requirements are often more important than the functional requirements: *"While failure to meet an individual functional requirement may degrade the system, failure to meet a non-functional requirement may make the whole system unusable."* (Sommerville, 2001: 101) The non-functional requirements of the application, Stego Machine, are:

- **Implementation language:** As the application requires being operable over multiple platforms, the best choice would be Java. Java bytecodes are executable on any platform for which there is a JRE (or JVM) available. C#

or any other Microsoft .net aware language could be used instead, but the .net architecture and .net Runtime Environment is still in its infancy and not available for a wide range of platforms as JRE is.

- **Error prevention and correction**: The system should be able to capable of handling user input errors and informing users of any errors encountered in a language the user can easily comprehend. If any critical error occurs, the system should be able to recover from the error and continue, without crashing the system or requiring a restart.
- **Prevention of bugs and code bloat**: In order to prevent bugs and code bloat, well tested and reliable reusable library functions should be used as much as possible. This would also reduce development time and prevent *reinventing the wheel*.
- **Consistency:** The system must be consistent. It should not have any erratic behavior during operation.
- **Prevention of the detection of hidden data:** In order to prevent the detection of hidden data in the image, an algorithm should be used to insert hidden data in the image so that image is not degraded and detection of the presence of hidden data is difficult for a steganalyst.

3.2 Hardware and software requirements

As the steganographic application is to be implemented using Java, which promises *write once run anywhere*, the application's hardware and software requirements are very flexible. It can be run on any combination of hardware and software platform as long as it has a Java Runtime Environment version 1.4.

Table 3 Hardware and software requirements at a glance

Hardware requirements	Software requirements
In order to run the application any hardware platform capable of running JRE version 1.4 is suitable.	In order to run the application, the following software is required: o J2SE (Java 2 Standard Edition) Runtime Environment, version 1.4 o Any operating system capable of running the above software
The application would be developed using the following hardware: o Intel® Pentium® II 400 MHz o 256 MB RAM	The application was developed using the following software: o J2SE (Java 2 Standard Edition) SDK (Software Development Kit), version 1.4.2_04 o Microsoft® Windows® Server 2003, Enterprise Edition

3.3 Software process model

"A software process model is an abstract representation of a software process." (Sommerville, 2001: 44) The software process model chosen for the development of this system was the ***waterfall model.*** Although the model is the oldest and the most widely used, it has its shortcomings. Each phase cannot be started until the previous phase has been completed. Using the model, it is also not possible to make changes to previous phases and do an iterative development of the system. However, the system to be designed has gone through a reasonable amount of feasibility study, has no obscure specifications that would not be possible to design and implement. Hence the mentioned model would be used.

3.4 User interface

The user interface is the interpreter of the user with the underlying code. No matter how robust the underlying code is, a badly designed user interface is likely to increase users' time to learn to use the system, introduce too many operational errors, frustrate the user, and waste the users' valuable time.

Sommerville (2001:330) gives a description of user interface design principles under the headings: *user familiarity* (the interface should use terms and concepts which the targeted users are able to comprehend), *consistency* (the interface should let the user perform different but comparable tasks always in the same way),*minimal surprise* (the user should not be surprised by any unpredictable action), *recoverability* (the interface should enable users to recover from any error), *user guidance* (the interface should provide the user with helpful feedbacks when anything wrong happens), and *user diversity* (the interface should take into account the different types of users interaction with the system).

The interface of this project is one of the most important factors. One of the functional requirements is to make it possible for any user to get a task successfully done with the first run. The best way to accomplish this would be to make use of a wizard based interface that would guide the user from start to finish.

4.0 DESIGN

This section focuses on the design of the system. This phase would take as inputs the functional and non-functional requirements of the requirements phase and output an abstract representation of the software system that is to be implemented.

The design would be mainly concerned with the algorithms for hiding data in the image, retrieving the hidden data from the image, and designing the user interface of Stego Machine.

4.1 Hiding the data in images

4.1.1 Hiding using least significant bit method

Data can be hidden in images in a number of ways. The most common method is the least significant bit method. The method works for GIF and BMP images only. For Stego Machine, this method would be used to hide data in GIF images. BMP images are too large and are not very popular on the Internet.

A GIF image would be read, and the pixel data of the image would be stored in an array. A pixel contains the values of alpha, red, green and blue values of that pixel as a 32 bit binary number. The first 8 bits are the values for alpha, next 8 for red, next 8 for green and the final 8 for blue. The alpha value determines the opacity or transparency of the pixel. Almost all images have an alpha value of either 255 (11111111 in binary) for complete opacity or 0 (00000000 in binary) for complete transparency. Inserting into the least significant bits of the alpha values would make no visual degradation of the image, but the analysis of the alpha values would very easily reveal that the image contains hidden data. The scope of insertion narrows down to the red, blue, and green values only. Changing the bits of these values might change the colors for some images; however, detection of hidden data using analysis of the bits would be much more difficult.

In order to make the detection of hidden message in the image difficult, and degrading the image quality, only the least significant 1 bit of the colors would be used to hide the data in an alternating fashion. The use of 1 bit only would restrict the message that can be hidden in the image to the number of pixel bits. Below is a figure of the process of hiding 8 bits (1 byte) of the data in 8 pixels of the image:

Figure 7 Hiding bits for Stego Machine

Bits of the data to be hidden: **10100101**.....

pixels	hide bit	modify	modified color	red	green	blue
p1	1	red	10111101	10111101	10101100	11110101
p2	0	green	10111100	10110101	10000101	10111010
p3	1	blue	00101011	10101000	1011000	00101010
p4	0	red	11111100	11111100	10000001	01010010
p5	0	green	11110100	00110101	11110101	00000011
p6	1	blue	01111011	11001010	00000000	01111010
p7	0	red	11010110	11010111	00101011	11111110
p8	1	green	11010101	11111111	11010101	10101011

Red font color means the least significant bit was changed by the hiding the hide bit in that color, green means the least significant bit was not changed

All the data bits would be hidden in the image likewise. After hiding all the bits of the data in the image, an end of hidden data marker would be used, so that it is possible to retrieve the hidden data when attempting to extract the hidden data from the image. 2 bytes, i.e. 16 bits would be used for marker. The first byte of the marker would be the hex value *FA*, and the next byte would be calculated using the number of pixels in the image. It is likely that fake markers would occur before the actual markers. Using the second byte based on the number of pixels would reduce the change of reading fake markers. The second byte would be calculated using a cosine function, because cosine always returns a fixed value of -1 to 1 for any input. The calculation is shown below:

Table 4 Calculation of the second byte of the end of data marker

Pixels in image = 42000
cos 4200 = -0.5

abs (-0.5) = 0.5

0.5 * 100 = 50

Hex value for the second marker = 32

The calculation would always produce results from 0 to 100 (0 to 64 in hex) for any value of pixels in an image, this is well within the range of the maximum value an unsigned byte can hold, which is 255 (FF in hex).

Therefore the maximum amount of data an image would be able to hide is:

[(Number of pixels in image / 8) – 2] bytes

The subtraction 2 bytes accounts for the 2 bytes used for the end of data markers. This would be calculated first before inserting the message in the image.

After inserting the bits of the data in the image, the image would be written back to disk.

Retrieving the hidden data from the image would be done reading the image and storing the image pixels in an array. The least significant bits of the colors of the image would be read in the same order they were written, i.e. for first pixel, LSB of red, for second, LSB of green, and so on. The bits would be read in groups of 8 bits until all the pixels have been dealt with. The extracted bits would be written to a temporary file and the data up to the end of data marker would be read from it and written to another file, this file is the actual data hidden inside the image.

4.1.2 Hiding using end of file method

In this method, the insertion technique after the EOF marker of the image would be employed. This method would be used to hide data in both GIF and JPEG images. For this method, there would be no restriction for the number of bytes that can be hidden.

JPEG images have an EOF marker of two bytes having the hex values *FF D9,* and GIF images have a value of *00 B3.* In order to hide a message, the data that is to be hidden would be written after the EOF markers. A fake appropriate EOF marker for the image would be added at the end of the hidden message to fool any steganalyst. The steganalyst would not suspect the image ending with the usual EOF marker.

Retrieving the hidden data from the image would be done by searching for the fist original EOF marker for that image, the data after that would be copied in a different file until the fake EOF is encountered at the end of the file.

4.1.3 Reducing the amount of data to hide

It is important that as less information is hidden in the image as possible. Hiding using the LSB method restricts the amount of data that can be hidden. Also inserting too much data using the EOF method will raise suspicion for unusual file size. In order to achieve this, the data that is to be hidden would be compressed before hiding it in the image using ZIP compression. Using ZIP compression would also retain the filenames of the files to hide, thus fulfilling one of the functional requirements.

4.2 Providing security for the hidden data

Hiding the data in the images merely hides the data. Anyone can use the program to retrieve the hidden data from the image. The message would be encrypted using

a secure cryptographic algorithm before hiding it in the image. The user would be able to choose whether to encrypt the hidden data using a passphrase.

If encryption is used, it would be done after the message to be hidden is compressed using ZIP. The reason being encrypted text is random, and so the encrypted text would not be highly compressible, defeating the purpose of the compression functionality of the system. Another reason is a ZIP file is easily recognizable, as it have identifiable headers and EOF markers. Encryption would turn this into random garbage text which would not be easy to detect.

Figure 8 Stego system of Stego Machine

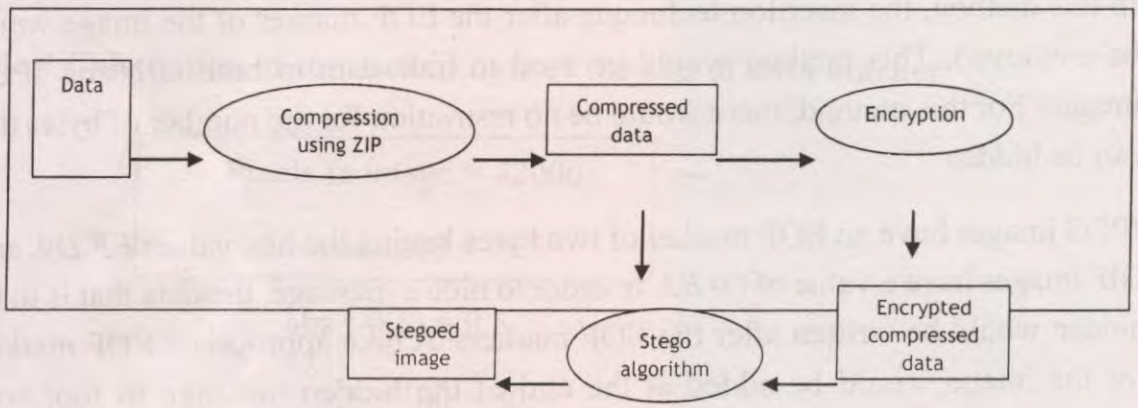
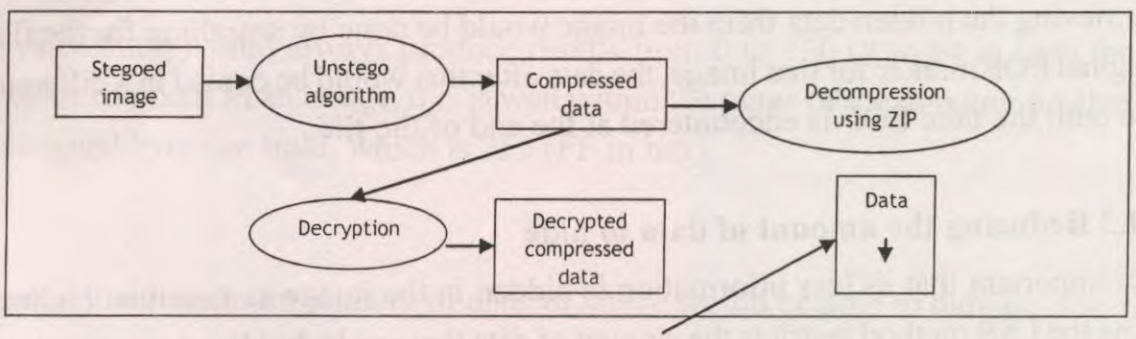
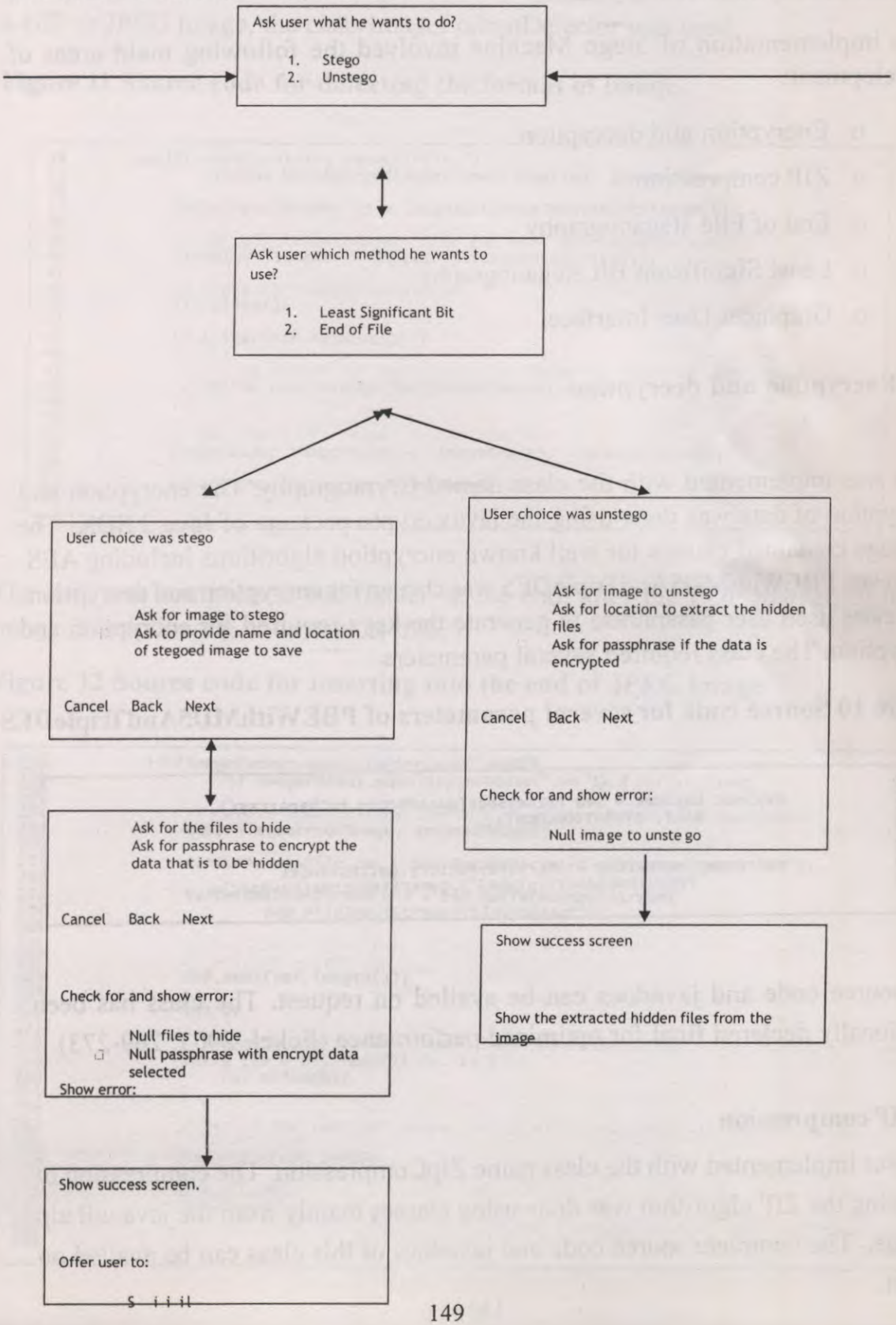


Figure 9 Unstego system of Stego Machine



4.3 User interface

The user interface of the system would be wizard based. The wizard will guide the user from start to finish of stegoing and unstegoing an image. The figure shows how the user interface should work:



5.0 IMPLEMENTATION

This chapter describes the implementation phase of the project. The design of Stego Machine has been completed in the previous phase. The input from the previous phase will be used to implement the actual system.

The coding style used for the coding part fully conforms to the coding guide lines [9] set forth by Sun Microsystems.

The implementation of Stego Machine involved the following main areas of development:

- Encryption and decryption
- ZIP compression
- End of File steganography
- Least Significant Bit steganography
- Graphical User Interface

5.1 Encryption and decryption

This was implemented with the class named Cryptography. The encryption and decryption of data was done using the javax.crypto package of Java 2 SDK. The package contained classes for well known encryption algorithms including AES. However, PBEWithMD5AndTripleDES was chosen for encryption and decryption. The class used user passphrase to generate the keys required for encryption and decryption. The class required several parameters.

Figure 10 Source code for several parameters of PBEWithMD5AndTripleDES

```
59          // generate the key
60          KeySpec keySpec = new PBEKeySpec(passPhrase.toCharArray(),
61                  SALT, ITERATIONCOUNT);
62
63          // use the
64          SecretKey secretKey = SecretKeyFactory.getInstance(
65                  "PBEWithMD5AndTripleDES").generateSecret(keySpec);
```

The source code and javadocs can be availed on request. The class has been intentionally declared final for optimized performance (Eckel, 2003: 269-273).

5.2 ZIP compression

This was implemented with the class name ZipCompression. The compression of data using the ZIP algorithm was done using classes mainly from the java.util.zip package. The complete source code and javadocs of this class can be availed on request.

5.3 End of File Steganography

This was implemented using the class EndOfFileStego. A message was hidden in either a GIF or JPEG file. In order to test if the image to hide the data in was really a GIF or JPEG image, the class ImageFormatDetector was used.

Figure 11 Source code for detecting the format of image

```
34      public static String detect(File f)
35              throws UnsupportedImageFormatException, IOException {
36
37          ImageInputStream iis = ImageIO.createImageInputStream(f);
38
39          // get all image readers that can read the image format
40          Iterator iterator = ImageIO.getImageReaders(iis);
41
42          // close the imageInputStream
43          iis.close();
44
45          if (!iterator.hasNext()) {
46
47              // no reader has been found for decoding (reading) the image
48              throw new UnsupportedImageFormatException();
49          }
50
51          // get the first reader in the iterator
52          ImageReader imageReader = (ImageReader) iterator.next();
53
54          return imageReader.getFormatName();
55      }
```

The data was compressed and hidden at the end, after the EOF marker, of the image. The following code depicts this.

Figure 12 Source code for inserting into the end of JPEG image

```
195         if (imageFormat.equalsIgnoreCase("JPEG")
196                 || imageFormat.equalsIgnoreCase("JPG")) {
197
198             // create and copy the contents of carrierImage to stegoedImage
199             copyFile(carrierImage, stegoedImage);
200
201             RandomAccessFile raf = new RandomAccessFile(stegoedImage, "rw");
202
203             BufferedInputStream bis = new BufferedInputStream(
204                     new FileInputStream(fileToInsert));
205
206             // set the file pointer to write data at the end of file so that data is
207             // written at the end
208             raf.seek(raf.length());
209
210             int b;
211
212             // transfer data to the image from the file to hide
213             while ((b = bis.read()) != -1) {
214                 raf.write(b);
215             }
216
217             // write the fake EOF marker for a JPEG image which is the hex value
218             // 0xFF 0xD9
219             raf.write(EOF_JPEG);
220
221             bis.close();
222             raf.close();
223
224         }
```

Figure 14 Source code for calculating EOF characters

```
506     /// generates EOF characters based on image height and width
507     private void generateEOF() {
508
509         // the first byte of the EOF
510         byte eofA = (byte) 0xFA;
511
512         // calculate a value between 0 and 1, both inclusive
513         double d = Math.abs(Math.cos(imageHeight * imageWidth));
514
515         d *= 100;                    // make d 2 digits long, 3 if 100
516         d = Math.floor(d);           // get only the integer part of d (d becomes 0 - 99)
517
518
519         byte eofB = (byte) d;
520
521         EOF[0] = eofA;
522         EOF[1] = eofB;
523     }
```

The code for hiding the bits of the data in the image is too big to reproduce here. Readers may get access to this code on request. The code however is extremely well documented and should be self explanatory.

This class made use of a third party GIF encoder named Gif89Encoder obtained from http://www.jmge.net/java/gifenc/. The encoder is in the package net.jmge.gif. Java does not provide any class to write GIF files. Hence use of the third party encoder was done. Although the package contains many functions, only the *write gif to disk from an Image object* was used. Due to the enormous size of the package, it was not included in the appendix. However, a soft copy has been included with the source files of this project.

5.5 Graphical User Interface

The graphical user interface was implemented with the class StegoMachine. This class also contains the main method. The wizard based interface is implemented using the CardLayout manager. The source code is extremely well documented and can be accessed on request.

6.0 TESTING

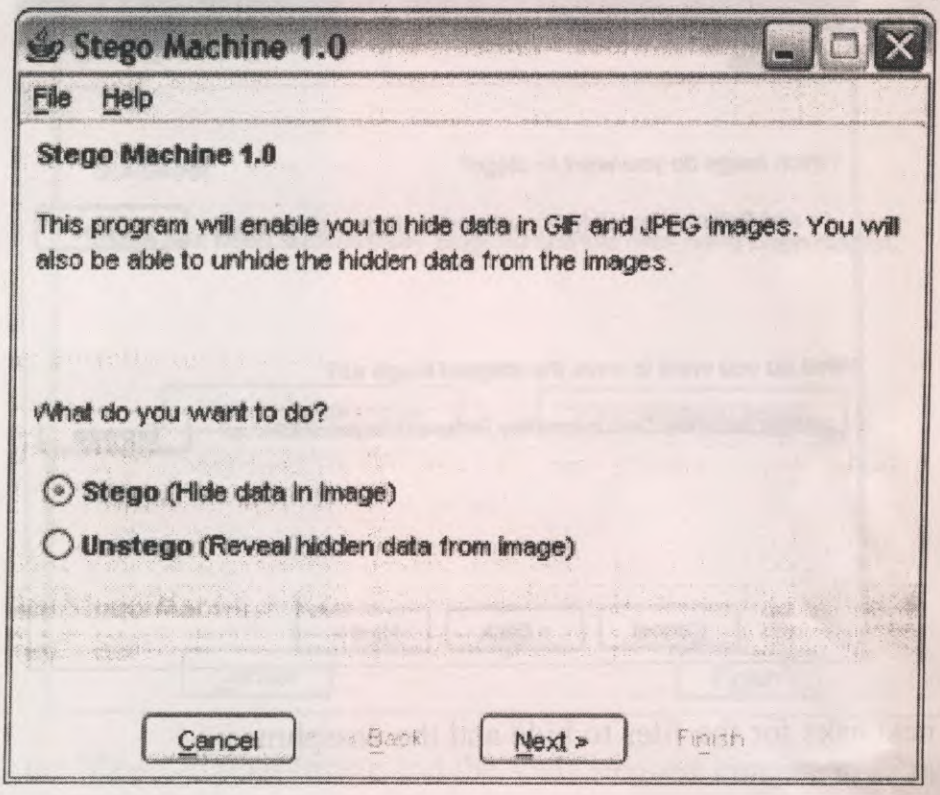
Testing is an absolutely essential for a system before being released. Testing falls into two categories. One is verification, the other validation. Verification is concerned with meeting the expectation of the customer, while verification is concerned with the ways a system is supposed to work (Sommerville, 1995).

This section documents the behabior of the system during the testing phase. Both the functional and non-functional requirements are tested.

6.1 Testing functional requirements

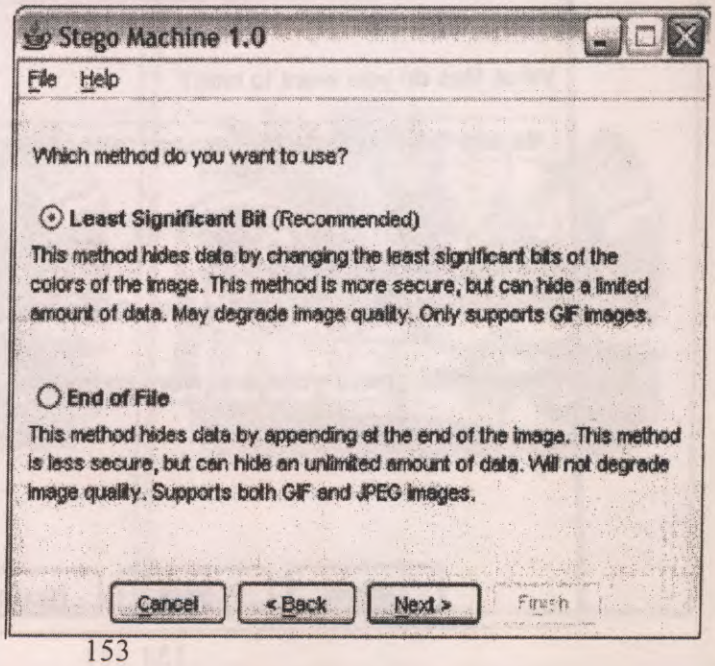
6.1.1 Testing stego

Figure 15 The opening screen of Stego Machine



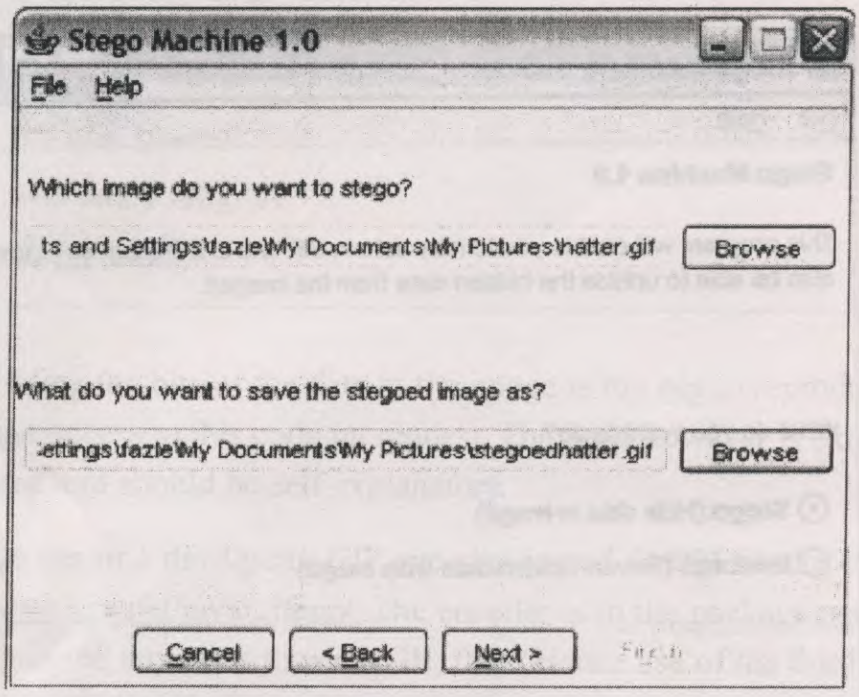
This is the opening screen of the application. Clicking the Cancel button exits the application. Clicking Next moves it to the next screen below asking the user for the stego method:

Figure 16 The second screen



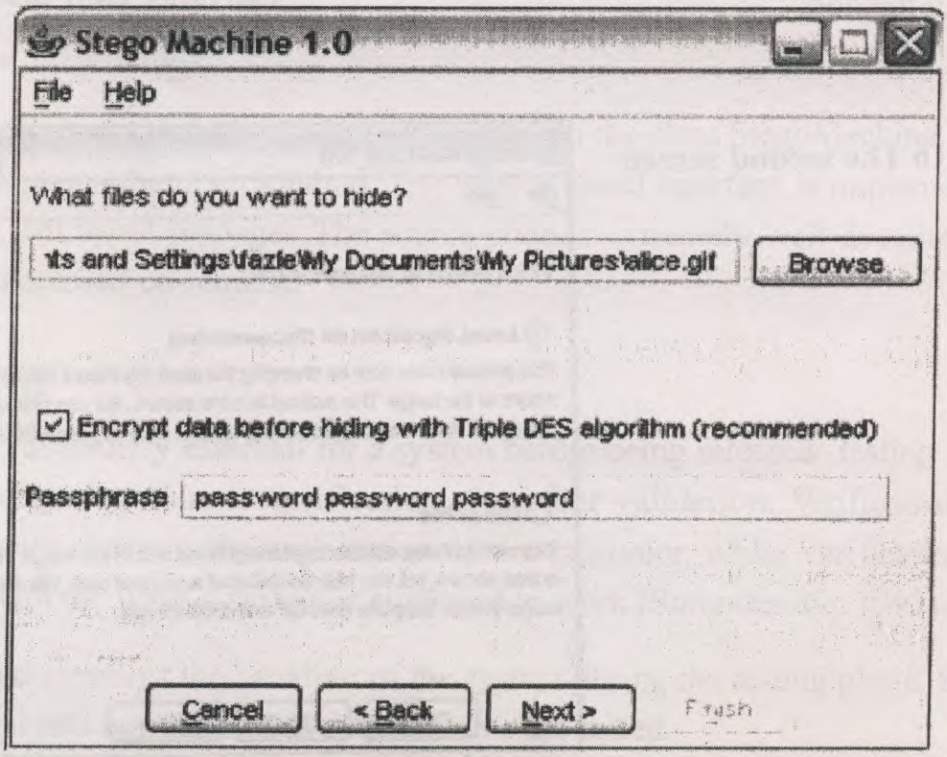
Clicking next moves it to the next screen asking the user for the file to stego and the name of the stegoed output image:

Figure 17 The third stego screen



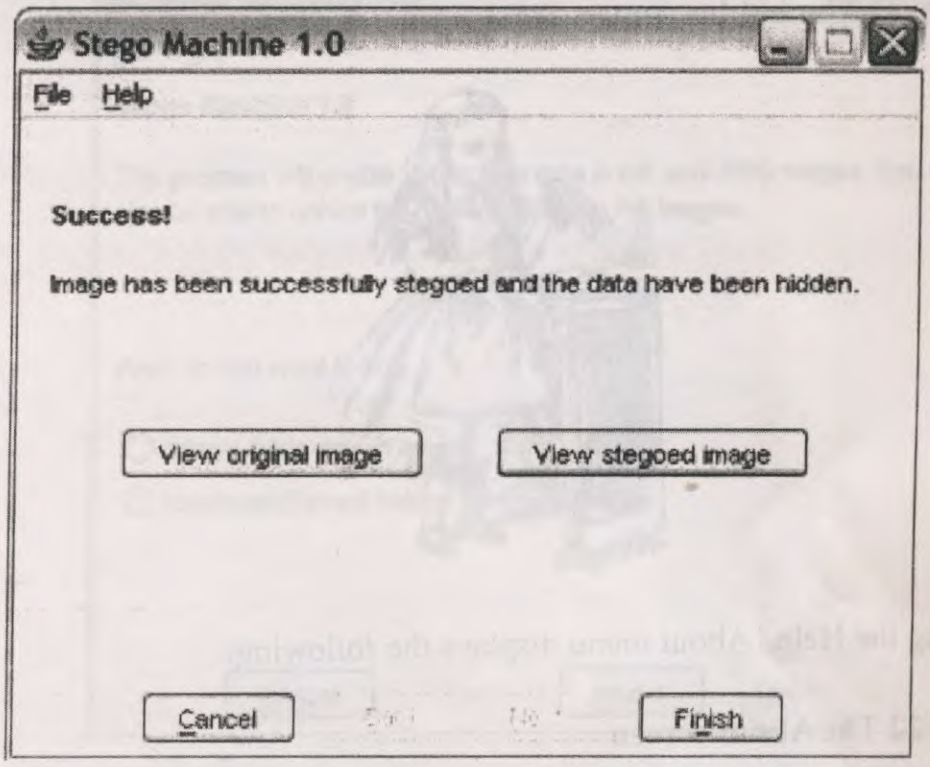
Clicking next asks for the files to hide and the passphrase:

Figure 18 The fourth stego screen



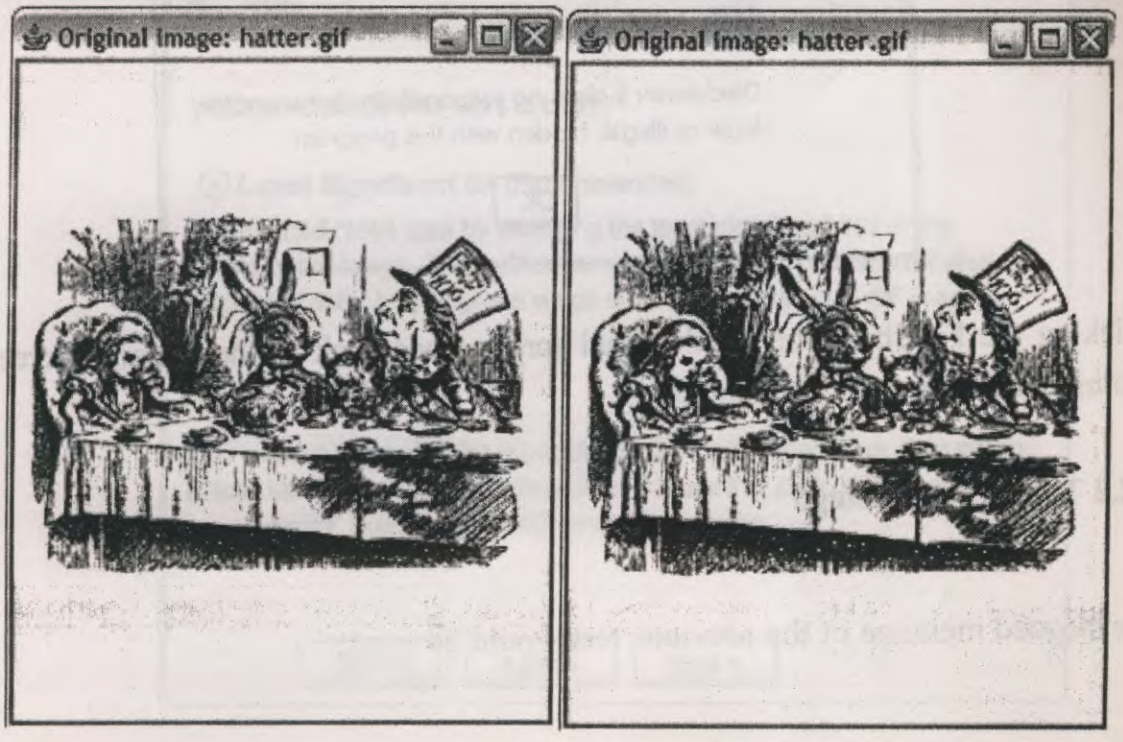
Clicking Next goes on to stego the image and show the success screen:

Figure 19 The final screen



Clicking the View Original Image and the View stegoed image shows the following:

Figure 20 The stegoed image and the original

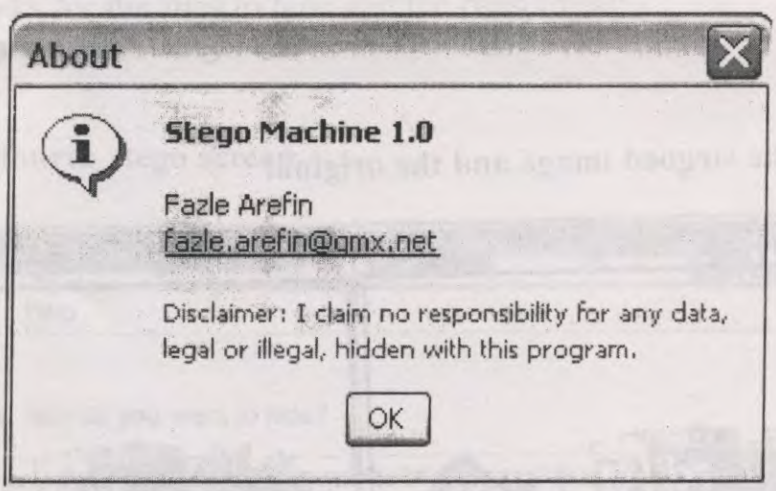


This is the image that was hidden in the hatter.gif image:

Figure 21 The hidden image

Clicking the Help | About menu displays the following:

Figure 22 The About screen



Clicking the Finish button on the final screen goes back to the opening screen prompting the user for another run.

6.2.2 Testing for unstego

The stegoed message of the previous test would be used.

Figure 23 Main screen

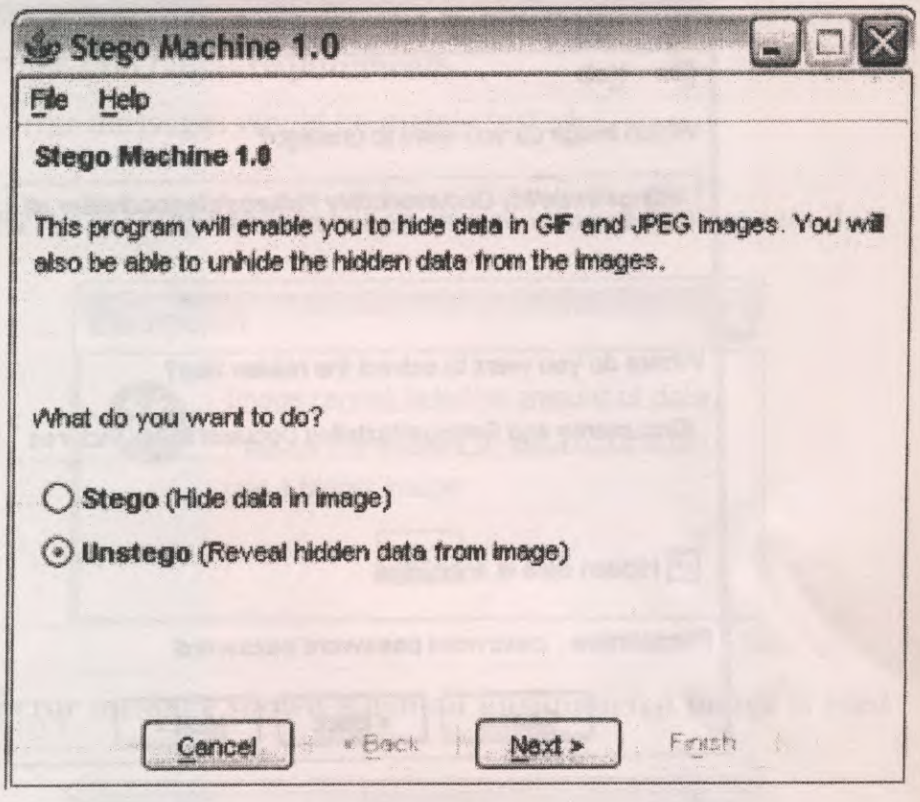


Figure 24 Screen 2

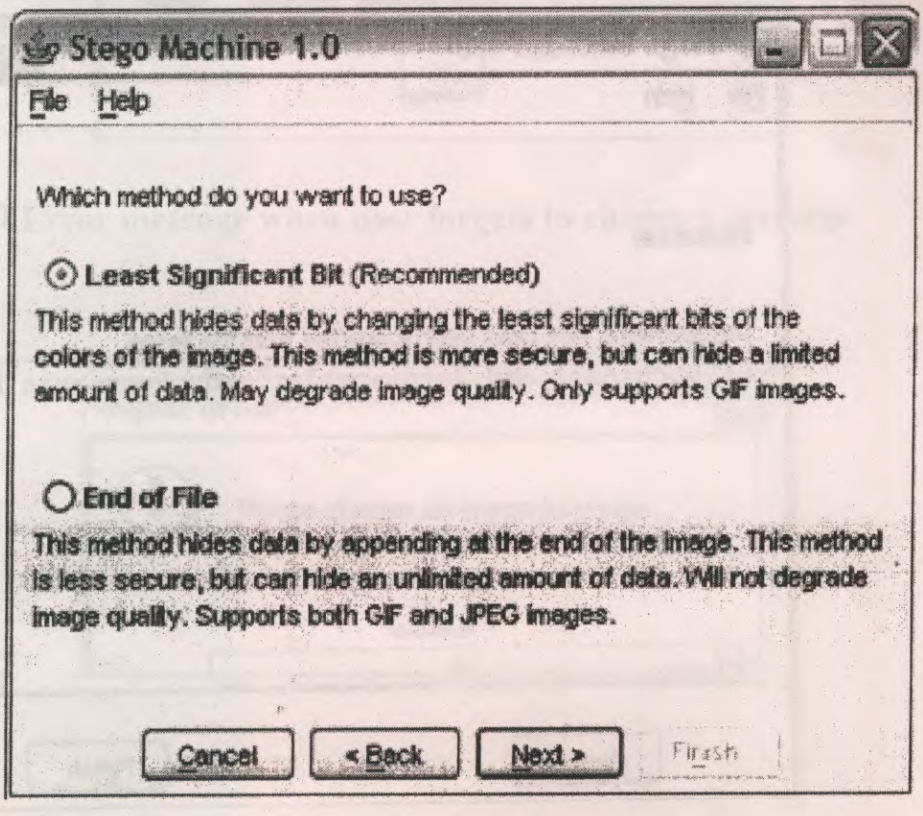


Figure 25 Screen 3

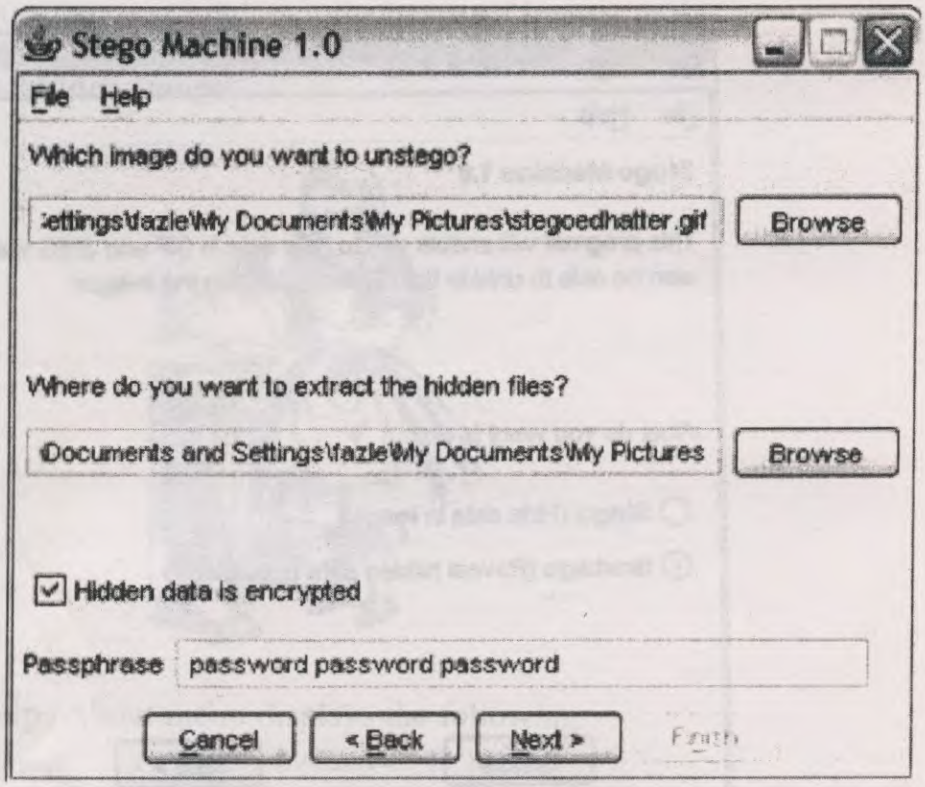
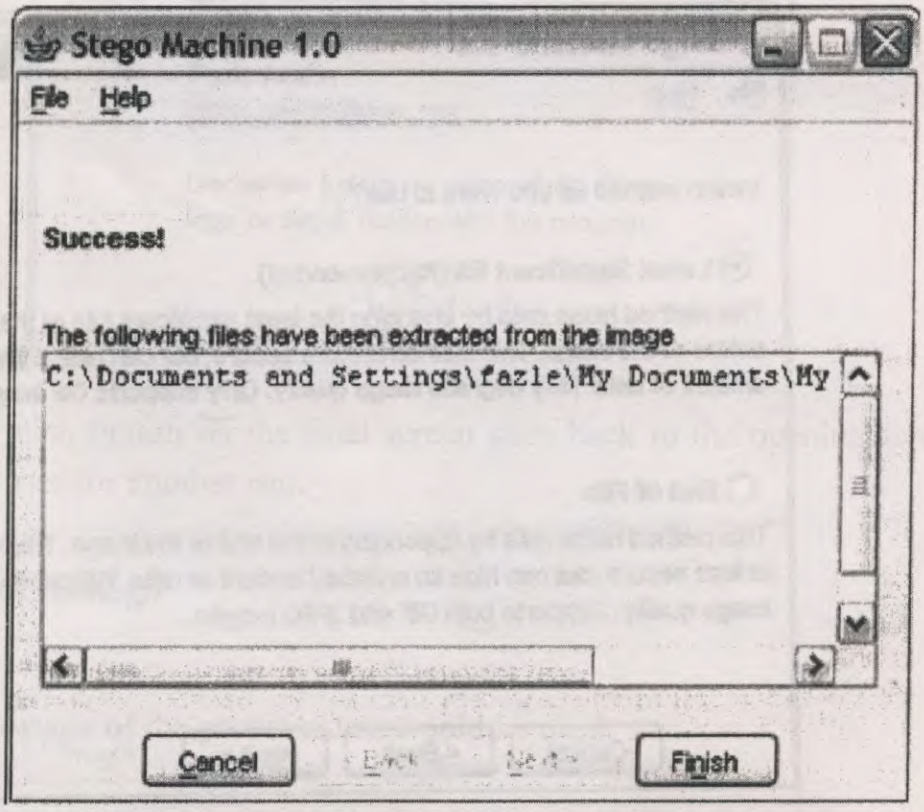


Figure 26 Final screen showing success



6.2 Testing non-functional requirements

In this test, error messages would be mainly tested:

Figure 27 Error message shown when image cannot hide excess data

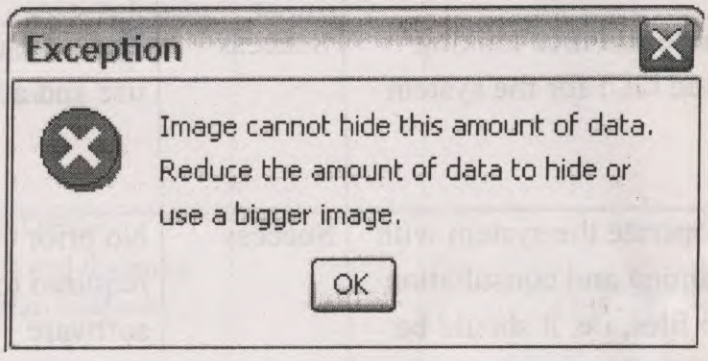


Figure 28 Error message shown when an unsupported image is used

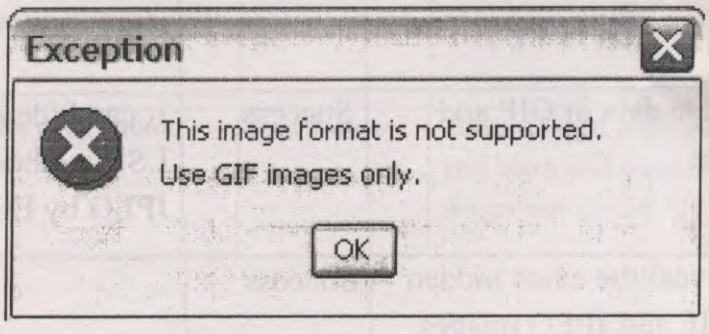
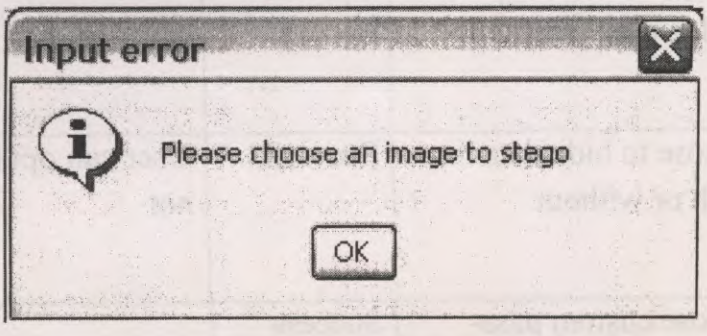


Figure 29 Error message when user forgets to choose a message



7.0 EVALUATION AND FINDINGS OF THE STUDY

This section documents the results of evaluating the system. All the requirements specified in section 3 are evaluated:

7.2 Functional requirements evaluation

Requirement	Result	Comment
A very usable and nice looking wizard based GUI for the system	Success	The GUI is very easy to use and attractive
Ability to operate the system with no prior training and consultation of any help files, i.e. it should be possible to use the program successfully to accomplish a task in the first run	Success	No prior experience is required to use the software
Ability to hide data in GIF and JPEG images	Success	It can hide data in GIF by LSB method; in GIF and JPEG by EOF method
Ability to reveal the exact hidden data from GIF and JPEG images	Success	
Ability to encrypt the data to be hidden in the images	Success	
Ability to decrypt the encrypted retrieved hidden data from the images	Success	
Ability to choose to hide data in the image with or without encrypting	Success	User can opt to decrypt or not
Ability to choose custom pass-phrase (a password that is not limited to a single word) to encrypt and decrypt data to be hidden in the image	Success	

Ability to operate the application over different hardware and software platforms	Part success	Due to time limitations, the software was only tested on Linux
Ability to exit the application at any stage	Success	Cancel or close button can be pressed
Ability to choose custom images to hide data	Success	
Ability to both hide and unhide in images without restarting the application or starting a different application	Success	
Ability to view the original image containing no hidden data and the image containing hidden data from inside the application	Success	
Ability to choose the hiding method used to hide data in and reveal hidden data from images	Success	LSB or EOF method can be chosen
An image, after hiding the data, should not degrade in quality	Part success	Some images, especially grayscale and black and white, sometimes degrade in quality

7.3 Non functional requirements evaluation

Requirement	Result	Comment
Implementation language	Part success	Application could not be tested on every platform
Error prevention and correction	Success	All errors were handled and the application never crashed
Prevention of bugs and code bloat	Success	Code size was reasonable
Consistency	Success	
Prevention of the detection of hidden data	Undetermined	An expert steganalyst is required for this

The study was initially concerned with a brief research into steganography. Based on the research findings, it was required to develop an application which would be able to hide data into images. The developed application appears to be up to the expectations as it has fulfilled almost all the requirements. However, the efficiency of the proposed application, especially the encoding and decoding tasks, could be increased if a c/ assembly code version of the system could be implemented.

The application can be made richer in contents in futures. This can be *proposed* to be done in the following ways:

- By enhancement of the algorithm that will utilize the entire image for embedding the message. It will allow user to analyze the processing time to generate the random number and introduce method(s) to minimize the time.
- By adding new techniques of hiding.
- By increasing the carrier file.
- By adding color management features.

Finally, instead of the Java platform, the steganographic application can be developed in future by using a c/assembly code version of the system, which, however was not possible in this study due to time and resource constraints.

BIBLIOGRAPHY

1. Wayner P: *Disappearing Cryptography, Information Hiding: Steganography and Watermarking (2nd edition),* Morgan Kaufmann Publishers, 2002.

2. Cole E: *Hiding in Plain Sight: Steganography and the Art of Covert Communication,* Wiley Publishing, Inc., 2003.

3. Schneier B: *Applied Cryptography (2nd edition),* John Wiley and Sons, Inc., 1996.

4. Kahn D: *The Codebreakers: The Story of Secret Writing,* Macmillan Publishing Co., 1967.

5. Eckel B: *Thinking in Java (3rd edition),* Prentice Hall PTR, 2003.

6. Johnson N F, Jajodia S: *Steganography: Seeing the Unseen,* February 1998, URL: http://www.jjtc.com/pub/r2026.pdf [Accessed May 4, 2004]

7. NeoByte Solutions: *Invisible Secrets 4,* 2004, URL: http://www.invisiblesecrets.com/ (Accessed May 4, 2004)

8. Provos N, Honeyman P: *Hide and Seek: An Introduction to Steganography,* May/June 2003, URL: http://www.citi.umich.edu/u/provos/papers/practical.pdf (Accessed May 4, 2004)

9. Sun Microsystems, Inc.: *Code Conventions for the Java Programming Language,* April 1999, URL: http://java.sun.com/docs/codeconv/html/CodeConvTOC.doc.html (Accessed May 4, 2004)

10. Pressman R S: *Software Engineering: A Practitioner's Approach (5th edition),* McGraw-Hill, 2000.

11. Sommerville I: *Software Engineering (5th edition),* Addison Wesley, 1995.

12. Sommerville I: *Software Engineering (6th edition)*, Pearson Education Ltd., 2001.

13. RSA Laboratories: *RSA Laboratories' Frequently Asked Questions About Today's Cryptography, Version 4.1,* RSA Security Inc., 2000.

14. Menezes A J et al: *Handbook of Applied Cryptography*, CRC Press, 1996.

15. PGP Corporation: *PGP Version 8.0.3, 2003,* URL: http://www.pgp.com (Accessed May 1, 2004)

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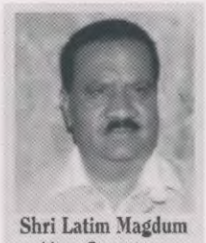

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