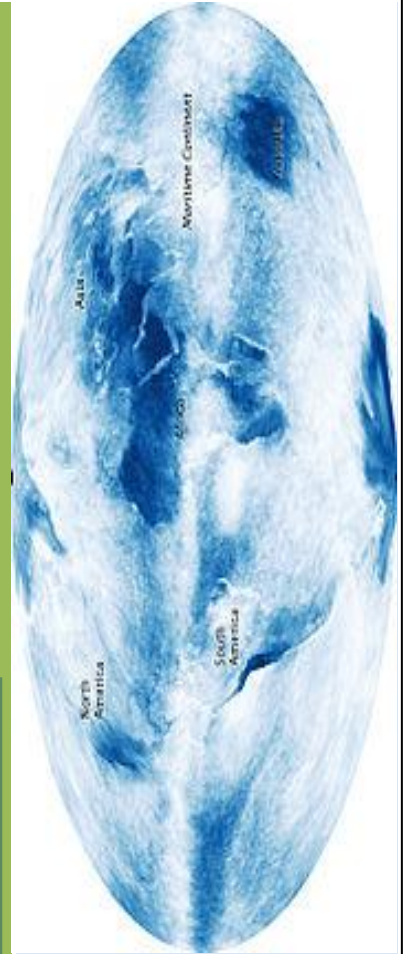


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From the Desk of Editor...

It is a matter of immense pleasure to congratulate the editorial Board for bringing out the January 2012 issue successfully. I am especially thankful to **Dr. Saroj Kumar Dash** for designing the journal. It would be appropriate to extend my congratulation to the contributors. Out of the total number of 40 Research papers, we received; only 15 have been approved by the Reviewer committee for publication. Those who could not find place, still have our good wishes for their excellent future endeavor. Please be assured all that our forthcoming issue will be having double blind fold reviewed papers.

With best wishes.

Prof. Nisha Singh

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ROLE OF INFORMATION TECHNOLOGY IN VENDOR MANAGED INVENTORY

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Abstract

Technology plays a vital role in competitive market scenario of today's world. Various domains of supply chain management e.g.; Vendor Managed Inventory (VMI), Continuous Replenishment Programs (CRP), Every Day Low Pricing (EDLP), Activity Based Costing (ABC) etc. emerged in the recent competitive global market. As the information is the key of success for any business activity, advances in information technology has a great impact on the supply chain. Due to this technological advancement, optimization of chain wide performance takes place. This paper describes the types of information shared and its effectiveness in Vendor Managed Inventory. We discuss how this information technology plays a significant and decisive role in application of Vendor Managed Inventory. We also discuss how much this information flow makes the chain transparent and beneficial for the partners in supply chain.

Introduction

In Supply chain Management, the focal point of analysis is changed from a business unit e.g.; a plant or a warehouse, to a supply chain i.e.; part suppliers (vendors), manufacturers, distributors, logistics service providers, wholesalers and retailers. The integration and optimization of three links (material, information and retailers) flows in the supply chain form the core concern of supply chain management. It suggests extensive coordination among multiple functions and independent companies engaged in the delivery of a product or a service to end consumers. Traditional transaction based intra organizational relationships give way to partnerships in which information, processes, decisions and resources are shared among partner companies.

There are several major underlying trends that have formed the key drivers for supply chain management.

The first is the globalization of businesses. Modern businesses attempt to deploy global resources to maximize the potential opportunities in the global community. This, however, entails the challenges of dealing with long delivery lead times, high buffer stock, complex logistics and high cost of coordination, as companies try to coordinate the three flows across the globe.

Another driver is the innovations in the retail sector. General merchandise store chains like Wal-Mart, Price club, Category specialist item chains like TOYS-R-U's ,virtual electronic stores like Next, Amazon have revolutionized the retail side of supply chains. Innovations like Vendor-Managed Inventory (VMI), Everyday low pricing, Activity-based costing and cross-docking have triggered industry –wide efforts in supply chain management like Efficient Consumer Response (ECR) or Efficient Foodservice Response (EFR).

On the supply side, a key driver of supply chain management is the availability of cost-effective information technologies (IT).In fact, although it is recognized that a supply chain that makes decisions based on global information would clearly dominate one with disjoint decisions by separate and independent entities in the supply chain, a well coordinated supply chain has not been easy to achieve. Significant investments are required to allow information to be shared across entities so that the activities and decisions throughout the supply chain can be coordinated. Recent advances in cost effective IT have ,however made, the cost benefit trade off favorable toward well coordinated supply chain management.

Specific examples of such technologies include Client server architecture, TCP/IP, relational DBMS (Data Base Management Systems), ERP (Enterprise Resource Planning), EDI (Electronic Data Interchange), Object-Oriented Programming environments, Wireless communications and Internet. How to deploy these technologies and coordinate supply chain wide activities constitutes the latest advances in supply chain management.

Objective of the present paper is to study the role of Information Technology in Vendor Managed Inventory. A specified work in this particular arena is still needed. The present paper elaborates the Vendor Managed Inventory, its importance in changed business scenario of today's world, its usefulness while connected with the Information Technology.

The organization of present paper is as follows.

Section A describes Vendor Managed Inventory (VMI), the types of Information shared with manufacturers, Vendors. **Section B** discusses new dimensions of information technology in supply chain management as well as in procurement process. **Section C** addresses the impact &/or importance of IT in VMI vis-à-vis challenges of information sharing in VMI.

Today, most of the firms are concentrating on the “Core Competences.”They want to outsource minor tasks and activities, when it is cost effective to do so. Under a VMI agreement; a supplier takes full responsibilities for maintaining stock of products at a customer facility. VMI differs from the traditional inventory management, in that the customer is billed for material when it is delivered, not when it is consumed or issued.

With VMI, the vendor specifies delivery quantities sent to customers through the distribution channel using data obtained from EDI.VMI,JIT distribution and ECR(Efficient consumer response) all refers to similar concept ,but applied to different industries e.g.; Grocery & Apparel industries tend to use ECR while the automobile industry tends to use VMI & JIT.

VMI reduces stock outs and reduces inventory in supply chain. Some features of VMI include:

- Shortening the supply chain.

- Centralized forecasting.

Frequent communication of inventory, stock outs and planned promotions.EDI (Electronic data interchange) linkages facilitate this communication.

No manufacturer promotions.

Trucks are filled in a prioritized order e.g.; items that are expected to stock out have top priority ,then items that are furthest below targeted stock levels, then advance shipments of promotional items(promotions allowed in transition phase only) and finally items that are least targeted stock levels.

Relationship with downstream distribution channels.

Result-Inventory reduction and stock out reduction.

VMI can be applied at any point within a supply chain:

Manufacturer-wholesale distributor/retailer

Manufacturer-End customer/OEM

Manufacturer- Internal inventory sites.

For VMI partnership to be successful and fruitful, the supplier and customer when entering an agreement must agree on the following:

- *The specific products that will be covered under the VMI agreement.
- *Acceptable availability “of these products at the customer’s site and the corresponding investment required by the customer.
- *Mutually acceptable “service level” agreement.
- *How often the stock of these products will be replenished.
- *Automatic return of material not required by the customer.

The advantage for a customer participating in a VMI program covers the following:

1. Eliminating of transaction cost.
2. Reduced inventory capital costs.
3. Establishing an extremely reliable source of supply for products.
4. Customer does not pay for the inventory until it is sold or used.
5. Elimination in inventory stock outs.
6. Better financial planning.
7. Elimination in ordering errors.

The advantages for a supplier in a VMI program me cover the following:

- *Securing the customer's overall business for products it supplies.
- *Better planning of its own inventory replenishment needs.
- *Better capacity utilization of its plant.
- *Better demand management.
- *Customer focused approach leading to competitive advantage.
- *Supply chain visibility.
- *Better planning.

The risks involved for suppliers in participating in VMI programs are high administrative cost as it is assuming responsibility for replenishment activity that was previously carried out by the customer's buyers.

The real world implementations of VMI can be broken in to three main categories:

1. Collaboration
2. Automation
3. Cost Transfer.

In many instances, a VMI relationship is the first time in supply chain where both partners have access to, and are measuring performance using the same matrices. When two companies are focused on the same goals and have access to the same key performance metrics, a true supply chain partnership emerges, resulting in a better performing supply chain.

VMI delivers tangible resulted throughout the supply chain. As the concepts and practices of Lean extend beyond the manufacturing floor down through the supply chain.VMI is the enabling process to drive out costs and time. For success of VMI implementation the following are the keys:

- Set, review and maintain performance goals.
- Manage all SKUs through VMI to minimize transactions.
- Utilize automated replenishment system.
- Organize periodic performance reviews.
- Use metrics to find cost and inefficiencies.

VMI can be made to work, but the problem is not just one of logistics.VMI often encounters resistance from the sales force and distributors. The issues are roles, skills, trust and power shifts.

Effective implementation of VMI depends upon smoothly addressing the concerns of various stake holders. Some of the concerns can be addressed as explained:

1. Defining incentive programs based on partnership and not on sales volume.
2. Building partnership with management commitment.
3. Conduct simulations and pilots before actual implementation.
4. Organize training sessions before launching VMI program.
5. Getting into service level agreements (SLA).

One of the most common data shared between supply chain partners is inventory level. Inventory and communication are economic substitutes. Access to supply chain inventory status can contribute to lowering the total inventory level in the supply chain. Suppose two companies in a supply chain in which a retail chain purchases products from the manufacturer. If the retailer and the manufacturer independently manage their respective inventories without sharing inventory status information, they may end up having duplicate safety inventories or stock-outs at both locations. A solution to this inefficiency is to coordinate the management of inventories at two sites. Indeed it was proven that “Echelon based” inventory control is optimal under certain assumptions. The Echelon inventory is the combined inventory at the site and at its downstream partner. It is also evident that a variation of the order up to policy based on the Echelon inventory level would achieve near optimum in more realistic conditions. Such a policy is in the spirit of Synchronous Manufacturing System. The production rule will adjust the production rate at a stage according to the inventory levels at the downstream stages. Specifically, the production rate at a stage will decrease or increase, when the inventory levels at those downstream stages is higher or lower than their target levels. To implement echelon based inventory control, the upstream company should keep track of the inventory level at the downstream of the supply chain and start production only when the echelon inventory position is low enough. This way, the upstream company can better determine when and what to produce and downstream companies can improve the service level with less inventory.

In practice, sharing of inventory information is implemented in different forms. CRP (Continuous Replenishment Program) or VMI (Vendor Managed Inventory) is a practice often employed by two neighboring partners in a supply chain (Procter & Gamble and Wal-Mart). In a typical CRP relationship, the buyer shares its inventory data with the vendor and asks the vendor to manage his inventory within a guideline.

Recently even the possibility of sharing inventory information among competitors is under discussion. For example, Japan’s semiconductor makers proposed a system under which chip makers from Japan, Korea, U.S. and Europe jointly survey their inventory levels. The benefit of this horizontal information sharing is to mitigate the chronic problems associated with volatile business cycle. DRAM businesses, being at the farthest stream in the computer supply chain, experience an extreme form of volatility. It is caused by multiple factors including business cycle, double forecasting, shortage gaming, and third party speculation. As a result, industry sales data and market prices are so noisy that estimating the real market demand becomes a major challenge. Information sharing among key manufacturers, if properly implemented, can at least mitigate this information distortion, and each manufacturer can better estimate the market demand and make better production, capacity and inventory planning decisions.

Online Procurement:

E-procurement system allows businesses to use the internet for acquiring the necessary goods and services. There are three main categories of e-procurement system.

One type focuses on improving the transactions and the decision-making capabilities of the company. Businesses may deal with hundreds of transactions on a weekly basis, but these applications simplify the process and help to build stronger relationship between buyers and suppliers.

The second category of e-procurement system involves managing assets. Systems in this category provide inventory management, maintenance scheduling in house product availability, as well as other similar services. These applications are useful for businesses that need to keep a close watch on the quality of materials in stock.

The third category includes systems designed to optimize a company's production operations. Many of these applications deal with the entire production cycle ,including the procurement of materials when the inventory runs low, the management of supplier contracts and the production scheduling .Because of the differences between the systems, it is important for companies to choose the one that is most appropriate for their industry.

E-procurement system in businesses imparts benefits such as saving money on purchase, improving the timeliness of the purchasing process and eliminating waste. In addition to these benefits, companies can also improve the efficiency of their supply chain. Additionally using e-procurement to enhance supply chain relationship can make it easier for accounting departments to track and keep a record of payments and invoices.

E-procurement system does not automatically boost supply chain efficiency. However, the company must select a system that has the capabilities necessary to achieve those benefits first. For example, the system must include applications to assist with contract management, including pricing information, maintaining sales terms and helping negotiations. By having all of this information in one place, the purchasing process is expedited.

E-procurement is more than just a system for making purchases online. A properly implemented system connects companies and their business processes directly with suppliers while managing all interactions between them. E-procurement helps with the decision making process by keeping relevant information neatly organized-procurement process is template-driven, which makes all transactions standardized and traceable. Keeping track of all tender bids means leveraging firm's knowledge to obtain better pricing. Well managed e procurement helps reduce inventory levels. E-procurement system allows multiple access levels and permissions and help managers to organize administrative users by roles, groups or tasks.

E-procurement types and models:

There are 6 main types of e-procurement:

1. Web-based ERP (Electronic resource planning): Creating and approving purchasing requisitions, placing purchase orders and receiving goods and services by using a software system based on the internet.

2. E-M R O (maintenance, repair and operating): Similar to web based ERP except that the goods and services ordered are non-product related to MRO supplies.
3. E-sourcing: Identifying new suppliers for a specific category of purchasing requirements using the internet.
4. E-Tendering: Sending requests for information and prices to suppliers and receiving the responses of suppliers using the internet.
5. E-Reverse auctioning: Using the internet to buy goods and services from a number of known or unknown suppliers.
6. E-Informing: Gathering and distributing purchasing information both from and to internal and external parties using the internet.

Reverse Auction (RA):

RA is a process of bidding by suppliers through the internet using reverse auction engine (a software program). All the bidders can participate in the bidding process. The buyer fixes the specifications and commercial terms, and fixes purchase price below which the bidders have to quote. The bidding starts at pre-fixed start time. The bidders can see their prices quoted by others so that they can reduce the prices step by step however, buyers can see all the bids.

E-procurement technique like bidding on reverse auctions are wherein companies will find they have everything to gain .It's a win-win situation for both the buyers and sellers. The following are the features of e-reverse auction process that cater to the needs of global outsourcing:

1. Easy process
2. Global reach
3. Transparency

Case of Tata Motors benefiting through E-Procurement:

Tata Motors is India's largest and the fully integrated automobile company. It ranks top 6 among manufacturers of medium and heavy vehicles in the world. In late 1990's and early 2000's, Tata were facing financial losses due to cost pressures. They also lost market share to the competition. Tata Motors identified the problem in their cost structure .Materials cost amounted to 65 percent of the entire cost in FY 2000.They used e-sourcing and e-procurement to attain precision and cost cutting. Tata Motors has employed SAP and Oracle based IT system to support its database and transactions management. They went into outsourcing of e-procurement process to free markets, Tata Technologies Ltd. And Dynamic logistics to enhance the efficiency of the supply chain .Systematic implementation of e- sourcing with an objective of cost reduction, smooth transactions with lower cost, transparent processes and global reach for material sourcing.

In 2001, Tata Motors employed FreeMarkets.com, a global supply chain solutions company as partner in running the e-sourcing program. The first reverse auction under this initiative was

calculated in June 2001. E-procurement in the company revolved around reverse auctions for on-line negotiations of prices for a variety of products and services procured by the company. Tata Motors extended the technique to the procurement of maintenance, annual contracts, tool engineering, administration, canteen purchases, medicines and hotel bookings. They extended the new found success of e-sourcing to tier-II sourcing etc. Using e-procurement, Tata Motors covered around Rs. 18,500 mn of spend from 2002 to 2004. They have covered 25% of direct material purchasing and 55% of indirect material purchasing through e-procurement in that period. E-procurement has reduced procurement overheads and rationalized supply conditions, quality norms and made provision for multiple locations procurement possible.

Information Transfer Model:

In this model a partner transfers information to the other who maintains the database for decision making. This is a natural evolution from EDI based transactional model. While EDI was originally designed to be a means to process transactions, it has been extended to facilitate sharing of some information like POS and on hand delivery. The model is exemplified by the examples of UPS-Micro Age, SEJ, VMI and QF contracts. In VMI, the retailer sends sales and inventory information to the vendor, who replenishes the buyer's inventory using the information received. QF contracts typically require that the buyer sends his forecasts to the vendor, so that she can prepare for the coming week's orders. In the UPS-MicroAge relationship, MicroAge transfers its orders data to UPS, who plans and executes deliveries.

Supply chain partners may use EDI for information sharing after agreeing on an EDI standard. They can use EDI through third party VAN services like GEIS, Sterling and Promenos.

While EDI is a well established process in the business world, it has several drawbacks. First there are multiple industry-specific standards, the cross industry standard and the international standard EDIFACT. A company with business interests in multiple industries has to face a problem of dealing with multiple standards; second, since EDI is designed for all companies in the one-fits-all spirit, it may not exactly meet the special needs of a supply chain. Third, EDI is designed primarily for transaction processing, especially around purchase order and invoice, and hence it has some severe limitations for information sharing. For example, EDI only handles rigid text formats. This may be sufficient in standard transaction processing, but would not be adequate to handle other kinds of information sharing. Such as data base tables, bar codes, images and HTML pages. Fourth, EDI is batch-oriented, working only in operational windows. Finally, small and medium size companies often are discouraged by the high cost of installing EDI.

Recently, innovative companies are extending the boundary of EDI and developing mechanisms that directly connect information system of multiple companies. In addition, service companies now offer EDI on the internet, thereby lowering the cost of EDI usage.

Third party model involves a third party whose main function is to collect information and maintain it in a database for the supply chain. The third party may also provide services for transactional processes like accounting, sales analysis, order tracking, rebate tracking and alert of special sales and promotional campaign. Distributors also receive various types of aggregate data that can be analyzed and utilized for their inventory control and product development.

Constraints of E-Procurement:

As against the benefits, e-procurement has certain constraints, which are as follows.

1. Infrastructure: It includes lack of continuous internet facilities at the supplier's end. There is difficulty in downloading large files due to bandwidth/speed limitation. Sometimes there are problems in continuous access to e-procurement site. In few occasions, dates of auction are rescheduled once or twice.

2. Reluctance for acceptance of new system:

Lack of knowledge and reluctance to use e-procurement at supplier's end will pose a major problem in utility of the system. Reluctance on the part of buyers to get feedback from suppliers and thereafter will be implemented with the help of the e-commerce team.

3. Different time zones: Vendors at various time zones in reverse auction.

Information sharing in a supply chain faces several hurdles. The first and foremost challenge is that of aligning incentives of different partners. It would be naïve of a partner to think that information sharing and cooperation will automatically increase his profit. In fact each partner is wary of the possibility of other partners abusing information and reaping all the benefits from information sharing. For example, supply chain partners seldom share information that relates to sensitive cost data e.g.; production yield data or purchase price of parts. Trust and cooperation become critical ingredients in a supply chain partnership. On the other hand, trust needs to be rationalized by a relevant economic return.

One question rises every time, whether manufacturers will sincerely share their inventory information? This is because each party has an incentive to overstate its inventory level to discourage others from producing more chips or building additional capacity. If every manufacturer acts selfishly and anticipates the same behavior of others, information sharing will not be sustained as equilibrium. It will be interesting to see whether the proposed horizontal information sharing will actually take place in spite of the incentive problem.

In the traditional supplier-buyer relationship, companies communicate demand information exclusively in the form of orders. Indeed, orders from downstream serve as a critical source of information about future businesses. But if the supplier depends solely on orders for future production planning, a problem arises. Since orders are processed result of various information and conjectures by the buyer, order data often distort the true dynamics of the marketplace-A phenomenon called "The bull whip effect". Thus the information transferred in the form of orders tends to be distorted and can misguide upstream partners in their inventory and production decisions. In particular, the variance of orders is often larger than that of sales, and the distortion tends to increase as one move upstream. The distortion injects additional uncertainties into order fulfillment processes and makes demand forecasting even more difficult. It ultimately hurts the efficiency of the supply chain in the form of excess raw material inventory, unplanned purchases of supplies, additional manufacturing expenses created by excess capacity, inefficient utilization and overtimes, excess warehousing expenses, premium shipping costs and poor customer service level.

The sources of Bull whip effect are identified as 1) Demand signal processing 2) Rationing game 3) Order batching and 4) Price fluctuations.

A typical supply chain involves functions and independent companies in the delivery of goods and services to the end consumer. As a result, it is difficult for a customer to find out the status of an order, since the consumer does not always know who else besides the retailer is involved or where in the supply chain the order is being processed. Recently, supply chain members started sharing their order status information, so that a high rate of first-call problem resolution could be achieved. For example, partners in the supply chain may hot-link their web sites or allow access to each other's order databases. By calling the retailer or visiting its web site, the customer confined the order status no matter where and in which supply chain partner's possession the order is. The one-stop inquiry is a big contrast to the traditional process in which a customer is referred several times to other chain partners or is called back hours or days later. The key benefit of this type of information sharing is the improvement of the quality of customer service, reduction in payment cycle, and savings in labor cost of manual operations. The quality of service improves as problems are resolved in a single call in a matter of minutes rather than hours and days. Since delivery problems delay the payment of product sales or service fees, fast resolution also shortens the payment cycle time. Furthermore, automated answering service is more productive compared with manual answering service, so it saves labor cost as well.

As mentioned earlier, members of a supply chain can eliminate the bullwhip effect and its related inefficiencies by avoiding independent multiple forecasts. VMI indeed delegates a site's replenishment decisions to upstream suppliers, but the degree of delegation is minimal. In a typical VMI arrangement, the vendor is asked to ship a predetermined quantity of order when the buyer's inventory level falls under a certain level. In some cases, the vendor has the liberty of shipping any quantity, but must keep the downstream site's stock from exceeding some predetermined maximum level. Such constraints often exist because the retailers are concerned that an uncontrolled vendor may have the incentive to ship too many units to the retailer. A manufacturer could make use of its supplier's production or delivery schedule to improve its own production schedule. For example, US auto companies have access to the production schedule for their orders at steel suppliers. A Taiwanese semiconductor manufacturer allows her global customers access to her production schedule.

Other examples of information often shared in a supply chain include performance metrics and capacity. Performance metrics include product quality data, lead times, queuing delays at workstations and service performance. By sharing this type of information, the supply chain can identify the bottlenecks of the chain and improve the overall performance. Capacity information can contribute to mitigating potential shortage gaming behavior, thereby countering a potential source of the bullwhip effect. By sharing planned capacity information with the downstream partners well in advance, supply chain partners can coordinate and prepare against possible shortages. Semiconductor foundries, for example routinely share their capacity status with the buyers to weather through peaks and valleys of volatile demand.

The extent of information sharing in a supply chain is expanding.

Another concern associated with the information sharing is the confidentiality of information shared. Suppose, for example, that a supplier supplies a critical part to two manufacturers who

compete in the final product market .either manufacturer would not share information(like sales data)with the supplier unless it is guaranteed that the information is not leaked to the other manufacturer. But the situation becomes tricky if the supplier and one of the two manufacturers are the same company.

Technology is another constraint in information sharing. Implementation of a cross organizational information system is costly, time consuming and risky. Partners may not agree on the specifications of t he technical system, e.g.; EDI standards, or how to split the cost of investing in the system.

The timeliness and accuracy of the shard information could be another major hurdle. PC manufacturers often complaint about not being able to get accurate sell through data from their resellers. Some resellers share such data on a monthly basis, but then the definition of a month varies by resellers.

Finally, we should note that information sharing is only an enabler for better coordination and planning of the supply chain. Hence companies must develop capabilities to utilize the shared information in an effective way.

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CONSUMER PERCEPTION OF BUSINESS MAGAZINES

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Abstract

Business Magazines have an important role to play in the urban and semi-urban population of India. There are certain qualities in Business magazines which keep the consumer tie up with it. In order to bring out the consumer's likes and dislikes, their preference standard, frequency of uses and other apparent and hidden traits, this research work was conducted in the National Capital Region of India. National Capital Region is the only region which truly depicts and represents Indian consumers. It comprises of the State of Delhi, Haryana, (Gurgaon and Faridabad, the two most important Business and Industrial township), U.P (Noida, Greater Noida, and Ghaziabad, all important educational and industrial hubs of India). The research survey was conducted from various demographic factors such as age, profession, gender (male and female) and various Income groups. There are three main factors, on which analysis was done,

- 1) Consumer Preferences*
- 2) Features of Magazines (Quality, Authenticity and Subscription)*
- 3) Promotional Offers*

Further, a cross tabulation was done on different age groups and income groups. At the end conclusions were drawn in such way which could be used by the present and future Business Magazines in launching and upgrading their present status in order to sustain and expand their business. The aim of this project is to understand the consumer perception of Business Magazines, their preferences and like and dislikes in the Nation Capital Region, Delhi. Thus to arrive at an authentic findings in order to make aware the Business Magazines all about their present and prospective consumers. This will serve as valid points while taking strategic decision towards, launching, upgrading, product specification and marketing.

Research Methodology

Primary Data

This research survey was done for 500 respondents. These belonged to different age groups, professions, gender and income group. We could draw a relation between demographics and other factors that influence the consumers in buying business magazines. We could study the sample on the following parameters:

- Ratio of Male and Female.
- Percentage of people in different Age group.
- Percentage of people in different Profession..
- Percentage of people belonging to different Income group.

Secondary data

Secondary data were used from the Magazines Websites, Research Journals and Articles.

Tool used:-

Check list - from the Interview of selected consumers

MS Word - for documentation and final report

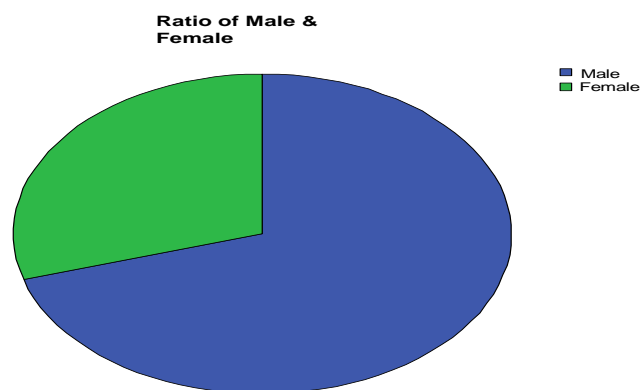
MS Excel - To perform one-to-one analysis of consumers and magazines

SPSS - Capturing the data across 500 consumers

-To generate reports to assist in findings and conclusion.

Ratio of Male and Female▪ **Ratio of Sex****Table - 1**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	352	70.4	70.4	70.4
Female	148	29.6	29.6	100.0
Total	500	100.0	100.0	

**(Figure 1)**

(Table 1- Figure 1) Show the ratio of Male and Female total 500 surveyed. The graph shows the percentage of both Sexes in our sample size of 500. The total number of males surveyed were 352 i.e. 70% of the total sample and the females were 148 i.e. 30% of the total sample.

The ratio of male and female is 2.37:1.

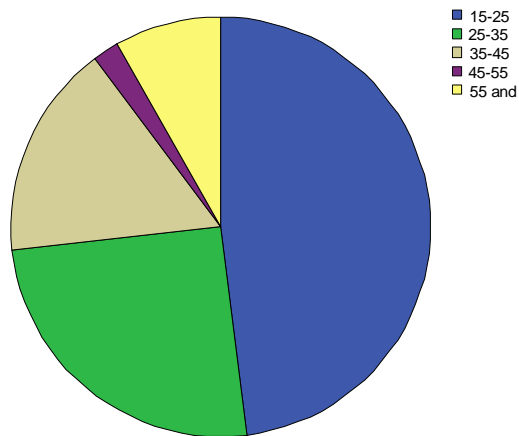
Age-wise Distribution of Respondents

Age Distribution

Table 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-25	240	48.0	48.0	48.0
	25-35	126	25.2	25.2	73.2
	35-45	83	16.6	16.6	89.8
	45-55	10	2.0	2.0	91.8
	55 and above	41	8.2	8.2	100.0
	Total	500	100.0	100.0	

Age Distribution



(Figure 2)

We covered the people in five Age groups i.e. 15-25, 25-35, 35-45, 45-55 and 55& above.

The table shows the percentage of respondents in each of the age group in our sample size of 500 (Table – 2 **Figure 2**)

- The total number of respondents in the age group of 15-25, surveyed were 240 i.e. 48% of the total sample.
- The total number of respondents in the age group of 25-35, surveyed were 126 i.e. 26% of the total sample.
- The total number of respondents in the age group of 35-45, surveyed were 83 i.e. 16% of the total sample.
- The total number of respondents in the age group of 45-55, surveyed were 10 i.e. 2% of the total sample.
- The total number of respondents in the age group of 55& above, surveyed were 41 i.e. 8% of the total sample.

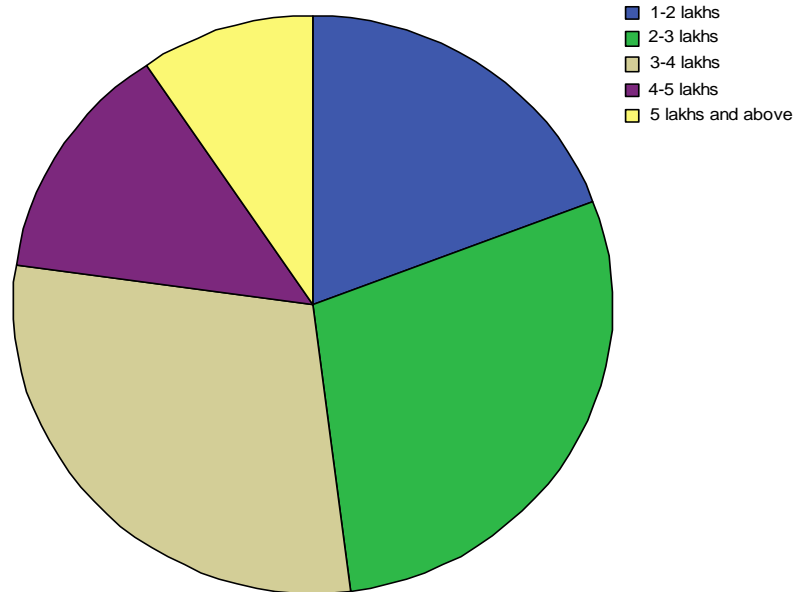
Income wise Distribution of Respondents

Income Distribution

Table 3

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1-2 Lakhs	96	19.2	19.2	19.2
2-3 Lakhs	144	28.8	28.8	48.0
3-4 lakhs	146	29.2	29.2	77.2
4-5 Lakhs	67	13.4	13.4	90.6
5 Lakhs& above	47	9.4	9.4	100.0
Total	500	100.0	100.0	

Income Distribution

**Figure 3**

We covered the people in five Income groups i.e. 1-2 Lakhs, 2-3 Lakhs, 3-4 Lakhs, 4-5 Lakhs and 5 Lakhs & above. The table shows the percentage of respondents in each of the Income group in our sample size of 500. (Table – 3 **Figure 3**)

- The total number of respondents in the Income group of 1-2 Lakhs, surveyed were 96 i.e. 19% of the total sample.
- The total number of respondents in the Income group of 2-3 Lakhs, surveyed were 144 i.e. 29% of the total sample.
- The total number of respondents in the Income group of 3-4 Lakhs, surveyed were 146 i.e. 30% of the total sample.
- The total number of respondents in the Income group of 4-5 Lakhs, surveyed were 67 i.e. 13% of the total sample.

- The total number of respondents in the Income group of 5 Lakhs & above, surveyed were 47 i.e. 9% of the total sample.

Profession wise Distribution of Respondents

Professional Distribution

Table - 4

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Students	180	36.0	36.0	36.0
Service	199	39.8	39.8	75.8
Business	94	18.8	18.8	94.6
Others	27	5.4	5.4	100.0
Total	500	100.0	100.0	

Professional Distribution

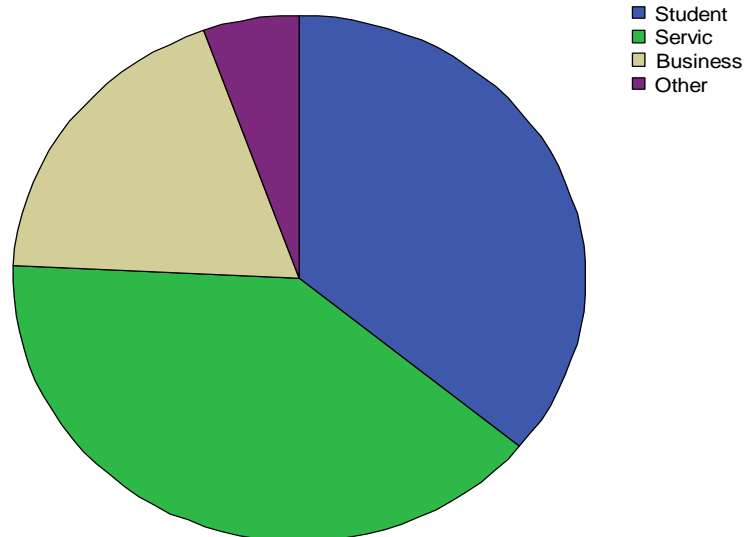


Figure 4

The above (Table – 3 **Figure 3**) show the Profession wise composition of respondents. We covered the people in four Professional groups i.e. Students, Service, Business & others (retired) total 500.

- The total number of respondents student group, surveyed were 180 i.e. 36% of the total sample.
- The total number of respondents in the service group, surveyed were 199 i.e. 39% of the total sample.
- The total number of respondents in the business group, surveyed were 94 i.e. 19% of the total sample.
- The total number of respondents in the others group, surveyed were 27 i.e. 6% of the total sample.

(1) Consumer Preference

- *Business Today.*
- *Business Standard.*
- *Business World.*
- *Business India.*
- *India today.*
- *Business India.*

Consumer Preference of different Business Magazines

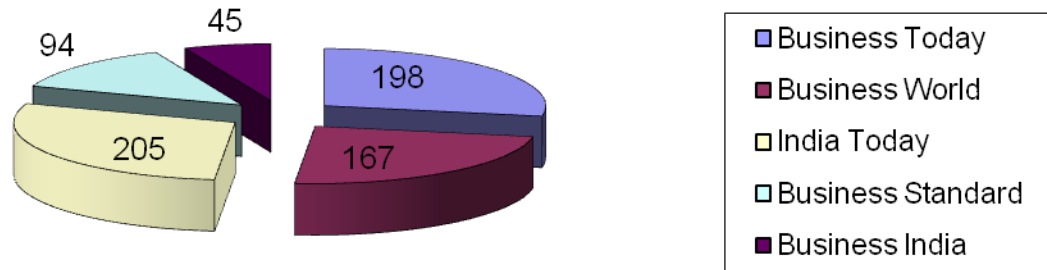


Figure 5

Consumer Preferences of Business Magazines

SNO	NAME	NUMBER OF READERS
1	BUSINESS TODAY	198
2	BUSINESS WORLD	167
3	INDIA TODAY	205
4	BUSINESS INDIA	45
5	BUSINESS STANDARD	94

Table 5

Analysis

From the table given above it is clearly visible that the most popular magazine among the reader is India Today with 205 out of 500 respondents reading it. It is closely followed by Business Today with 198 readers and Business World with 167 readers. The least read magazine out of those mentioned in the questionnaire was Business India with only 45 readers opting for it.

(2) FEATURES (Ranking 1 to 7)

(1) *Quality of articles.*

(2) *Value for money.*

(3) *Reference value.*

(4) *Credibility & authenticity.*

(5) *Cover page personality*

(6) *Subscription offers*

(7) *Ease of availability*

A) Quality of Article (Table 6-A)

Quality of Articles

Table 6-A

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Highly Influential	289	57.8	57.8	57.8
	Influential	77	15.4	15.4	73.2
	Sum what Influential	110	22.0	22.0	95.2
	Neutral	5	1.0	1.0	96.2
	Some what Less Influential	17	3.4	3.4	99.6
	Least Influential	2	.4	.4	100.0
	Total	500	100.0	100.0	

4) Credibility and Authenticity (Table 6-B)

Table 6-B

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Highly Influential	28	5.6	5.6	5.6
Influential	99	19.8	19.8	25.4
Somewhat influential	64	12.8	12.8	38.2
Neutral	123	24.6	24.6	62.8
Somewhat less Influential	144	28.8	28.8	91.6
Less Influential	21	4.2	4.2	95.8
Least Influential	21	4.2	4.2	100.0
Total	500	100.0	100.0	

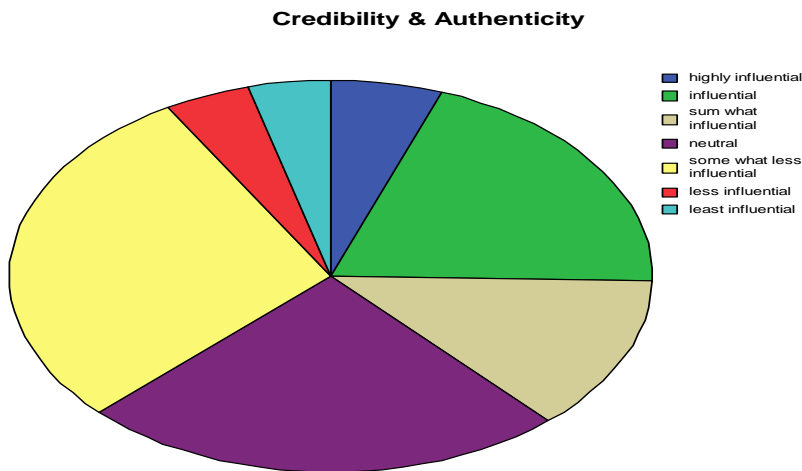


Figure 6-B

6) Subscription Offer (Table 6-C)

Subscription Offer

Table 6-C

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Highly Influential	3	.6	.6	.6
Influential	19	3.8	3.8	4.4
Somewhat Influential	46	9.2	9.2	13.6
Neutral	64	12.8	12.8	26.4
Somewhat Less Influential	98	19.6	19.6	46.0
Less Influential	80	16.0	16.0	62.0
Least Influential	190	38.0	38.0	100.0
Total	500	100.0	100.0	

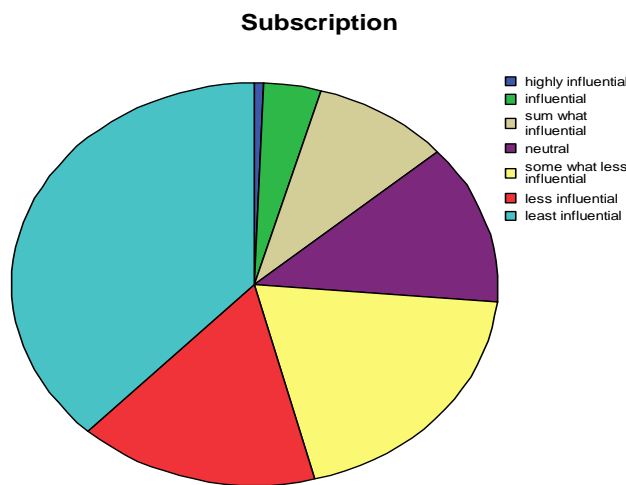


Figure 6-C

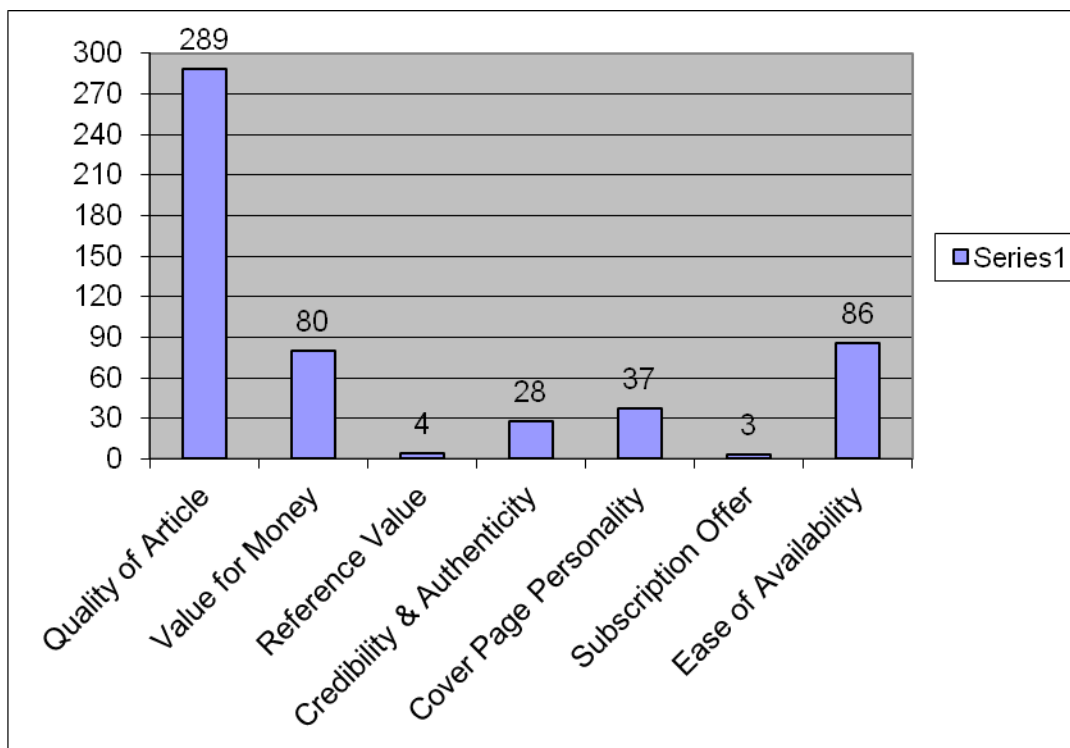
Analysis

From the observations made above it can be inferred that *Quality of article* is the *most influencing factor* with 289 respondents ranking it as the most important choice that would influence their choice of business magazine. The *second* in the list is *Ease of Availability* with 210 people marking it as second most important feature (Table 6-D).

Credibility and Authenticity and cover page personality are also rated as influential by a lot of individuals making it another important feature that influences their choice of business magazine.

Very Influencing Feature Vis a Vis Each Other

Table 6-D



1. Promotional Offer (Table Fig -7)

Influence of Promotional Offer on Subscription Decision

Table - 7

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	221	44.2	44.2	44.2
Valid No	279	55.8	55.8	100.0
Total	500	100.0	100.0	

Influence of Promotional Offer on Subscription Decision

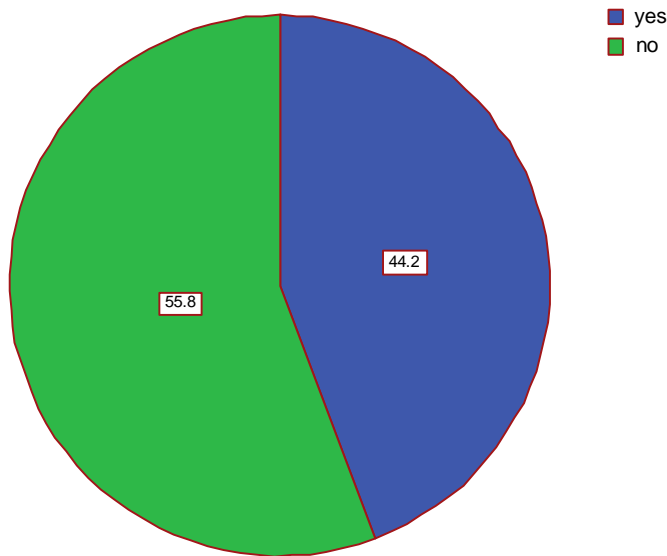


Figure - 7

Analysis: 55.8% of people feel that promotional offers influence their decision to subscribe or not.

Promotional Offers

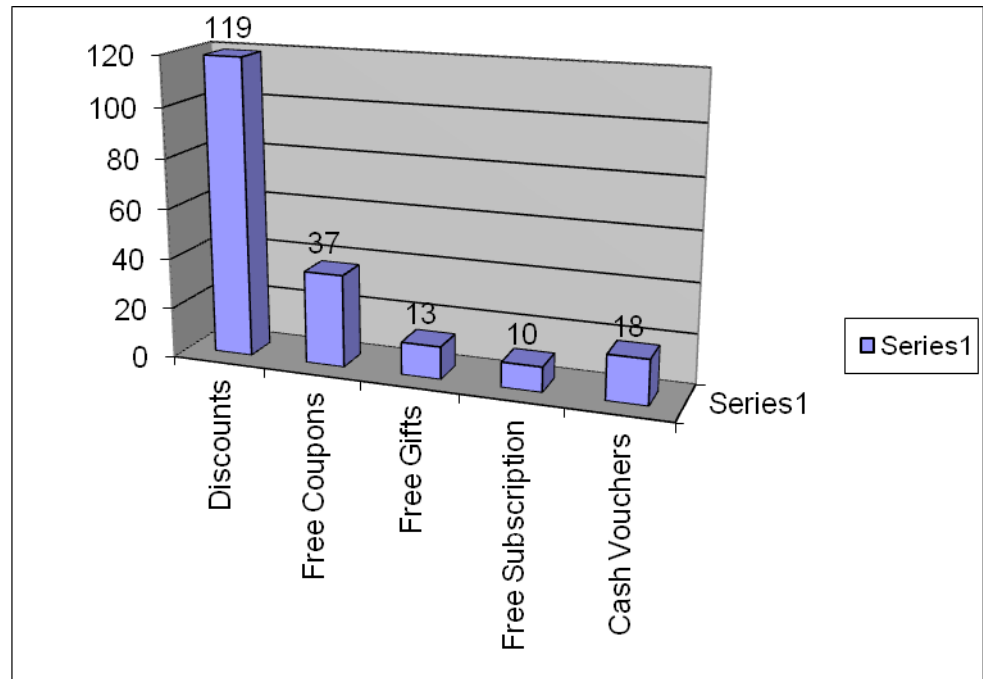
- *Discounts.*
- *Free coupons.*
- *Free gifts.*
- *Free subscription for limited time period*
- *Cash vouchers*

Type of Promotional Offer

Table-8

Offer Type	Frequency
Discount	119
Free Coupon	37
Free Gifts	13
Free Subscription	10
Cash Vouchers	18

Graph-8



Analysis: Discounts are the most preferred scheme, followed by free coupons.

1. Relation between Income and choice of Business Magazine.

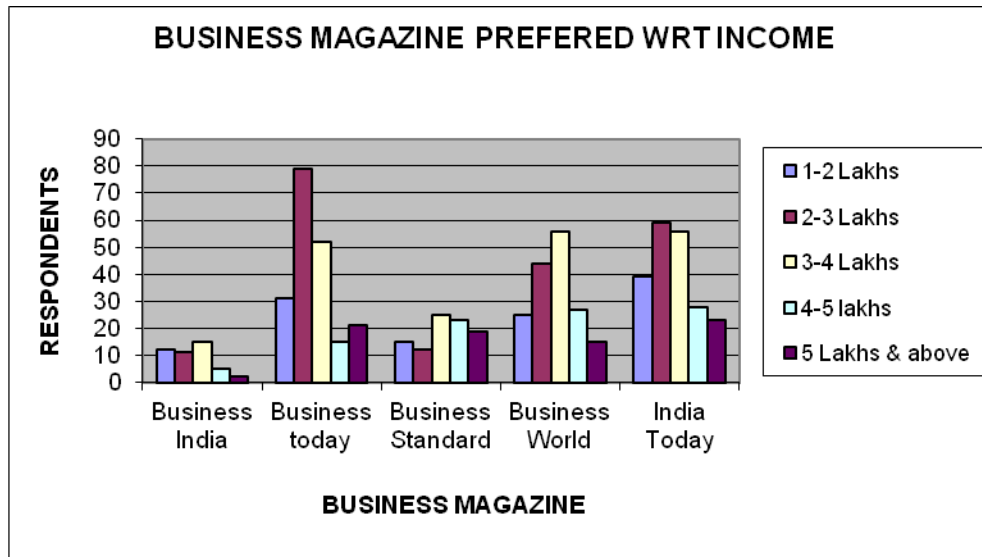
Preference of Consumer * Description of Income

Cross Tabulation

Income Group	Business India	Business Today	Business Standard	Business World	India Today
1-2 Lakhs	12	31	15	25	39
2-3 Lakhs	11	79	12	44	59
3-4 Lakhs	15	52	25	56	56
4-5 Lakhs	5	15	23	27	28
5 Lakhs & above	2	21	19	15	23

Table - 9

Graph - 9



Analysis & Interpretation

Business magazines are more popular among people with higher income i.e. in the income group of 3-4 Lakhs.

- India Today is most popular among people in the income group of 5 Lakhs & above.
- Business today is most popular among people in the income group of 2-3 Lakhs.
- Business world is most popular among people in the income group of 1-2 Lakhs.

2. Relation between age group and different Business Magazines.

Discounts VS Age

Count

Table-10

		Description of Age					Total
		15-25	25-35	35-45	45-55	55 and above	
Discounts	Yes	39	44	25	0	11	119
	No	201	81	59	10	30	381
Total		240	125	84	10	41	500

Bar Chart

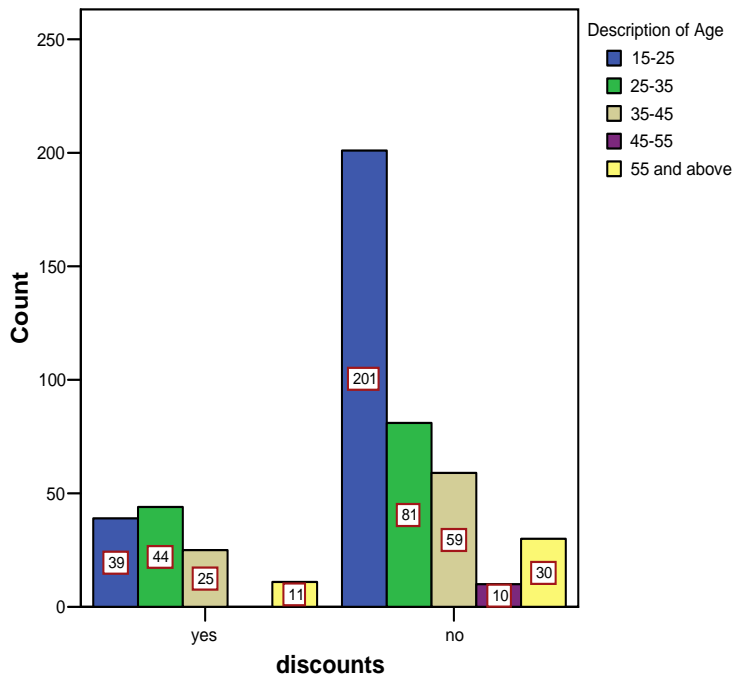


Fig -10

Analysis:

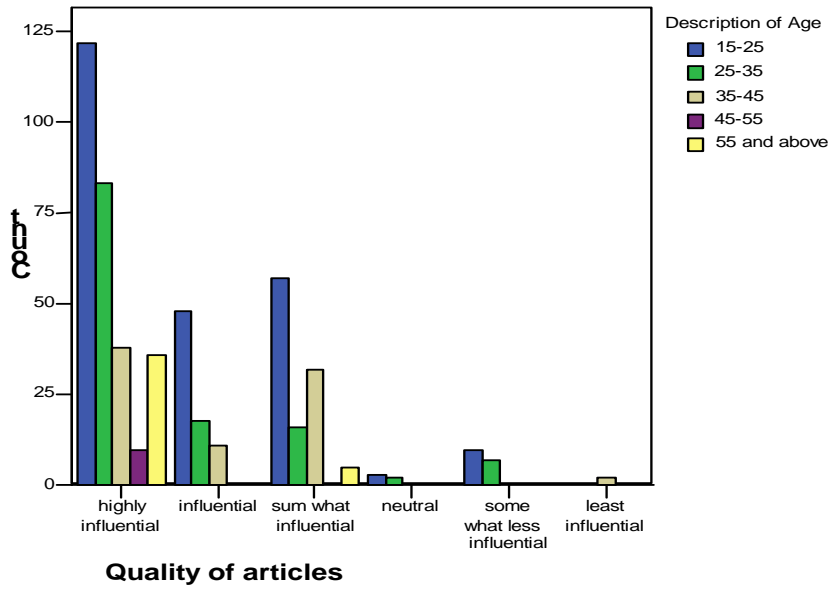
Most of the people ranging between 25-35 and 35-45, their purchase decision is affected by various discounts offered by various magazines. Hence most of the discount offers should be directed towards them.

Cross tabulation**Quality of articles * Description of Age**

Count

		Description of Age					Total
		15-25	25-35	35-45	45-55	55 & above	
Quality of articles	Highly Influential	122	83	38	10	36	289
	Influential	48	18	11	0	0	77
	Somewhat Influential	57	16	32	0	5	110
	Neutral	3	2	0	0	0	5
	Somewhat Less Influential	10	7	0	0	0	17
	Least Influential	0	0	2	0	0	2
	Total	240	126	83	10	41	500

Bar Chart



Analysis: Quality of article is considered to be a highly influencing factor for purchase of a business magazine in the age group of 1-25 and 25-35. Hence care should be taken by the magazines targeting this age group (*specified above*)

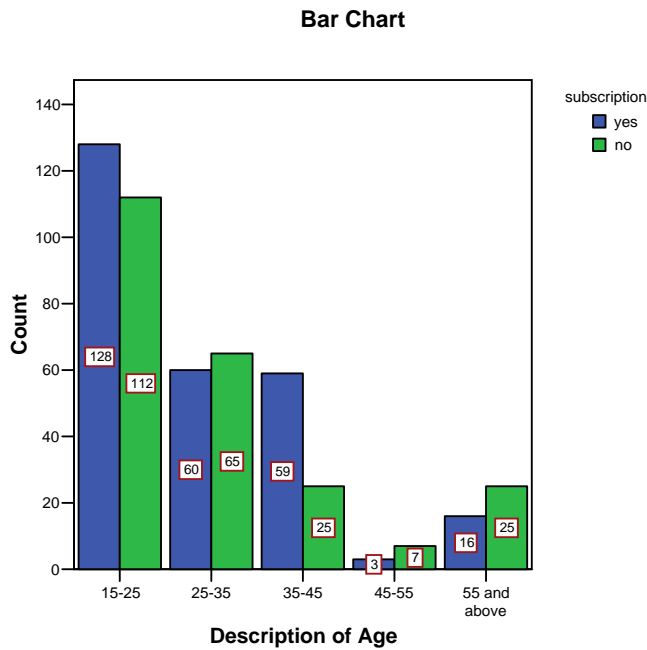
9. The most susceptible age group among the Respondents.

Relation between Age and Subscription

▪ **Cross tabulation**

Count

		Subscription		Total
		Yes	No	
Description of Age	15-25	128	112	240
	25-35	60	65	125
	35-45	59	25	84
	45-55	3	7	10
	55 and above	16	25	41
Total		266	234	500



Figure

Analysis: Around 53% of the respondents in age group 15-25 want subscription and almost 50% of the respondents ageing between 25-35 and 70% of the people in age group of 35-45 want subscription. We see a down trend in age group 45-55 i.e. most of the people in this age group don't want subscription and a quiet surprising people between age group of 55 and above want subscription (41% says yes and 59% says no)

Age group vs Discount Offer .

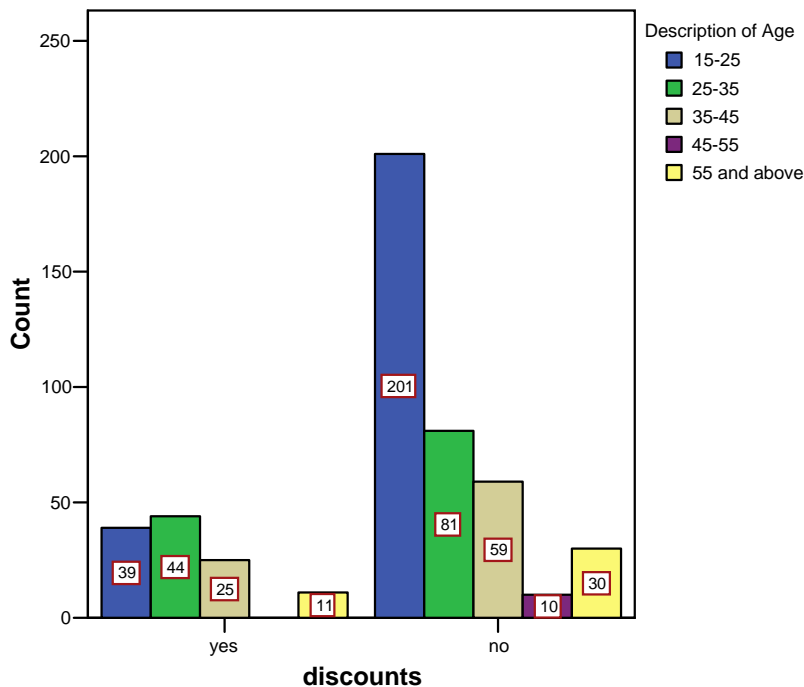
Discounts VS Age

Count

		Description of Age					Total
		15-25	25-35	35-45	45-55	55 and above	
Discounts	Yes	39	44	25	0	11	119
	No	201	81	59	10	30	381
Total		240	125	84	10	41	500

Table

Bar Chart

**Analysis:**

Most of the people ranging between 25-35 and 35-45, their purchase decision is affected by various discounts offered by various magazines. Hence most of the discount offers should be directed towards them.

Conclusion and Recommendation

- COMMERCIAL /BUSINESS magazines are most popular among students and people in service where as newspapers are more popular among people in business along with those retired.
- Fairer sex is more influenced by other with regard to its decision to buy or not.
- Business magazines are more popular among people with higher income i.e. in the income group of 3-4 Lakhs.

- India Today is most popular among people in the income group of 5 Lakhs & above.
- Business today is most popular among people in the income group of 2-3 Lakhs.
- Business world is most popular among people in the income group of 1-2 Lakhs.
- Most of the people ranging between 25-35 and 35-45, their purchase decision is affected by various discounts offered by various magazines. Hence most of the discount offers should be directed towards them.
- Around 53% of the respondents in age group 15-25 want subscription and almost 50% of the respondents ageing between 25-35 and 70% of the people in age group of 35-45 want subscription. We see a down trend in age group 45-55 i.e. most of the people in this age group don't want subscription and a quiet surprising people between age group of 55 and above want subscription (41% says yes and 59% says no)

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INNOVATIVE PRACTICES IN TRAINING AND EDUCATION SECTOR

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Abstract

"There is no doubt that creativity is the most important tool of all. Without creativity, there would be no progress, and we would be forever repeating the same patterns." Innovation and creativity can be applied in training as well as in education too.

There are many reasons for people to up skill via qualifications; however, a lack of time and budget can put people off. But it doesn't have to be this way. With a bit of innovating thinking your goals can be achieved. Barriers can be removed for individuals for example, checking out government subsidized funding options or establishing if prior learning and experience will reduce the amount of study time required to achieve goals.

The traditional way to get qualifications was to do a course over several weeks, months or even years, at an educational institution. Somewhat surprisingly, and despite huge advances in technology and communications, very little has changed in the way we teach - either in formal educational settings or in the world of work. Whereas the ways we learn and access knowledge in our day-to-day lives are almost entirely informal, the vast majority of teaching is still done in classrooms and lecture halls. We learn through examples, trial and error and discussing ideas - with everyone acquiring knowledge at their own pace and in formats that suit them. We teach through one-size-fits-all curriculum and 60 minute classes where sharing is akin to cheating. Those who had the qualifications then didn't necessarily have the practical experience once put out into the workforce. Those with the experience had to start from scratch and sit through classes in topics where often they already they knew the content. The good news is that this is starting to change - albeit slowly - as educators and trainers are increasingly experimenting with new technologies.

- *Making Use of Social Media Tools*
- *Online Video Creates a Global Classroom*

- *Gaming Gets Serious*
- *Mobile Learning Comes Into Its Own*

Key words: Creativity, Relationship between creativity and innovation, innovative practices

Introduction

Creativity is the bringing into being of something which did not exist before, either as a product, a process or a thought.

You would be demonstrating creativity if you:

- Invent something which has never existed before
- Invent something which exists elsewhere but you are not aware of
- Invent a new process for doing something
- Reapply an existing process or product into a new or different market
- Develop a new way of looking at something (bringing a new idea into existence)
- Change the way someone else looks at something

Innovation has been understood as the “implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations”

Creativity and innovation are obviously inter-related. Creativity, is seen as the "infinite source of innovation", and innovation can in turn be perceived as the application and implementation of creativity.

Innovation as a paradigm shift

There is a growing desire for a holistic transformation of educational systems (Selinger et al 2008). Creativity allows for the possibility of making connections across different areas of knowledge; there is thus a need for innovative spaces that allow for this cross-cultural and multi-disciplinary approach, which can also include informal knowledge. This approach will thus challenge the actual, traditional configuration of school space, time and structure (Burke, 2007).

Institutions are generally considered to be resistant to change. As Williamson and Payton (2009) point out, any kind of educational change is challenging, messy and slow. Schools, in particular, face an enormous challenge, as there is a pressure to achieve in different areas and as new requirements do not shade or substitute old ones (Christensen et al., 2008; Punie,

Cabrera, Bogdanowicz, Zinnbauer, & Navajas, 2005). Moreover, it is quite unlikely that an institution can provide disruptive change. By disruptive innovation, Christensen et al. mean a kind of innovation that is not only preoccupied with the improvement of an existing product (which is called incremental innovation); but which radically changes the paradigms and principles of the product. A good example of the concept is the case of the personal computer.

Up until the time of its creation, computers were big, expensive machines that only expert could use. Sustainable innovation made newer, faster, bigger computers. The advent of the personal computer changed the market, as the product was not as "good" or as sophisticated as big computers were, but it targeted another type of client (a previous "non-consumer"). So the introduction of personal computers is a disruptive innovation because it changes the "idea", market and target of computers, even though its base level was not as powerful as the big traditional computers (Christensen et al., 2008). Hargreaves (2003) maintains that the idea that lies behind disruptive innovation is the opposite to that of sustainable innovation.

Schools do not seem to possess the characteristics of innovative organizations, which are generally flexible, welcome ideas, are empowering, tolerate risk, celebrate success, foster synergy and encourage fun (Craft, 2005). Even the implementation of technology in education has not made the foreseen change: ICT has not had the transformative impact it could have had and which was expected (Ala-Mutka, Punie, & Redecker, 2008b). According to Christensen et al. (2008), this is because teachers have used computers to sustain their existing practices, as displacing them would require a kind of disruptive innovation that is not yet feasible. If there is a desire to change education, all educational actors should be involved and must work towards the same goals. Moreover, it is necessary to promote creativity at all levels, as creativity can contribute to both sustainable and disruptive innovation. Innovation cannot happen without creativity.

True innovation in education will require, first of all, a paradigm shift in format and methodology (Simplicio, 2000). This will entail a constant and total renovation, regardless of previous effectiveness. The main actors of change are teachers (Redecker, 2008), but without institutional support they could not only ignite but also kill creativity and innovation. They are the first and most effective source of creativity for learners (Esquivel, 1995), therefore they need both the support and the resources to innovate. Teachers tend to settle in and become

comfortable in their profession (Simplicio, 2000). However, teaching careers can last for forty years, and it seems unthinkable to expect that several generations of students would benefit from the same approach (Pedró, 2006). Teachers who wish to be creative have to be willing to change their approach and method (Simplicio, 2000). Teaching creatively and for creativity is not about adding a few pictures to a handout or a presentation, or making students listen to music. Educators run the risk of falling into the originality pitfall, believing that creativity is a synonym of originality (Beghetto, 2007a). Innovating education involves a complete change in the content and method of teaching, and also in assessment (Simplicio, 2000). There are already pockets of creativity and innovation in several schools, these "best practices" must become standards for education.

Technology can help to bring about change (Christensen et al., 2008). The development and implementation of student-centric technology will bring a need to shift to student centered pedagogy and the ownership of learning by learners, a quality that is indispensable for fostering creativity (Woods, 2002). Students could learn with software that is developed for their kind of intelligence and learning style (Christensen et al., 2008). In this way, teachers will not be instructors anymore but rather facilitators (Burke, 2007).

Another path to innovation in education would be the establishment of a network of teachers to disseminate good practice (Hargreaves, 2003). Schools are a good repository of expertise and variety; teachers have therefore to be encouraged to share their expertise through the observation of other teachers within and outside their school (Simplicio, 2000). Another option could be the establishment of an institutional virtual network of expertise, where teachers could exchange resources and tips (Hargreaves, 2003). Again, technologies are fundamental for this kind of transformation, as ICT can be an effective and affordable means of peer-to-peer exchange and networking.

Curricula for creative learning and innovative teaching

Runco (1990) affirms that the thinking of children at all levels of ability is significantly influenced by the type of opportunities they are given. Offering learners the right chances to develop their cognitive and creative potential should be a priority in the design of school curricular. A curriculum is the way in which domains of knowledge are made available to students (Craft, 2005) and it establishes a vision of the kind of society which policy-makers want and envisage for the future (Williamson & Payton, 2009). It may be said that a

curriculum is a political act, which involves several stakeholders (Williamson & Payton, 2009), including the parents. Therefore, choices on what to include in the curriculum should benefit not only the learners (Williamson & Payton, 2009), but also meet the demands of different stakeholders.

In order to foster creative learning and innovative teaching, curricula need to undergo a skilful and thorough development, where re-balancing is a key factor. The literature identified several aspects for enhancing the curriculum: the balance between different areas of education; the balance along the curriculum (from pre-school to higher education); the balance between prescription and freedom; and finally the balance between students' interests and other educational stakeholders' agendas.

What does creativity mean in education?

In education, the term creativity is often used but seldom defined. As Beghetto (2005) points out, teachers might ask students to use their creativity in the design of a project, or might refer to a student's response as creative, without explaining what they mean. A lack of definition of this concept might result in erroneous assumptions (Beghetto, 2005), leading teachers and students to identify creativity only with talent, the arts and personal characteristics.

The Trans disciplinary theories on creativity do not help to frame the issue, as they often focus on outstanding performances (Runco, 2003), thus reinforcing the link between natural ability and creative achievements. Research has demonstrated that creative eminent people have in common several personality traits (Simonton, 1990); however this does not mean that creativity is limited to natural ability or talent. On the contrary, creative traits should be identified and studied in order to be able to duplicate and teach them (Simplicio, 2000).

- The first step towards creative learning and innovative teaching requires an understanding of the meaning of creativity for education and its implication. This entails a threefold procedure:
- A de-construction of several current myths about creativity which are leading to a shared Misunderstanding of the issue (Sharp, 2004); a discussion and framing of the implications of "newness and value" in the educational context (Craft, 2005);
- An emphasis on the process instead of the product (Runco, 2003).

Creativity and Innovation in Education

Psychometric approaches have highlighted that creativity is often seen as a talent, or as a characteristic of eminent people, and distinctive personality traits have been identified to exemplify a creative mind. At the same time, a number of studies recognize that creativity can be enhanced and cultivated. Craft (in Craft, Jeffrey, & Leibling, 2001) distinguished two different trends in research on creativity and developed the concepts of "big C" and "little c Creativity". The first (big C creativity or BCC) refers to the creativity of the genius, seen in people such as Mozart, Picasso, and Einstein. Their creative achievements are exemplary and comprise novelty and excellence in their domain, as well as social recognition and valuation. Little c creativity (LCC), on the other hand, is not for the gifted and talented and does not apply to creative and innovative outbursts that have a strong impact on society. LCC could be seen as behavior and mental attitude, or as the ability to find new and effective solutions to everyday problems. LCC is not for an extraordinary few. A similar distinction can be found in Shneiderman (2000), who differentiates between revolutionary creativity, imputable to Nobel Laureates and geniuses, and evolutionary acts of creativity, which can include doctors making a diagnosis or an editor drafting a magazine.

LCC seems particularly suitable for the educational sector, where a priority is to encourage all students and pupils, who have not yet reached their intellectual peak, to achieve their full potential. This paper will therefore endorse an inclusive or democratic perspective of creativity, which sees all people as capable of creativity from early childhood onward (Craft, 2005). According to this idea, creative potential can be found in every child (Runco, 2003); it can be encouraged or inhibited (Sharp, 2004); and its development depends on the kind of training people receive (Esquivel, 1995).

Given the benefits of creativity to society and individuals, one would expect to see a celebration of creativity in education (Beghetto, 2005). However, though, there has been a growing interest in the relevance of creativity for teaching and learning since the 1990's (Craft, 2005), it seems that attempts to bring this issue to centre stage have been overshadowed by other efforts, and demands on teachers' and students' schedules (Beghetto, 2005).

This study will argue that creativity and innovation in education are not just an opportunity, but a necessity. First, several emerging trends entail an alteration in the way

young people learn and understand (Redecker, 2008). Teachers have to attract students' interest and attention in a new way and as a result the development of creative approaches is called for (Simplicio, 2000). Secondly, the current and forthcoming cohorts of learners are growing up surrounded by video-games, mobile phones, and other digital media. This overwhelming spread of technologies brings a new understanding of communication, information retrieval and meaning-making. The gap between the school and home digital environment is thus affecting learners' expectations (Pedró, 2006), building up a perception of the current educational framework and format's inadequacy (Selinger, Stewart-Weeks, Wynn, & Cevenini, 2008). Third, creativity has been seen as a form of knowledge creation (Craft, 2005). For all these reasons, it seems clear that creativity and innovation are unavoidable conditions for the present and future of education.

Nevertheless, it must be noted that, in the educational sector, creativity and innovation lose some of their areas of overlapping. This is mainly due to the current role of the learner in formal education. Learners are perceived as the end recipient of methods, pedagogies and knowledge. Although they are the major stakeholders in education, their current power to actively contribute to institutional change is limited. Innovation, as stated previously, is the "implementation" (OECD, 2005) or the "intentional introduction and application" (West & Richards, 1999) of a novelty which aims to ameliorate a particular situation. Teaching can be seen as the implementation of methods and pedagogies, and of curricula and contents. Any kind of teaching which addresses creativity and applies it to methods and contents can be seen as innovative teaching. At the same time, the cognitive approach to creativity emphasizes its connection to knowledge and thinking skills, bridging the creativity process with learning. For these reasons, this work addresses "creative learning" and "innovative teaching". The first term refers to the possibility for learners to develop their creative skills and to learn in a new, creative way. The second term includes both the process of teaching for creativity and the application of innovation to teaching practices.

Technologies for Learning, Creativity and Innovation

The debate on the role of ICT for creativity and innovation in education has become an important one over the past decade. The rapid development of technology, mainly as a result of the Internet, has brought about an upsurge of technological tools which young people are appropriating for use in their everyday lives. As explored by the domestication theory, the

arrival of ICTs in homes has brought the mobilization of material resources, skills, cultural values and social competences and capabilities (Silverstone, 2006). The recent rise of social media is also having an impact on education. These applications have shifted the way users seek information and the way knowledge is created. The potential of *relational* communities, as opposed to *locational* communities (Bess, Fisher, Sonn, & Bishop, 2002), allows expansion of interests and expertise with people outside one's local community who are interested in the same topics. These new forms of communities facilitate collaboration across space and time. Evolution in communication practices suggests that developments for pedagogy need to address what it means to be educated in our times (Loveless, 2007), so as to avoid 'yesterday's education for tomorrow's kids' (Prensky, 2005).

In the past few years, the emergence of a new wave of technologies has been observed. The rapid uptake of these technologies, which are generally referred to as social computing applications, has also taken many by surprise. Social computing applications vary from social networking sites (like Face book; MySpace); sharing of bookmarks (del.icio.us; Citeulike); sharing of multimedia (Flickr; YouTube), online gaming (Second Life) and blogging, to mention but a few. These applications offer new opportunities for people to express their creativity, make it available to a large audience and get feedback and recognition (Cachia, Compano, & Da Costa, 2007). Analysis of creative people and artistic innovation demonstrates that scientific and artistic innovations also emerge from collective effort. This is commonly referred to as *social creativity* (Fischer, Giaccardi, Eden, Sugimoto, & Ye, 2005).

As discussed by Fischer (Fischer, et al., 2005), an appropriate socio-technical setting can amplify creativity amongst a group of people by augmenting individual creativity and also social creativity.

Blogging is an example of how youngsters are using technologies to express their creativity and to be innovative. Creativity can be at both the individual level and the collective level.

These applications demonstrate the variety of ways in which *users learn how to learn*, which according to Rogers (1983), is a major component of creativity. The example of blogging shows that children learn how to write for a public, how to link their work to other works, how to network with other bloggers, how to utilize the blog for their eventual career paths amongst other skills. This facilitates creative learning, as it enables users to use

technology to learn in new, creative ways. Such learning processes demonstrate that technology has great potential for creative learning. Technological skills are important not only for children at schools but also for lifelong learning (EC, 2008c). The different levels of interaction and collaboration characteristic of new technologies facilitate *personalization of learning paths*. Learners become active stakeholders, who are 'empowered to shape their own learning spaces and resources' and *collaborative learning* processes (Ala-Mutka, Bacigalupo et al., 2008).

Continuous technological change means that learners today need to develop positive attitudes towards change and also, adaptability (Hinkley, 2001). As Hinkley argues, students in the future will endorse 'portfolio careers', moving through several careers and different jobs, including jobs that today still do not exist. Hence, it comes as no surprise that substantial pressure is being put on schooling systems to acknowledge new ways of dealing with continuous rapid technological development. Young people today, often referred to as the *NetGen* or *Google Generation* (Herold, 2009), are growing up surrounded and immersed in technology. Appropriation of technological platforms requires new approaches for education. This section explores how ICT could act as a platform for fostering creative learning and innovative teaching in education and how the education sector may leverage on the opportunities brought about by the new wave of technologies.

Traditionally, creativity has been associated with the artistic world, however, as Florida (2002) argues, creativity is an important component of economic growth and social transformation. Technology, he argues, is one of the major components for fostering future creative communities, together with Talent and Tolerance.

In terms of innovation, social computing interfaces are particularly interesting in this debate because in various ways they harness the emerging and increasing role of the user in the innovation-development process, as well as the ongoing shift towards open innovation (Lindmark, forthcoming 2009). Various online applications could be used to empower teachers to become innovative in their teaching, as well as students to develop their creative skills and learn creatively.

Summary

This report has provided an overview of how creativity and innovation are conceptualized in the context of education as well as in training and the emergence of a knowledge society. The existing research on creativity and innovation is broad, complex and addresses multi-faceted concepts. For this study, creativity and innovation are understood as interrelated concepts; the first refers to a product or process which shows a balance of originality and value, and the second to the implementation of such a process or product in a given sphere.

The notion of creativity has been researched in various fields and approached in several ways. This report shows that creativity can be linked to different factors, residing both in the individual (cognitive abilities, thinking skills, personality traits, knowledge), and in the surrounding sphere (culture, environment, field and domain). Creativity can be linked to cognitive and thinking processes as much as to emotional states, such as intrinsic motivation and affective learning processes. To sum up, all the theories studied indicate that creativity is context dependent, and arises in the interplay of a number of factors and requisites which can be supported and/or suppressed.

This report has argued that creativity and innovation are strongly interrelated but it has also proposed a differentiated approach for the field of education in which creativity is more strongly linked to learning, and innovation to teaching, hence the notions of *creative learning* and *innovative teaching*. Research indicates that, for a multitude of reasons, creativity is currently not at the centre of education practices. This suggests that there is a need for a change in pedagogy towards a more permissive environment which cherishes students' ideas, encourages risk-taking and mistakes, and allows learners to assume ownership of their learning. The traditional configuration of school space, time and structure also needs a shift and re-organization for creativity to blossom.

Creativity and innovation in education are not just an opportunity, but a necessity. This work highlights an inclusive and democratic perspective of creativity, which sees all people as capable of being creative from early childhood. However, whether people develop their creativity depends on the kind of training they receive. Accordingly, creativity should be understood as a skill which may be developed through creative learning and innovative

teaching. The fostering of such skill depends substantially on the development of curricula, where a balance among the different subject areas, between prescription and freedom and in agendas should be a priority. Assessment in schools also needs to be addressed as current methods often do not take into account creativity and may even stifle it. The rapid development and take up of technology, especially by young people, has a significant impact on education, challenging educators and institutions to address the changed learning patterns and needs of their students. The emergence of social computing applications, in particular, allows for personalization of learning paths, making learning opportunities tailored to the individual's needs a reality. New digital formats employing a variety of media tools open up new sources and resources for creative expression. Collaboration and networking services offer further opportunities to develop creative ideas in cooperation with others. Both creativity and ICT require the re-definition of the role of the teachers as enablers, motivators, mentors and coaches of learning processes that are essentially owned and controlled by the learners themselves.

The fostering of creativity and innovation cannot rely on the intention of educators and pupils, as there are several conditions to be met to promote a creative and innovative learning environment. Therefore, a set of 'enablers' is proposed as a framework for understanding the conditions or the support mechanisms that allow creative learning and innovative teaching to emerge, and thus facilitate creativity and innovation. These are: assessment; culture; curriculum; individual skills; teaching and learning format; teachers; technology; and tools.

In conclusion, this report provides a theoretical grounding and a working definition for creativity and innovation. It also explores the role and function of creativity and innovation in the educational domain and the factors which are likely to enable or inhibit creative learning and innovative teaching. Finally, it analyses the role and potential of ICT and in particular, social computing, in fostering creativity and innovation in education.

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DO HR COMPETENCIES DIFFER ACROSS INDUSTRIES AND ROLES?

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Abstract

The purpose of this research is to identify the competencies required in HR professional working in different roles and in different sectors of industry. The sector-wise and role specific competencies have been identified on the basis of the data collected on random sampling bases from industries of NCR of Delhi. In order to have data on different sectors industries of IT, Manufacturing, Insurance, FMCG, Govt. and some other industries were selected. Two rounds of surveys have been conducted. In the first round the respondents were asked to rate the Boyatzis list of competencies and were also asked to list other competencies which they would like to have in fresh MBA-HR graduate. List of 51 competencies were identified from the responses from different domains of industry. In second round respondents were asked to prioritize the competencies for four HR functional roles i.e. strategic partners (SP), change agents (CA), employee champion (EC) and administrative experts (AE). The data was analyzed using SPSS program. In order to test the significant difference between more than two sectors of Industry Bonfferoni post-hoc test was applies. The analysis of data on required HR competencies for different roles and in different sectors of industries show that the competencies are role specific and do not change sector wise.

Key words: *Competencies, MBA-HR, sectors of industry and Ulrich's HR Roles Model*

Introduction

The role and competencies of HR professionals are more critical today because of increasing performance requirement in organizations and their changing roles. Corporations are facing pressures from different stake holders of business environment. The changing need of management expertise to face the contemporary challenges of management requires development of competencies for various functions of HR in changing business scenario (M A Mamun & A B Mohamad, 2009). This paper aims at identifying competencies which are required by industries in an HR professional in changing business scenario in the context of Four-Roles Model first presented by Conner and Ulrich (1996), and later by Ulrich (1997).

The main contribution of the David Ulrich's HR Model was the start of the movement from the functional HR orientation to the more partnership organization in HR management function. Ulrich (1997) states that HR can help deliver organizational excellence by means of four methods. First, HR should become a partner with the management of the firm in helping with strategy execution. Second, HR should contribute expertise in efficient and effective performance of work, so that costs are cut and quality is maintained. Third, HR should represent the concerns of the employees to senior management as well as working with employees to increase and ensure their ability to contribute to the organization through their competence and commitment. Finally, HR professionals should continually contribute to the process of change and help improve the organization's capacity to do so. Ulrich suggests that given the business challenges that organizations face today – globalisation, profitability through growth, technological change, intellectual capital and continuous change – success depends upon building core capabilities such as speed, responsiveness, agility, learning capacity and employee competence of the organisation. The HR function is crucial to organisations achieving excellence (Dave Ulrich, 1998).

Methodology

Survey of industries based on an open ended questionnaire has been conducted, through emails on random sampling bases for the identification of competencies desired among human resource management master's degree graduates. The questionnaire was circulated among industries of National Capital Region (NCR) of Delhi working in various sectors like IT, Manufacturing, Insurance, FMCG, Government and others. The Part -I of the questionnaire consisted of questions pertaining to the organization, company profile, and number of human resource management master's degree graduates recruited by the organization of the respondent. In Part- II of the questionnaire respondents were asked for their opinion regarding competencies desired. List of 51 competencies have been identified from the responses from different sectors of industry. In second round respondents were asked to prioritize the competencies for the HR functional roles i.e. strategic partners, change agents, employee champion and administrative experts as per Ulrich 1997 model. Based on the study the competencies were ranked for all the four roles of HR. The data was analysed using SPSS program. In order to test the significance difference between more than two sectors of Industry Bonfferoni post-hoc test was applied.

Result and discussions

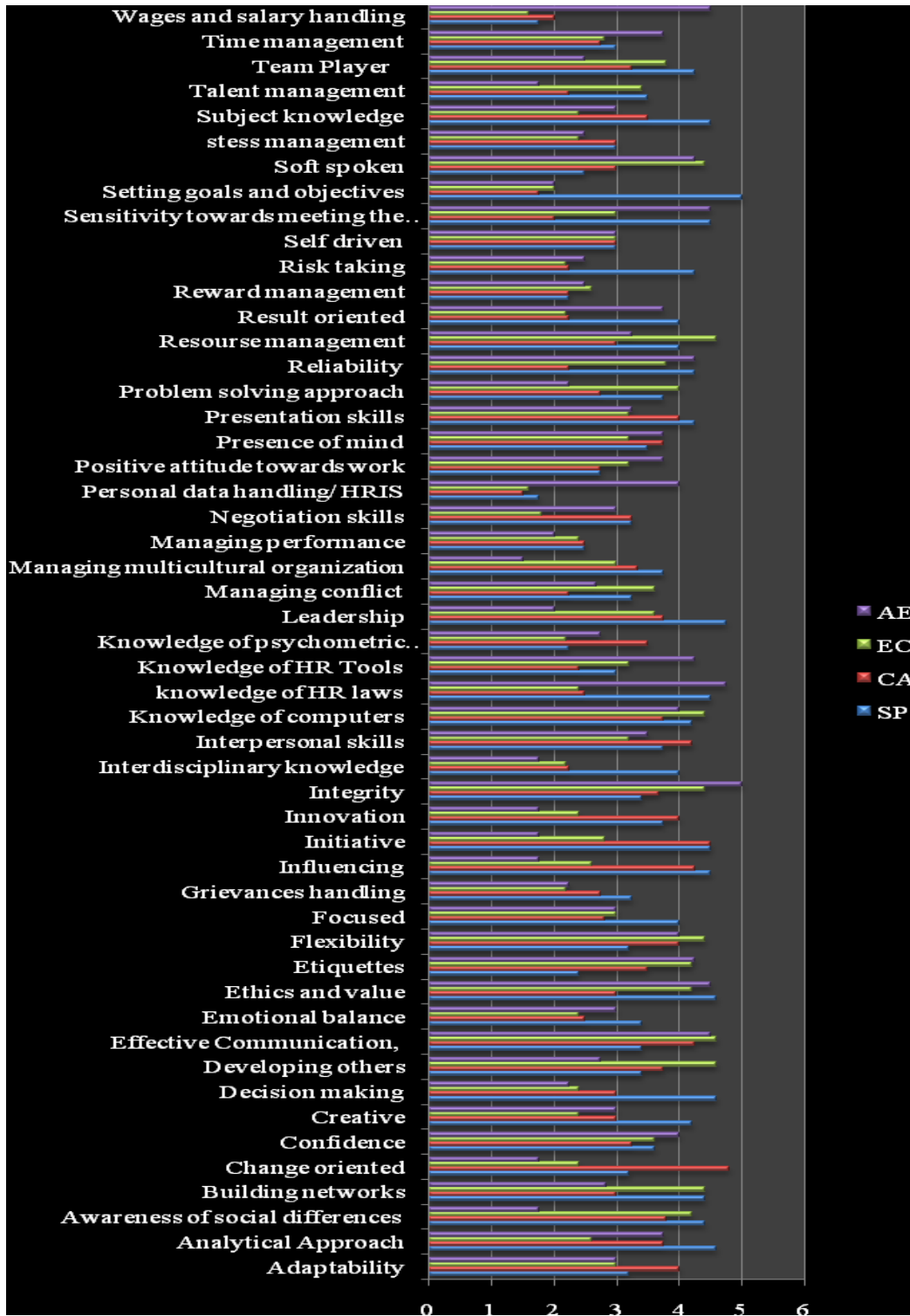
The perception of industry professionals on the importance of competencies desirable in a human resource management master's degree graduate has been derived from the survey based on an open ended questionnaire conducted among 148 companies of NCR of Delhi working in different sectors as mentioned in the methodology section of this paper. Industries operating in different sector were selected as sample so as to have broad sector-wise view from industries.

The personal data collected from Part-1 of the questionnaire were analyzed and found that:-

- The perusal of the company profile of the respondents and the business operations of their company brings out that many of them are global players and therefore their challenges are multifaceted.
- The respondents are mostly in the middle and top management levels.
- The respondents had long experience in industry- 14 of them have 30 years of experience, 28 have 24 years of experience, 28 have 17 years of experience, 23 have 13 years of experience, 22 have 10 years of experience and 33 of them have less than 10 year of experience.
- The respondents were from different functional roles of HR- 32 of them were from change agent, 26 had strategic partner role and rest were in employee champion and administrative expert roles.

The competencies suggested by the respondents in response to the open ended questionnaire were compiled to get a list of 35 competencies. This compiled list of competencies was again sent to the same respondents and they were asked to prioritize them in the scale of 1 to 5. To get a broader view this list of competencies was also sent to some more respondents of industries. They were further asked to suggest other competency/ competencies desired in MBA HR graduates. A list of 51 competencies was thus compiled. This list of 51 competencies was again sent to the respondent and they were asked to prioritize each competency on the basis of four roles given by Ulrich 1997 (Strategic Partner, Change Agent, Employee Champion and Administrative Expert) in the scale of 1 to 5. Mean of each competency was calculated and plotted on the Likert Scale of 1 to 5 in Figure-1. The purple colour bar shows the mean of the competencies corresponding to Administrative Expert. The green colour bar shows the mean of the competencies corresponding to Employee Champion. The red colour bar shows the mean of the competencies corresponding to Change Agent. The blue colour bar shows the mean of the competencies corresponding to Strategic Partner. Based on the mean values of the competencies top 5 competencies corresponding to four functional roles of HR have been listed in Table 1. It can be seen from the table that the competencies required for different functional roles of HR vary according to the functional requirement of HR professionals. It can be seen that industry today attaches lot of importance to competencies such as effective communications and ethics & value. It is also observed that that equal emphasis is being given to soft skills and technical skills. Setting goals and objective (m=5) is the most important competency for strategic partner roles whereas developing others (m=4.6) is most important for Employee champion, for change agent the professional has to be change oriented (m=4.8) and Integrity (m=5) has been considered very important for an administrative expert.

Figure 1 : COMPETENCIES CORRESPONDING TO THE FOUR FUNCTIONAL ROLES OF HR



X-Axis: Likert Scale

Y-Axis: Competencies

TABLE 1- TOP FIVE COMPETENCIES ON THE LIKERT SCALE CORRESPONDING TO THE FOUR FUNCTIONAL ROLES OF HR

Strategic Partner	Change Agent	Employee Champion	Administrative Expert
1. Setting goals and objectives	1. Change oriented	1. Developing others	1. Integrity
2. Leadership	2. Initiative	2. Effective Communication	2. Knowledge of HR laws
3. Analytical Approach	3. Effective Communication	3. Resource management	3. Effective Communication
4. Decision making	4. Influencing	4. Building networks	4. Ethics and value
5. Ethics and value	5. Interpersonal skills	5. Flexibility	5. Sensitivity towards meeting the deadline

The identified 51 competencies were based on the data collected from IT, Manufacturing, Insurance, FMCG and others like Government etc. A point of study is to find out the significant difference in importance of each competency between different sectors of industries. For this purpose Bonfferoni post-hoc test of SPSS program was applied and results were tabulated for each competency and for different sectors of industry. Comparison of results show that out of 51 competencies (as listed in Figure-1) 42 do not show significant difference between the considered sectors of industries whereas 9 shows significant difference ($\text{sig} < 0.05$) between the considered sectors. For example adaptability, confidence, effective communication, and analytical approach have been perceived equally important for all sectors of industry where as awareness of social difference show significant difference ($\text{sig} < 0.05$) between IT and insurance sectors.

In order to analyze the role-wise significant difference (Ulrich HR roles model) the Bonfferoni test was applied and the result shows that competencies such as confidence, self driven, effective communication and knowledge of computer don't change for different roles of HR. The remaining 47 competencies show significant difference among the roles.

Conclusion

This study identified competencies which are perceived as important by Industry, in MBA – HR graduates. The results show that industry attaches lot of importance to competencies such as effective communications and ethics and values. On analysis of the data it is found that equal emphasis is being given to soft skills and technical skill related to Human Resource Management. In the Likert scale of 1 to 5 it has been found that setting goals and objective is the most important competency for strategic partner roles whereas developing others is most

important for employee champion. For change agent the professional has to be change oriented and integrity has been considered very important for an administrative expert. Emotional Balance, Confidence, Grievance Handling and Presence of Mind are a few of the overlapping competencies for all four roles of HR.

The Bonfferoni post-hoc test results show that out of 51 competencies (as listed in Figure-1) 42 do not show significant difference between sectors of industries whereas 9 shows significant difference ($\text{sig} < 0.05$) between the considered sectors. It also shows there is no significant difference for competencies such as confidence, self driven, effective communication and knowledge of computer. The remaining 47 competencies show significant difference among the roles.

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INFORMATION TECHNOLOGY INITIATIVES –
A REVOLUTION IN BANKING SECTOR

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Abstract

Integration of banking system using Information Technology to provide solution rather than products is the most emerging trend in modern banking. Information technology has brought about a fundamental shift in the functioning of banks. It has helped them in making them improvements in their internal functioning and also enabled them in smooth integration, being globally competitive and providing customer delight. This rapid transformation during last decade in Indian banking industry has made it stronger, efficient, responsive to customer needs and a lot more competitive. Customers no longer need to visit the branches for their day to day transactions like cash deposits, withdrawals, collections, balance enquiry, etc. E-banking and Internet age banking has opened new avenues in convenience banking. Internet banking is a strategic necessity to increase customer convenience, reduction in transaction cost and greater speed of response for banks. Entry of ATMs has changed the profile of the front offices in bank branches. Such information technology advancements have had major effects on banking relationships. This paper discusses about the information technology initiatives in the banking industry as a revolutionary phase.

Introduction

Information technology has turned out to be so omniscient that any system lagging behind technology adaptation is considered as outdated and conservative. The inherent strengths of technology and the advantages of leveraging it, is quite important for banking sector because of its scope and services. IT is changing the banking industry and is having the major effects on banking relationships. Banking is now no longer confined to the branches where one has to approach the branch in person, to withdraw cash or deposit cheques or request a statement of

accounts. In true internet banking, any enquiry or transaction is processed on line without any reference to the branch any time. Providing Internet banking is increasingly becoming a “need to have” then a “nice to have” service.

Changing scenario of Indian Banking

Indian banking sector has played a commendable role in sustaining its growth keeping pace with the changing technology. Banking industry across the globe has undergone a tremendous change in the way the business is conducted. It is the first major non military sector of the world to be economy to be computerized. The technology has influence every aspect of banking system. With the development of technology and advent of the internet, customer’s expectations of services and products have risen to great heights.

The financial reforms as well as globalization and liberalization measures during 1990’s have brought completely a new operating environment to the banks. The arrivals of foreign and financial institutions, setting up of a number of private players and measures of de-regulation have introduced a tough competition in this sector.

Presently Indian Banks are combing traditional banking along with the new age technology to enhance customer service and beat competition. Services and products like anywhere banking, Tele-banking, internet banking, web banking, e-banking etc have become the buzz word of the day. Banks are trying to cope with the competition by offering innovative and attractive packaged technology based services to their customers.

Computerization in public Sector Banks (as on March 31, 2006)

- 1) Branches already fully computerized # 48.5%
 - 2) Branches under core banking solutions 28.9%
 - 3) Fully computerized Branches 77.5%
 - 4) Partially computerized branches 18.2%
 - 5) Non computerized branches 4.3%
- # Other than branches under Core Banking Solutions.

(Source – Reserve bank of India)

IT Initiatives In Banks:

In the Indian market, various IT –based banking products, services and solutions are available. The most common of them are: Phone banking, ATM Facility, Credit, Debit and Smart Cards, Internet Banking and Mobile Banking, SWIFT networks and Infinite network, connectivity of bank branches to facilitate anywhere banking. Besides this software's are also available to support bank's various requirements ,such as ,MIS helping the bank to generate RBI reports like SLR,CRR etc., NPA management, Asset & Profitability Assessment, Intelligent Balance Sheet Analyzer, Relational Database Management Systems for management of data mining from data ware house.

Bank of India has adopted a number of state of the art techno-products to provide tailor made solutions to its customers. The technology products like star-e-pay- an internet based option to make payments for electricity/phone/gas bills etc ,core banking solutions, multibranch banking, star insta remit –instant transfer of money through RTGS enabled bank/branch, star-e –remit for transferring money from branch abroad.

Floating ATMs ferry of SBI is an example of how technology is reaching out to customers.

Information Technology, a tool supporting banking system:

“To emerge as a prime national bank backed by modern technology, meeting customers’ aspirations with professional banking services and sustained growth contributing to national development.”

As reads the mission of one of the leading banks of India. No wonder ,the objectives of the technology initiatives of the bank in India are aligned to meet their business strategies through better refined business processes, providing technology enabled products, services and solutions, improving competitive edge, hastening decision making process and so on, with the customer as the focus.

Few of the important IT solutions available for banking services are discussed below:

1. Core Banking Solutions (CBS)

The traditional brick and mortar bank branches are getting networked and becoming an integral part of an enterprise wide banking platform, called core banking solutions (CBS). It is enabling the banks to introduce several innovative, multicurrency –at- par cheques, internet banking etc. VIJAYA BANK, one of the leading public sector banks, under the CBS project, has set up its own data centre, while the disaster recovery site has been co-hosted at the vendor's place.

2. Data Mining

Data mining, also referred as analytical intelligence, is the process of selecting, exploring and modeling large amount of data to uncover previously unknown patterns for business advantage, reading banks are using DM tools for customer segmentation and profitability, credit scoring and approval, predicting payment default, marketing, detecting fraudulent transactions, cash management and forecasting operations, optimizing stock portfolio's and banking investments etc. In addition, banks may use data mining to identify their most profitable credit card customer or their highest risk loan applicants.

Specific Uses of Data Mining

Market segmentation: Identify the common characteristics of the customers who buy the same products from the company.

Customer churn: Predict which customers are likely to leave the company and go to a competitor.

Fraud Detection: Identify which transactions are most likely to be fraudulent.

Direct Marketing: Identify which prospects should be included in the mailing list to obtain the highest response rate.

Interactive Marketing: Predict what each individual accessing a website is most interested in seeing.

Market Based Analysis: understand what products or services are commonly

purchased together e. g. beer and diapers.

Trend Analysis: Reveal the difference between a typical customer this month and last.

3. Real Time Gross Settlement

It is a method of payment systems in which all transfers made between participating banks are cleared and settle irrevocably. As a result, a bank can be reasonably sure to receive a payment once it has been cleared and credit and systematic risk in the settlement process are minimized.

4. Mobile Banking

Mobile technology helps in bringing the masses into the financial systems and in ensuring easy financial inclusion. Mobile phone once considered a luxury is now a necessary instrument even into a richshawala/farmer. It provides all services like ATM, it is time saving and cost effective technology. It is referred as wireless banking, SMS banking, or m- banking. For this you do not require PC worth Rs. 50,000/-, you can manage with your mobile.

5. Automated Teller Machine

Implementation of ATMs by banks makes certain services available 24 hours a day. These services include cash withdrawal, cash advance, transfer from account to account, cash/cheques deposits, balance inquiry, cheques book request, statement request. In this the customer is issued an access card and a six digit secret number known as PIN (personal identification number). Now banks are going for using biometric ATMs using thumb impression for identifying the customers.

6. Internet Banking

Internet banking is the changing face of the banking in the new millennium. Internet banking offers innovative services like customer can view his account, credit card and home loan balances, accrued interest, fees and taxes, transactions detail of each account, pay bills , transfer funds to third party accounts, right from the terminal he is sitting at.

7. Communication Networks

The second Rangarajan Committee constituted in 1988 drew up a detailed perspective plan for computerization in banks and for extension of automation to areas like fund transfer, electronic mail etc. Based on these recommendations RBI has set up different levels of communications which has become backbone for interconnectivity among banks branches. They are BANKNET, INFINET (Indian financial networks), S.W.I.F.T, EDI (Electronic data interchange), EFT (Electronic funds transfer), MICR CLEARING, ECS, and ATM NETWORK.

Challenges before a bank to become fully IT enabled

One of the challenges before a bank, which is trying to become IT enabled is that the data is scattered across the countries. Integration of this data is necessary if the banks have to succeed on the net.

Other challenges are related to the move towards expanding the basket of financial products being offered by financial service providers. In developed countries, Financial Service providers are using the internet as a media for expanding into new products. Banks are getting into mutual funds and vice-versa. However, in India, archaic regulations do not allow companies to have a close relationship with the banks owned by them or to offer products, which are offered by another category of service providers. As a result, companies like ICICI are forced to keep their banking arms separate from the main company. They are also prevented from offering products which fall under the preview of banks. It prevents Indian Financial Service providers from exploiting the power of the web

Besides that, the cost and investment required to implement information technology tools in banking is in crores of rupees (R. P. Singh, 2007). It is not only the product software structure but also the professional service fees which escalate the cost. Product software structure comprises of one time license fee annual maintenance charge or the Annual License Fee which can vary from 10 to 20 percent of the software cost. This usually includes all the enhancements of the product that the vendor will release from time to time. And the third will be the professional service charges. Service charges will be applicable

to all activities in which the professional of the vendor will be working. The last component is most prone to cost surprises.

On the other hand, Professional Service Charges are marked as per-day fee for vendor professionals, allowance and hotel charges (if applicable). Normally banks are overburdened with the fees they need to pay to these professionals.

The main culprit here is the professional fee for consultants. It is not always necessary that the vendor engineers are the most proficient ones. In fact most of the vendors send only the second or third line of consultants / engineers for implementation projects. This means that while the vendor consultants are refining their skills on their product, you keep paying more and more. Or you become their training ground. Besides, the professional service effort is always an estimated effort; you cannot bind the vendor once the work agreement is signed off.

In situations where the system integration has to be done between two different systems, such as in the case of Internet banking or treasury systems, which have to be connected to the core banking system using APIs (Application Programming Interface), the risk of cost escalation on this account increases many folds.

The one way out seems to be to provide for a fixed charge for professional services. Most probably you will have selected the product through a quotation process from a number of vendors. And you can insist on a fixed charge for the professional services, else the quotation has no meaning. Another alternative is to have a man-days budget with a variation cap incorporated in the contract.

Advantages of IT in Banking:

The IT has leveled the playing field and afforded open access to customers in the global market players. Internet banking is a cost effective delivery channel for financial institutions. Consumers are enjoying benefits of Internet banking. Access to ones accounts at any time and from any locations via the World Wide Web is a convenience unknown a short time ago.

The six major advantages of IT in banking are:

- Improved customer access
- Attract new customers
- Facilitate the offering of more services
- Reduce customer attrition
- Provide services offered by competitors
- Increase customer loyalties

Conclusion:

Emergence of IT as a power full tool for banking sector is now a universally accepted fact and is increasingly becoming essential and important part of all banking procedures. In today's rapidly changing "jet and net" age nobody can even think about conventional, time taking, irritating banking procedures of yesterday

IT has brought about a fundamental shift in the functioning of banks. It has helped in making them improvements in their internal functioning. Customer no longer needs to visit the branches for their day to day transactions. Internet age banking has opened new avenues in convenience banking.

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MANAGEMENT OF LUBRICANTS

(STORAGE AND HANDLING)

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Abstract:

The principle of supporting a sliding load on a friction reducing film is called lubrication. The substance which forms such a film is called lubricant. It is a fact that fluid friction is much lower than solid friction. The example is that a boat can be more easily towed across water than it can be dragged on land. Therefore if, it is necessary to reduce the friction between two sliding surfaces, a fluid or fluid like film should be interposed between the sliding surfaces. All the liquids are able to provide a fluid film but however, some materials are better suited than others in providing proper lubrication. The materials which do not stick on sliding surfaces or do not form suitable thin layers between sliding surfaces are not suitable for lubrication e.g. mercury and alcohol. Mercury is not sticking on the surfaces and alcohol is forming very thin layer on surfaces which is not adequate to carry the loads. So mercury and alcohol are not suitable for lubrication. Properly planned storage and handling system of lubricants gives many benefits to industries. It gives the guarantee that quality of lubricant is same as it was supplied i.e. there is no chances of quality degradation. It ensures that there is no contamination in product. Losses due to leakage and handling are reduced. The chances of using incorrect grade and mixing up of products are eliminated. There are multimillion losses to Indian Industries in lubricants due to inadequate system of storage and handling. If, perfect system of storage and handling of lubricants is adopted, this amount can be saved.

Introduction:

The basic purpose of the lubrication is to reduce friction between the two sliding surfaces, minimize the wear of sliding surfaces, dampen the shock if exerted on the sliding surfaces, cool the relative moving surface in contact, prevent the corrosion effect and seal out for contaminants. Generally the lubrication materials which may be used as lubricants are water, lard or tallow, fish or vegetable oil, graphite or talk and petroleum products like oil and greases. Water can provide a film between the moving or sliding surfaces effectively but it is undesirable because it is squeezed out under load and it

causes rusting to ferrous parts. Lard, tallow, fish and vegetable oils have the disadvantage that they all are susceptible to decomposition when they come in contact with heat and moisture.

It has been seen in many industries either in India or in Abroad, that the Oil Godown is full of spilled and scattered oil at all around the site. Every day maintenance personnel in plants across North America fill or top-up systems with new lubricants. Their intention is to enhance the life and performance of the equipment. Yet, unknowingly they often add or mix chemically-depleted lubricants containing particulate, chemical and moisture contamination. Poor system of lubricants storage in plant often lies at the root of these occurrences.

Lubricants should also be considered working components in mechanical systems just like bearings, gears or valves. Dirty or damaged bearing should not be installed on a piece of equipment using the wrong tools and "damaged" lubricants should not be added to the machine. The first step toward achieving proactive maintenance of lubricants and ultimately the equipment begins with proper in-plant storage and handling of lubricants. Routine analysis of new oils should be employed to ensure effective contamination control.

Lubricants in storage are also subject to particle agglomeration. Agglomeration occurs when smaller particles combine to form larger and more harmful particles. These harmful particles will generally gather at the bottom of the container. It should be remembered that while drum agitation is done for re-suspending additives, it is also being done automatically the re-suspending of settled contamination.

Literature Survey:

There is very little literature on lubrication. Most of the industries are adopting their own practices whatever they learned from the past. Fitch, J.C. and Drew D. Troyer, with John McKetta, et al Editors, (2005) have described the performance of lubricant. Fitch, J.C., (2006), gave the thrust on contamination control in lubricants. The contribution of Fitch, J.C. et al (1991, 1995, 1996, 2003, 2004, 2001, and 2006) is remarkable document for storage and handling of lubricants.

Interview with Prof. Peter Jost, (2006) "Interview with Luminary Professor H. Peter Jost," Machinery Lubrication Magazine, January-February issue is one of the good articles. Interviewed by Mr. Krokawa, (2005) Editor of *Journal of Economic Maintenance Tribology (Japan)*, "Progress of Lubrication Education and Certification," is giving a few point on lubricants managements. Interview with Mario Andretti, (2003) "The Greatest Racecar Driver of All Times," Practicing Oil Analysis" is good article giving the knowledge about the lubrication. Interviewed by Marian Hookham (2002), "The Good Oil - Trends in Lubrication in the Mining Industry" Australia's Mining

Monthly is highlighting nothing on storage and handling of lubricants. Interviewed by Kathryn Carnes (2001), "Measure by Measure," Published in Lubricants World Magazine, is one of the good articles but storage and handling of lubricants do not discussed.

Fitch, J. C. and M. Barnes, et al, (2003) with George Totten as Editor, Chapter 24: "Hydrocarbon Analysis," *ASTM Fuels and Lubricants Manual*, Fitch, J.C. with Robert Bolt, Editor, (2001) Chapter: "Particle Counting," *Lubrication Guide*, Published by the Electric Power Research Institute (EPRI); Fitch, J.C. with George Totten as Editor, (2001) Chapter: "Advancements in Fluid Analysis Technologies and Strategies for

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PACKAGING AND PRESERVATION OF LUBRICANTS:

Neat and Clean Delivery:

Delivery of lubricant to equipment should be neat and clean. It is important for equipment life. Sometimes lubricant becomes the major reason of equipment failure. Even when taking the best care to store lubricants, they are subjected to contamination ingress when filling or topping up systems. Therefore it is absolutely necessary that the lubricant should be filtered with an appropriate filter element prior to entering the equipment. Some lubricant dispensing tips are as under-

Packaging of Lubricants:

Lubricants are packaged in many different forms to satisfy a wide variety of consumption rates and storage facilities which differs from industry to industry. The four main industrial lubricant packages are pails (20 liters), drums (200 liters), totes (1600 liters) and bulk tanks. To select the packaging best suited for consumer needs, following factors should be considered-

- What is average consumption rate? Based on historical consumption rates, it is easy to determine the average consumption over a period of time.
- Maintain a safety stock that accounts for emergency refills and delivery delays.
- What is the vendor's standard delivery time? Depending on the lubricant type, manufacturer and plant location, average delivery can range from one day to two weeks. Some specialty fluids require even greater lead times to procure. Make sure that delivery time is well established when estimating ideal lubricant storage volumes. Quicker the delivery, the less volume will need on-hand.

- How much storage facility space is there? The storage space will help to determine which type of package and what volumes of lubricant can physically be stored. Try to ensure the FIFO (first-in/first-out) inventory and usage system, so that all variety of lubricants can easily be accommodated within space limitations.
- What is the condition of storage facility? Storage environment and storage methods can greatly affect lubricant's shelf life. As a thumb rule, a clean and dry room with a steady moderate temperature combined with proper storage racking will maximize lubricant shelf life. A dirty, moist environment with fluctuating temperatures will greatly reduce expected shelf life of lubricants.

Storage Life of Lubricants:

Most lubricants have supplier recommended self life based largely upon the lubricant's additive package. For example, lubricants containing rust inhibitors may lose performance after six months in storage periods. Conversely, some turbine fluids with a light additive dose are having shelf life up to three years. Shelf life information about lubricants is available with the supplier of lubricants and/or manufacturer. As already discussed, employ a FIFO rotation of stored lubricants to ensure that lubricant storage life is not accidentally exceeding. It should also be learned how to read the coded date on the container label. Shelf life is based on ideal storage conditions of lubricants. Some manufacturers started to provide a recommended storage procedure to maximize lubricant's shelf life. The following conditions have been proven to affect adversely on lubricant's storage life.

Effect of Varying Temperatures:

Temperature fluctuations will cause movement of air between the atmosphere and the head-space of the container (thermal siphoning). This air movement is increased for partially full containers with greater head-space although the drum is sealed and does not leak lubricant through the bung. A rigid container still inhales air when the temperature drops and exhales as the temperature rises. While inhaling, it takes the air along with moisture and small airborne particles which mix with oil of container possibly leading to degradation of the base stock and additives. There is possibility that water might condense within the drum, sediment at the bottom and get pumped to the machine during a top-up.

Extreme Temperature:

Extreme hot or cold conditions can cause chemical degradation. It has already discussed that rust inhibitors may suffer significant performance losses after only six months of normal storage time. Depending upon the formulation, a rust inhibitor may have poor solubility in base oils leading to precipitation during storage. This precipitation is greatly accelerated during cold storage condition. It indicates that temperature fluctuations decay the quality and life of lubricants.

Effect of Humidity on Lubricants:

Petroleum-based lubricants are hygroscopic. When exposed to humid air, they naturally absorb airborne moisture. Moisture is the enemy of lubricants. The moisture immediately begins to degrade the additive package and accelerates oxidation of the lubricant's base stock once it is put into-service. Thus the performance of lubricant degraded.

STORAGE OF LUBRICANTS:

Indoor Storage - Pails, drums and totes must be stored in a clean and dry location. Storage temperatures should remain moderate at all times. Lubricants in storage should be located away from all types of industrial contamination including dust and humidity. Bungs must be kept tight at all times and drum covers should be used whenever drums are stored in the upright position (bungs should be at 3 and 9, O'clock positions). Ideally, lubricants are stored in the horizontal position on a proper storage racks allowing the containers to be rotated and used on a first-in, first-out basis (see Figure 1).

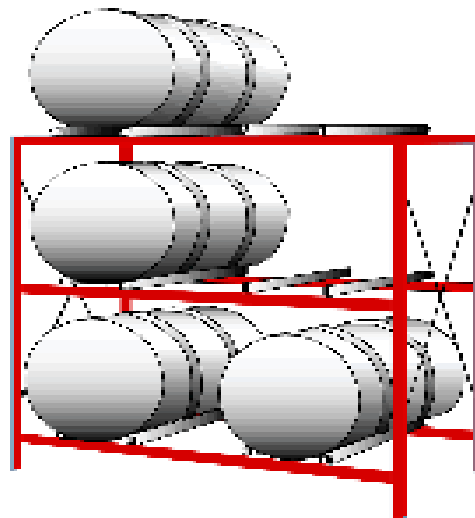


Figure 1 – Storage Racks

Racks of this type can be shop built or obtained commercially in various heights and width. Drums can be conveniently moved onto and out of this rack with the stacker as shown in the figure.

Outdoor Storage:

Only indoor storage of lubricants is recommended but this is not always possible due to environmental, financial or space constraints. If lubricants are to be stored outdoors, track lubricant consumption carefully and replenish inventories "just-in-time" to minimize exposure to adverse conditions. If lubricants are stored outside, shelter them from rain, snow and other elements. Lay down drums on their sides with the bungs in a horizontal position, (3 and 9 o'clock), below the lubricant level.

This will greatly minimize the risk of the seals drying out and the ingestion of moisture caused by breathing (see Figure 2). If the drums must be placed upright in outdoor storage, employ drum covers or tilt drums to drain the moisture that gathers on the top around the bungs. Avoid outdoor storage of water-based fluids where extreme temperatures can have more damaging effect through freezing and evaporation.

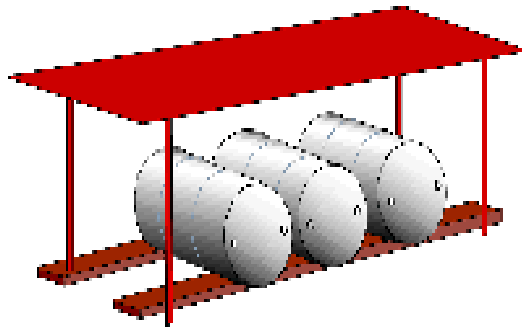


Figure 2 – Out door storage

When drums are to be stored outside, a temporary shelter or lean-to, or water proof tarpaulin should be used to protect them from rain or snow.

Opened containers:

Once the seal is broken and the container is put into use, care must be taken to ensure control over contamination ingress. If equipped with a proper pressure relief, bulk tanks should use filter breathers to control contamination ingestion. Drums and pails should be capped when not in use. If , drums are frequently used, the use of bung breather filters may be one of the best solution.

Identification of Lubricants:

Two common consequences of lubricant mismanagement are cross contamination and lubricant confusion. All drums must be clearly labeled and stenciled to ensure proper product identification. Avoid using labeling methods that are not legible or may wear out over passage of time. Take extra care in the labeling of containers that have to be stored outdoors because outdoor environment may damage the labels. Color coding labels simplifies the process, reducing the risk of misapplication. If a color coding system is

employed, be sure alpha or numeric information is also present to account for color blindness.

Identification of Lubricant Dispensing Equipments:

Lubricant dispensing equipment often lies at the root of cross contamination problems. By dispensing oil through equipment that was previously used with a different lubricant, the two fluids mix, potentially causing lubrication impairment. Cross contamination is also a trend-killer, reducing the effectiveness of oil analysis efforts.

Equipment such as transport containers, hand pumps, transfer carts and filter carts should be labeled to match the lubricant to be used with. Where mixing is unavoidable, verify compatibility in advance with the lubricant supplier. Extend the identification process to the machine's lubricant fill ports. Using identification tags or color-codes helps to ensure that the proper lubricant is added to the reservoir fitted with the proper dispensing tools. If dispensing equipment must be used for a variety of lubricants, employ a proper cleaning or flushing procedure that emphasizes the removal of the previous lubricant and other contamination to minimize risk.

Re-Suspending Additives:

To ensure consistency in additive concentration, before dispensing stored lubricants in cases of storage stability risk, agitate them on a drum tumbler to re-suspend additives that may have fallen out during storage. Use oil analysis to confirm that oil is in proper condition for service. This problem can be even more evident in large bulk oil systems where oil remains static for long periods of time.

For these systems, a circulating system provides constant turnover to keep the additives evenly distributed. Equip such a circulating rig with dirt and water removal filters for ensuring proper protection of lubricants.

Cleanliness of New Oil:

In many cases, new oil is the dirtiest oil in the plant. The containers used to store lubricants are often reused and may be subjected to many extreme conditions before they reach your plant. Currently, lubricant manufacturers are not required to ensure cleanliness of the lubricant they provide unless it is advertised as meeting a specified cleanliness rating. Cleanliness should be written into the lubricant purchase specification.

Cleanliness of new oils typically ranges between ISO 4406 codes of 16/13 to 22/19. Most of hydraulic and lubrication systems require ISO cleanliness of code of 17. Proper transfer equipment should be used for the lubricant being dispensed. While topping-up the system directly or filling a smaller portable container, be sure that the lubricant has been filtered.

Following recommendations should be followed for better results.

- It is recommended that the oil should be cycled through a high efficiency filter element with a beta rating matching the equipment requirements. If, storage method exposes the lubricant to moist environments, two-stage filtering with a water absorbing filter element is highly recommended.
- When transferring lubricants to portable containers, be sure to avoid the use of galvanized containers since the additive in the lubricant may react with the zinc plating, forming metal soaps that clog small openings and orifices in industrial machinery.
- Avoid using open or dirty containers for transfer purposes.
- Use properly identified, capped containers for low volume transfers.

Conclusion:

An effective proactive maintenance program mandates effective storage and delivery of lubricants. Protecting the lubricants and ultimately the equipment from the harmful effects of contamination, the lubricant's degradation should be protected which begins with proper in-plant storage system.

To ensure suitable storage of lubricants, containers should be stored indoors in a dry location where temperatures remain moderate in all seasons. Clearly identify lubricants and machine application to avoid confusion and the misapplication of lubricants.

The lubricants should be labeled for its identification and accordingly the equipment's oil box should also be labeled so that their confusion can be avoided. Permanent and weather proof labels should be used for its long life.

It should be ensured that proper transfer equipment and procedures are framed and employed for the specific lubricant. These simple steps can substantially enhance the life of the lubricants and equipments.

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MANAGEMENT OF INTELLECTUAL PROPERTY RIGHTS IN INDIA

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Abstact

Intellectual Property Rights are largely territorial rights except copyright, which is global in nature in the sense that it is immediately available in all the members of the Berne Convention. These rights are awarded by the State and are monopoly rights implying that no one can use these rights without the consent of the right holder. It is important to know that these rights have to be renewed from time to time for keeping them in force except in case of copyright and trade secrets. IPR have fixed term except trademark and geographical indications, which can have indefinite life provided these are renewed after a stipulated time specified in the law by paying official fees. Trade secrets also have an infinite life but they don't have to be renewed. IPR can be assigned, gifted, sold and licensed like any other property. Unlike other moveable and immoveable properties, these rights can be simultaneously held in many countries at the same time. IPR can be held only by legal entities i.e., who have the right to sell and purchase property. These rights especially, patents, copyrights, industrial designs, IC layout design and trade secrets are associated with something new or original and therefore, what is known in public domain cannot be protected through the rights mentioned above. Improvements and modifications made over known things can be protected. It would however, be possible to utilize geographical indications for protecting some agriculture and traditional products.

Keyword: Intellectual Property Rights (IPR), Monopoly Rights, Moveable and Immoveable Properties, Public Domain, Improvements and Modifications.

Introduction

With the advent of the new knowledge economy, the old and some of the existing management constructs and approaches would have to change. The knowledge economy places a tag of urgency on understanding and managing knowledge based assets such as innovations and know-how. The time for grasping knowledge has become an important parameter for determining the success of an institution, enterprise, government and industry; the shorter the time better are the chances of success. Intellectual property rights (IPR) have become important in the face of changing trade environment which is characterized by the following features namely global competition, high innovation risks, short product cycle, need for rapid changes in technology, high investments in research and development (R&D), production and marketing and need for highly skilled human resources. Geographical barriers to trade among nations are collapsing due to globalization, a system of multilateral trade and a new emerging economic order. It is therefore quite obvious that the complexities of global trade would be on the increase as more and more variables are introduced leading to uncertainties. Many products and technologies are simultaneously marketed and utilized in many countries. With the opening up of trade in goods and services intellectual property rights (IPR) have become more susceptible to infringement leading to inadequate return to the creators of knowledge. Developers of such products and technologies would like to ensure R&D costs and other costs associated with introduction of new products in the market are recovered and enough profits are generated for investing in R&D to keep up the R&D efforts. One expects that a large number of IP rights would be generated and protected all over the world including India in all areas of science and technology, software and business methods.

More than any other technological area, drugs and pharmaceuticals match the above description most closely. Knowing that the cost of introducing a new drug into the market may cost a company anywhere between \$ 300 million to \$600 million along with all the associated risks at the developmental stage, no company will like to risk its

intellectual property becoming a public property without adequate returns. Creating, obtaining, protecting and managing intellectual property must become a corporate activity in the same manner as the raising of resources and funds. The knowledge revolution will demand a special pedestal for intellectual property and treatment in the overall decision- making process. It is also important to realize that each product is amalgamation of many different areas of science and technologies. In the face of the competition being experienced by the global community, many industries are joining hands for sharing their expertise in order to respond to market demands quickly and keeping the prices competitive. In order to maintain a continuous stream of new ideas and experimentations, public private partnership in R&D would need to be nurtured to arrive at a win-win situation. Therefore all publicly funded institutions and agencies will have to come to terms with the new ground realities and take positive steps to direct research suitably to generate more intellectual property rights, protect and manage them efficiently.

Literature Review

According to Rawls John,2000¹ ‘Justice is the first virtue of social institutions, as truth is the system of thought. As theory however elegant and economical must be rejected and revised if it is untrue; likewise laws and institutions no matter how efficient and well arranged must be reformed and abolished if they are unjust.’ Aoki, R. and Spiegel,1999² have concluded that “Public disclosure leads to fewer patent applications and fewer innovations, but for a given number of innovations, it raises the probability that new technologies will reach the product market and thereby enhances consumers’ surplus and possibly total welfare as well.” “Strong intellectual property protection may be necessary to stimulate research in a particular field but greater social welfare may be gained at a later time through open access to technical knowledge that may be effected by public policy intervention. Impacts on public sector research also need to be considered on a case-by-case basis. Nations that generate technology have always sought to protect it while those that import it have pursued avenues that maximize access to the available technology. The impact of intellectual property protection on health care in the developing countries has received much attention recently. The impact of intellectual

property rights on access to essential drugs (including parallel imports), drug pricing, promotion of research and development (R&D) on tropical diseases, transparency in drug regulation, and local drug manufacture.” C.M. and Yusuf, 1998³. The same has been discussed by Gupta, A., 1999⁴ “Social and economic factors will play a greater role in shaping the adoption of these technologies. So far, research efforts are shifting towards controlling the expression of specific traits instead of suppressing the entire germination process.” The World Intellectual Property Organization (WIPO) is examining these options but supporters of sui generis systems as well as some indigenous groups are opposed to this process and argue that it will undermine their efforts to secure unique rights at the national and international level. Resolving these issues may require an exploration of the extent to which existing intellectual regimes can protect certain aspects of indigenous knowledge. Youssef, H., 1999⁵ “The assessment points to the call for special and differential treatment of the developing countries on a case-by-case basis. This principle is already incorporated into the functioning of WTO and is expressed in many of its clauses. This is partly a result of the negotiations that took place under other agreements that provided special treatment to developing countries on public interest issues such as education.

Intellectual Property Rights (IPR)

Intellectual property rights as a collective term includes the following independent IP rights which can be collectively used for protecting different aspects of an inventive work for multiple protection:- Patents, Copyrights, Trademarks, Registered (industrial) design, Protection of IC layout design, Geographical indications and Protection of undisclosed information.

Patents

A patent is an exclusive right granted by a country to the owner of an invention to make, use, manufacture and market the invention, provided the invention satisfies certain conditions stipulated in the law. Exclusive right implies that no one else can make, use, manufacture or market the invention without the consent of the patent holder. This right is available for a limited period of time. In spite of the ownership of

the rights, the use or exploitation of the rights by the owner of the patent may not be possible due to other laws of the country which has awarded the patent. These laws may relate to health, safety, food, security etc. Further, existing patents in similar area may also come in the way. A patent in the law is a property right and hence, can be gifted, inherited, assigned, sold or licensed. As the right is conferred by the State, it can be revoked by the State under very special circumstances even if the patent has been sold or licensed or manufactured or marketed in the meantime. The patent right is territorial in nature and inventors/their assignees will have to file separate patent applications in countries of their interest, along with necessary fees, for obtaining patents in those countries. A new chemical process or a drug molecule or an electronic circuit or a new surgical instrument or a vaccine is a patentable subject matter provided all the stipulations of the law are satisfied.

Protecting new plant variety

New plant varieties can now be protected in India under the New Plant Variety and Farmers Rights Protection Act in 2001. New plant varieties cannot be protected through patents. However, the Act has not become operational as subsidiary legislation is yet to be put in place. India has enacted the which, in addition to meeting the technical features of UPOV, provides rights to farmers to use the seeds from their own crops for planting the next crop. Further, there are provisions for benefit sharing with farmers, penalty for marketing spurious propagation material and protecting extant varieties. There is a provision for protecting extant variety and farmers' varieties as well. The total period for protection is 10 years from the date of registration.

There are 5 main criteria to arrive at a decision whether a plant variety is really new or not. These are distinctiveness, uniformity, stability, novelty and denomination. The variety shall be deemed to be distinct if it is clearly distinct from any other variety whose existence is a matter of common knowledge at the time of filing of the application. The variety shall be deemed to be uniform if, subject to the variation that may be accepted from the particular features of its propagation, it is sufficiently uniform in its relevant characteristics. The variety shall be deemed to be stable if its relevant characteristics remain unchanged after repeated propagation or, in the case of a particular cycle of

propagation at the end of each such cycle. The variety shall be deemed to be new if, at the date of filing of the application for breeders right, propagating or harvesting material of the variety has not been sold or otherwise disposed of to others, by or with the consent of the breeder for the purpose of exploitation of the variety.

Copyrights

Copyright is a right, which is available for creating an original literary or dramatic or musical or artistic work. Cinematographic films including sound track and video films and recordings on discs, tapes, perforated roll or other devices are covered by copyrights. Computer programs and software are covered under literary works and are protected in India under copyrights. The Copyright Act, 1957 as amended in 1983, 1984, 1992, 1994 and 1999 governs the copyright protection in India. The total term of protection for literary work is the author's life plus sixty years. For cinematographic films, records, photographs, posthumous publications, anonymous publication, works of government and international agencies the term is 60 years from the beginning of the calendar year following the year in which the work was published. For broadcasting, the term is 25 years from the beginning of the calendar year following the year in which the broadcast was made.

Copyright gives protection for the expression of an idea and not for the idea itself. For example, many authors write textbooks on physics covering various aspects like mechanics, heat, optics etc. Even though these topics are covered in several books by different authors, each author will have a copyright on the book written by him / her, provided the book is not a copy of some other book published earlier. India is a member of the Berne Convention, an international treaty on copyright. Under this Convention, registration of copyright is not an essential requirement for protecting the right. It would, therefore, mean that the copyright on a work created in India would be automatically and simultaneously protected through copyright in all the member countries of the Berne Convention. The moment an original work is created, the creator starts enjoying the copyright. However, an undisputable record of the date on which a work was created must be kept. When a work is published with the authority of the copyright owner, a notice of copyright may be placed on publicly

distributed copies. The use of copyright notice is optional for the protection of literary and artistic works. It is, however, a good idea to incorporate a copyright notice. As violation of copyright is a cognizable offence, the matter can be reported to a police station. It is advised that registration of copyright in India would help in establishing the ownership of the work. The registration can be done at the Office of the Registrar of Copyrights in New Delhi. It is also to be noted that the work is open for public inspection once the copyright is registered.

Industrial Design

We see so many varieties and brands of the same product (e.g. car, television, personal computer, a piece of furniture etc.) in the market, which look quite different from each other. If the products have similar functional features or have comparable price tags, the eye appeal or visual design of a product determines the choice. Even if the similarities are not close, a person may decide to go for a more expensive item because that item has a better look or colour scheme. What is being said is that the external design or colour scheme or ornamentation of a product plays a key role in determining the market acceptability of the product over other similar products. If you have a good design that gives you an advantage, then you must have a system to protect its features otherwise there would be wide scale imitation.

Design as per the Indian Act means the features of shape, configuration, pattern, ornament or composition of lines or colors applied to any article - whether in two dimensional or three dimensional or in both forms - by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged solely by the eye; but it does not include any mode or principle of construction or anything which is in substance a mere mechanical device. In this context an article means any article of manufacture and any substance, artificial, or partly artificial and partly natural; and includes any part of an article capable of being made and sold separately. Stamps, labels, tokens, cards, etc cannot be considered an article for the purpose of registration of design because once the alleged design i.e., ornamentation is removed only a piece of paper, metal or like material remains and the article referred to ceases to exist. An article must have its existence

independent of the designs applied to it. So, the design as applied to an article should be integral with the article itself.

Trademarks

A trademark is a distinctive sign, which identifies certain goods or services as those produced or provided by a specific person or enterprise. Trademarks may be one or combination of words, letters, and numerals. They may also consist of drawings, symbols, three dimensional signs such as shape and packaging of goods, or colors used as distinguishing feature. Collective marks are owned by an association whose members use them to identify themselves with a level of quality. Certification marks are given for compliance with defined standards. (Example ISO 9000.). A trademark provides to the owner of the mark by ensuring the exclusive right to use it to identify goods or services, or to authorize others to use it in return for some consideration (payment).

Well-known trademark in relation to any goods or services, means a mark which has become so to the substantial segment of the public which uses such goods or receives such services that the use of such mark in relation to other goods or services would be likely to be taken as indicating a connection in the course of trade or rendering of services between those goods or services and a person using the mark in relation to the first-mentioned goods or services.

Protection of Geographical Indications

Indications which identify a good as originating in the territory of a member or a region or a locality in that territory, where a given quality reputation or other characteristics of the good is attributable to its geographical origin. The concept of identifying GI and protecting them is a new concept in India, perhaps in most developing countries, and has come to knowledge in these countries after they signed the TRIPS Agreement. It may be noted that properly protected GI will give protection in domestic and international market. Stipulations of TRIPS would be applicable to all the member countries. According to TRIPS, GI which is not or cease to be protected in its country of origin or which has fallen into disuse in that country cannot be protected.

Homonymous GI for wines will get independent protection. Each state shall determine conditions under which homonymous indications will be differentiated from each other. Principles of national treatment and fair competition are applicable. TRIPS provide for seizure of goods bearing false indications of GI. TRIPS provide for refusal or invalidation of registration of a trademark containing a GI with respect to goods not originating in the territory indicated. The Geographical Indication of Goods (Registration and Protection) Act came into being in 2000. (The Act is not implemented at the time of writing the article as the rules have not been notified.) The term GI has been defined as "Geographical Indications", in relation to goods, means an indication which identifies such goods as agricultural goods, natural goods or manufactured goods as originating, or manufactured in the territory of a country, or a region or locality in that territory, where a given quality, reputation or other characteristics of such goods is essentially attributable to its geographical origin and in case where such goods are manufactured goods one of the activities of either the production or of processing or preparation of the goods concerned takes place in such territory, region or locality, as the case may be.

Protection of Integrated Circuit Layout Design (IC)

It provides protection for semiconductor IC layout designs. India has now in place Semiconductor Integrated Circuits Layout Design Act, 2000 to give protection to IC layout design. Layout design includes a layout of transistors and other circuitry elements and includes lead wires connecting such elements and expressed in any manner in a semiconductor IC. Semiconductor IC is a product having transistors and other circuitry elements, which are inseparably formed on a semiconductor material or an insulating material or inside the semiconductor material and designed to perform an electronic circuitry function. The term of the registration is 10 years from the date of filing.

Reproducing, importing, selling, distributing the IC layout design for commercial purposes only constitutes infringement. A person when creates another layout design on the basis of scientific evaluation of a registered layout design shall not be causing any infringement.

Protection of undisclosed information

The protected subject matter is information lawfully within the control of a natural person or legal person that is secret that has commercial value because it is secret and that has been subject to reasonable steps by the person lawfully in control of the information, to keep it secret. Secret is defined as “ secret in the sense that it is not , as a body or in the precise configuration and assembly of its components known among or readily accessible to persons within the circles that normally deal with the kind of information in question.” Undisclosed information, generally known as trade secret / confidential information, includes formula, pattern, compilation, programme, device, method, technique or process. Protection of undisclosed information is least known to players of IPR and also least talked about, although it is perhaps the most important form of protection for industries, R&D institutions and other agencies dealing with IPRs. Protection of undisclosed information / trade secret is not really new to humanity; at every stage of development people have evolved methods to keep important information secret, commonly by restricting the knowledge to their family members. Laws relating to all forms of IPR are at different stages of implementation in India, but there is no separate and exclusive law for protecting undisclosed information / trade secret or confidential information. The Contract Act of 1872 would however cover many aspects of trade secrets.

It is difficult to define the term in its entirety but, for an easy understanding, it may be said that a piece of undisclosed information or a trade secret can be as simple an item as a company's customer list or as complex as a formula for a product or a process. Broadly speaking, the term would encompass information, including a formula, pattern, compilation, program, device, method, technique or process that provides the owner with an advantage over his business competitors who do not know or use it and is of significance or importance to the business of the company holding the information. Expanding it further, it may include new product plans, product costing, best material to use, sources of materials, financial standing of the business, accounting information, employee records, credit rating of customers, production information, manufacturing methods and processes, business methods, blueprints, test data, research reports,

professional pollsters, technical drawings and organisational structure, specifications, process manuals, written instructions for operating the process and analytical means to check and control the product and processes, details of workshop practice, technical training and personal visitation and inspection. On the software side it would include source code, the data file structure, the structure sequence and organisation of computer program.

Other related legislation

India enacted the Biodiversity Act 2002 to ensure maintenance, sustenance and development of its biodiversity. The Act has specific provisions about ownership of intellectual property rights associated with exploitation of biodiversity. Industries have to have the prior informed consent of the National Biodiversity Authority before exploring the biodiversity in India. In the event of R&D based on exploitation of biodiversity and associated local knowledge, there is a provision for sharing of benefits of such work with the local community. No direct flow of funds is expected to the community. Instead the Union Government will reach the benefits through State Governments to the community.

The other Act having its influence over other Acts related to IPR is the Information technology Act, 2000 which looks at the security aspect of material being transacted on internet.

Management of IPR in publicly funded institutions in India

Aims of publicly funded institutions such as universities, colleges, autonomous bodies and public sector undertakings are multifaceted and are not purely driven by economic considerations but they are primarily driven by considerations of social obligations and political objectives and will of a nation. India has stuck to these aims since the independence. On one hand the above approach has helped us in creating a pool of highly educated population and also building an inherent strength in research and development and core competency in basic industries like steel, power, fertilizers etc. However on the other hand, an insulated system breeds complacency, which blunts the spirit of innovation and fire for being ahead of others. Globalization has taught

us many new lessons by opening our eyes to the existing and forthcoming ground realities, which cannot be shunned away just because we do not happen to like them. These realities are going to stay. The likely impacts of globalization started becoming a part of our age old thought process and life style when India decided to become a member of the World Trade Organization. Since the beginning of 1990s new approaches started taking roots in respect of such institutions, especially related to their management and source of funding. It has been observed that educational and R&D institutions are being asked to generate their own funds and depend less and less on block grants by central or state governments. In respect of PSU the message has been to generate more and more revenue from the available resources. The Central Government was quick to understand the importance of innovations and new ideas for adjusting to new streams of paradigm shifts. The Government also realized that the journey is not going to be smooth, easy or straight forward in the absence of knowledge about new paradigms among scientists, technologists and policy makers. January 1, 1995 came and brought with it the full impact of WTO along with the Agreement of Trade Related Aspects of Intellectual Property Rights (TRIPS). The Indian system rose to the new challenge and through its many efforts have taken successful steps towards transition to a new culture by updating its existing laws, enacting new legislations, instituting new mechanisms for enabling creation of new intellectual property and its protection and even evolving novel methods and schemes to promote innovations at grass roots levels. Managing creativity within the innovation process is not easy. From providing initial impetus for new ideas and a means of collating and evaluating them through to determining the most appropriate exploitation strategy and selecting delivery partners, innovation is a process and can therefore be managed.

Capacity building

Experts who have been involved in capacity building in different areas would agree that the exercise of capacity building is never monolithic in nature but a multidimensional and complex activity. No exercise at a national level can succeed if all or most players are not engaged in the activity. Intellectual Property Rights are often considered

synonym of patents or at best patents, trademark and copyrights. This type of understanding or misunderstanding may be present elsewhere in the world. Sometimes people even use the word 'patent' as a substitute for 'protect'. Let's not forget that India is a big country and the task of spreading literacy is gigantic Dissemination of new knowledge is difficult and it cannot be disseminated in a day or two; hence one should be prepared to work with low success rates. At the same time the need to make efforts for spreading correct literacy in a short period of time cannot be overlooked. Awareness still remains an unfulfilled goal in spite of efforts made by so many agencies. There is a need to adopt different means such as contact programmes, print media, bulletins, internet, videos etc. Awareness by itself is of little use if the State does not create and provide suitable systems to enable scientists, technologists, industries and even the State to protect their rights. These means would be in terms of technical guidance, financial support, legal help and other facilitation steps. If you teach scientists that novelty is one of the key factors for getting a patent and do not supply them with adequate tools to determine if their inventions are novel or not, the awareness will have be of little value. Universities in India are very poor and their management systems are very old. Therefore, they need technical, financial and legal help to move ahead; someone has to hold their hands.

Capacity building has to be multifaceted at the national level in order to move and remain ahead in the knowledge race. Academic institutions, R&D institutions, industries (goods and services), government departments and ministries (law making, regulating, providing funds and incentives for research etc) and other agencies, attorney firms, courts and NGOs need to be enabled and empowered for playing a constructive role in the process of capacity building. Policy frameworks are essential in the national context to give the right impetus to the activities

already started and also provide a broad platform for taking up future activities. Many of these issues have been addressed and addressed quite successfully in the last ten years by different agencies of the government. While departments like Atomic Energy, Space and DRDO and agencies like CSIR have their in house system for looking after their needs of IPR, There was no agency in the country in 1995, which

could cut across departments and agencies and become a national nodal point for information and advice on IPR.

Patent Facilitating Centre (PFC)

The Department of Science and Technology set up the Patent Facilitating Centre at the Technology Information Forecasting and Assessment Council (TIFAC) in 1995 as a small initiative to address the need of awareness creation among scientists, helping them to protect their inventive and original work through IP laws and also act as a watch dog. The PFC came to be known for its capability to raise issues and bringing new information and knowledge about IPR in public domain. Starting with the revelation of the turmeric patent to the whole country, it brought to notice many other patents using some of our well known plants and traditional knowledge and, at times, claiming what is already known in India. The days of Dunkel Draft on WTO became a history with PFC putting IPR matters in public domain freely through its monthly IPR Bulletin since November 1995. The readership of these bulletins is over 18000. These bulletins cover technical analysis of granted patents, case laws, current global issues, IPR laws of India and other countries, international treaties, analysis of patents trends, domestic and international news and many other items of interest to a wide variety of readers.

The PFC has organized 448 IPR awareness workshops all over the country independently and also in association with Ministry of Small Scale Industries, Department of Atomic Energy, Department of Space and ICMR. In the process almost 35000 scientists, technologists and policy makers have been sensitized from about 500 universities, colleges and R&D institutions and 800 industries. The PFC has been organizing advanced level of training programmes with CII and attorney firms and also workshops cum retreat on topics such as public private partnership in IPR management. It would be pertinent to mention at this point that the Ministry of Human Resource Development (MHRD) has also been supporting workshops on IPR. Further, the MHRD has created 11 IPR chairs in various IITS and universities. The Ministry of Commerce and Industry has also been conducting many seminars and workshops on this topic for the last decade or so.

Twenty Patent Information Centers (PIC) have been set up by the PFC in 20 States namely; Assam, Andhra Pradesh, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Manipur, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttaranchal and West Bengal. These PICs are helping scientists, technologists and policy makers in their respective States by creating awareness and extending help for protecting their inventions. Some States as a result of continuous discussions have filed applications for registration of some products as geographical indications; some are also in the pipeline. Two PICs, namely, Punjab and West Bengal, have also succeeded in introducing IPR courses in technical institutions; other PICs are working hard towards this goal.

The PFC is the only window available in the country, which provides full technical, legal and financial support for inventions emanating from educational institutions, including schools and colleges, and government departments.

Other centers / cells

Many government departments, educational institutions and PSU have started their IPR cells. Prominent among the government departments/agencies are Department of Biotechnology, Ministry of Telecommunications and Information Technology, Indian Council of Medical Research, Indian Council of Agricultural Research, ISRO, Department of Atomic Energy, Defence Research and Development Organization and Indian Council of Forest Research. IITs at Delhi, Mumbai, Kharagpur and Roorkee have also set up their cells and evolved their IPR policies. Among the PSUs, Indian Oil Corporation and Bharat Heavy Electricals Ltd. are worth mentioning. Among private industries, there are many industries, which have started their own IPR cells and it may not be possible to list all of them here. There is no doubt that private industries have responded very well to the new IPR regime in terms of filing patent applications.

Innovations related incentives

An innovative industry in India can gain competitive advantage in the market if it develops the necessary expertise and skills in developing and manufacturing new

products, which are patented. For example, the advantage of a three year excise duty exemption or exemption from Drugs Price Control Order may translate into reserves / income which may offset the cost towards R&D. In order to promote R&D and innovation in Indian industries, Government of India provides a number of fiscal incentives and support measures to industries. With increasing public private partnership in technology development through schemes of Technology Development Board, Drug and Pharmaceutical Board and NMILTI, the following incentives would be extremely useful in promoting the culture of innovation and intellectual property protection in industries and academic and R&D institutions.

1. Excise duty waiver on patented products

All goods falling under the Schedule to the Central Excise Tariff 1985 are exempt from the excise duty for a period of 3 years from the date of commencement of commercial production provided such goods are manufactured by a wholly owned Indian company and such goods are designed and developed by such Indian company and the goods so designed are patented in any two countries outside India namely, USA, Japan and any country of the European Union. The manufacturer, before commencing commercial production must obtain a certificate from the Department of Scientific and Industrial Research for claiming the benefit.

2. Exemption from Drug Price Control Order

Bulk drugs produced based on indigenous R&D are exempt from drug price control for a period of 5 years from the date of commencement of commercial production provided that they are produced from the basic stage by a process of manufacture developed by the unit through its own R&D efforts. In case of a drug, which has not been produced elsewhere, if developed and produced indigenously, it would be placed outside the price control order for a period of 10 years from the date of commencement of commercial production. *In order to establish that a process or a product has been developed through indigenous R&D, novelty of the process or product would have to be ensured. In other words a patent would have to be necessarily obtained for claiming the benefit.*

3. Weighted tax deduction on R&D expenditure

Weighted tax deduction @ 150% on R&D expenditure is available to companies engaged in the business of biotechnology, or the business of manufacture or production of drugs, pharmaceuticals, electronic equipment, computers, telecommunication equipment, chemicals and manufacture of aircraft and helicopters. The expenditure on scientific research in relation to drugs and pharmaceuticals, shall include expenditure incurred on clinical trials of drugs, obtaining approval from the regulatory authority under any Central, State or provincial Act and the filing of a patent application in India.

4. Accelerated depreciation allowance

Depreciation allowance at a higher rate is available in respect of plant and machinery installed for manufacturing goods based on indigenous technology developed in recognized in-house R&D units, Government R&D institutions, national laboratories and Scientific and Industrial Organizations (SIRO). The present rate of depreciation for plant and machinery is 40% as against 25% for other plants and machinery.

5. Tax holiday to R&D companies

Tax holiday is available to approved companies engaged in scientific and industrial R&D activities on commercial lines for ten consecutive assessment years. This incentive is applicable to any commercial company that has its main objective and activities in the area of scientific and industrial R&D. This would be applicable to companies approved after March 31, 2000 but before April 1, 2003.

6. Income tax relief on R&D expenditure

Under Section 35(1)(i) of the Income Tax Act 1961, the revenue expenditure on scientific research, by recognized R&D units, on activities related to the business of the company is allowed full deduction. Under Section 35(1)(iv) expenses of a capital nature could be deducted totally from the income of the year in which the expenses have been incurred.

7. Tax deduction for sponsoring research

Section 35(2AA) of the IT Act 1961 provides for a weighted tax deduction of 125% for expenses on sponsoring research programmes at National laboratories functioning under ICAR, CSIR, ICMR, DRDO, Department of Biotechnology, Department of Atomic Energy, Department of Electronics; IIT and universities.

Conclusion:

This paper develops a pool of well informed and trained human resource, deploy sufficient facilities (hardware and software) and, create and promote an enabling environment for generating, protecting and managing intellectual property for progress of science, technology and arts leading to growth of trade and industry and well being of the society. Any physical process, including development, has to absorb some finite time before taking a shape. We have made a good start by rising to the occasion and putting in place some very useful systems and policies. In addition to the legislative changes, the Government of India has taken several measures to streamline and strengthen the intellectual property administration system in the country. Projects relating to the modernization of patent information services and trademarks registry have been implemented with help from WIPO/UNDP. The Government of India is implementing a project for modernization of patent offices at a cost of Rs.756 million incorporating several components such as human resource development, recruiting additional examiners, infrastructure support and strengthening by way of computerization and re-engineering work practices, and elimination of backlog of patent applications.

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COMMODITY MARKET AS AN INVESTMENT OPTION

*Dr.Nisha Singh**South Carolina,USA***Abstract**

There are three reasons for investing in commodities diversification, protect against a spike in inflation, and guard against the possible financial system fall. The gold price has tripled since the year 2000 and it has the fundamental potential to continue its long-term bull market due to the current economic cycle. The current price reflects only a fraction of the inflation that has been factored into the global monetary system. Inflation will be playing a larger part in all our lives over the coming years, as governments around the world are aiming at reducing the effects of the current economic crisis via monetary policy. Silver reserves are being sold-off and as a result the inventories have been steadily shrinking on a worldwide basis.

Objectives

- To suggest an alternative investment option for investors based on analysis of market
- To suggest benefits of investment in commodity (gold) for portfolio management.
- To identify factors affecting commodities (gold) prices.

METHODOLOGY**METHOD OF DATA COLLECTION**

Secondary data collected from web sides of NSC India, MCX India and NCDEX etc.

Statistical tools: Hypothesis test, ANOVA test and Regression analysis.

DATA ANALYSIS & INTERPRETATION**Factors affecting price of gold**

1. **US Dollar**-There is a +ve relationship between **gold prices** and **US Dollar**. Before 1950 US \$ was also considered as the inflation hedge. But this is not true now. So in the past we can observe the positive correlation between gold prices

and US \$. But now the relation is negative. US has a large debt (3 trillion \$) and also it pays more interest than it earns. So it creates a downward pressure on the Dollar and makes it weak. This creates an inverse relation.

2. As a tool of hedge now gold is demanded more than the US \$. When the price of gold depreciates the investors outside US will benefited because the dollar price of the gold will increase. Investor can shift away from the dollar denominated assets
3. to gold. Past experiences also that gold has been used as a hedge against currency risk.
4. Analysis-

Date	Gold	dollar	Date	Gold	Dollar
May-05	6104.576	43.69	May-07	8863.392	40.73
Jun-05	6185.849	43.51	Jun-07	8690.265	40.75
Jul-05	6173.774	43.49	Jul-07	8732.315	40.44
Aug-05	6276.731	44.04	Aug-07	8829.425	40.96
Sep-05	6574.167	43.99	Sep-07	9286.778	39.74
Oct-05	6889.167	45.11	Oct-07	9671.96	39.32
Nov-05	7174.826	45.92	Nov-07	10301.33	39.67
Dec-05	7610.6	45.07	Dec-07	10247.9	39.41
Jan-06	7957.714	44.07	Jan-08	11264.54	39.39
Feb-06	7998	44.44	Feb-08	11857.93	39.92
Mar-06	8246.146	44.61	Mar-	12609.42	39.97

			08		
Apr-06	8958.106	44.97	Apr-08	11792.93	40.46
May-06	9988.8	46.43	May-08	12142.66	42.59
Jun-06	8896.447	46.08	Jun-08	12327.35	42.95
Jul-06	9513.714	46.51	Jul-08	13005.86	42.49
Aug-06	9572.941	46.55	Aug-08	11791	43.79
Sep-06	9029.255	45.96	Sep-08	12194.02	46.94
Oct-06	8703.302	45.02	Oct-08	12715	49.25
Nov-06	9167.857	44.76	Nov-08	12108.59	49.84
Dec-06	9152.87	44.23	Dec-08	12865.25	48.45
Jan-07	9072.782	44.17	Jan-09	13475.67	49.02
Feb-07	9494.511	44.31	Feb-09	14791.53	50.73
Mar-07	9345.75	43.59	Mar-09	15254.53	50.95
Apr-07	9311.894	41.29	Apr-09	14491.34	50.22
			May-09	14559.66	47.29

Hypothesis Assumed (H_0): Gold Prices do not depend upon Dollar exchange rate.

Alternative Hypothesis (H_1): Gold prices depend upon Dollar exchange rate.

Regression Statistics	
Multiple R	0.360509804
R Square	0.129967319
Adjusted R Square	0.111455985
Standard Error	2300.338479
Observations	49

	Df	SS	MS	F	Significance F
Regression	1	37151806.78	37151806.78	7.020959231	0.010939488
Residual	47	248703184.5	5291557.116		
Total	48	285854991.2			

	Coefficients	Standard Error	T stat	p-value	Lower 99%	Upper 99%
Intercept	-2085.412012	4582.615959	-0.455070211	0.651153944	-14387.69939	10216.87537
X variable1	273.8503496	103.351093	2.649709273	0.651153944	-3.601406983	551.3021061

Tabulated value of z- 2.56

Analytical Overview:

Significant correlation with r -0.36051

Change in US \$ exchange rate accounts only 13% for the change in gold prices.

Significant linear regression with p value- 0.6512

Regression Equation- $Y=273.85 X-2085.412$

Interpretation: Here the value of multiple R value which is 0.36, shows that the correlation between the US \$ and Gold prices is insignificant. This shows that in the current scenario the US \$ exchange rate doesn't affect the gold prices significantly. This is because R value is less than 0.5 and more closer to 0. Also the value of R square is 0.13 which shows the extent at which Fluctuation in US \$ affects Gold prices.

But from t value which is more than the tabulated value (hypothesis is accepted) we can predict that there is a relation between US \$ and gold prices. The -ve intercept of t value as well as -ve intercept of regression equation shows the inverse relation between the US\$ and gold prices.

Also for time period May 05 to Oct 06 there is high correlation (0.82) & t value is 5.8 which makes the hypothesis to be accepted. This tells that due to the change in the global economic scenario the effect of US \$ on gold prices is decreasing.

Now by doing the regression analysis for year 08 to 09 (value of multiple $R=0.71$, t value=3.98) we can also predict that there is improvement in the scenario and again the correlation is being establishing. So there is great impact of the current economic scenario.

2. REPO RATE:

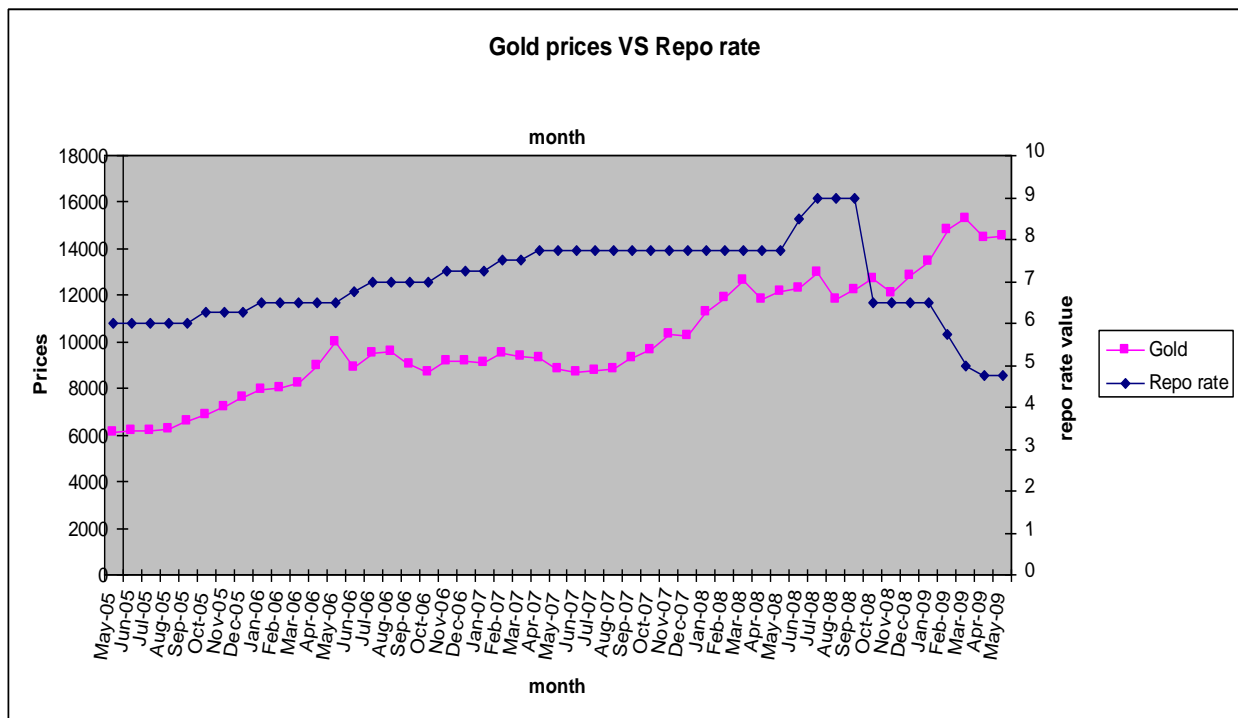
Repo Rate is that rate at which the commercial banks borrow money from the **RBI**. It is a good measure to control inflation. When the repo rate will be high, the borrowing from the banks will be low which will actually reduce the purchasing power of the public. This will reduce the investment in gold and it will ultimately reduce the price the gold.

Analysis:

Date	Gold	Repo rate	Date	Gold	Repo rate
May-05	6104.576	6	Jun-07	8690.265	7.75

Jun-05	6185.849	6	Jul-07	8732.315	7.75
Jul-05	6173.774	6	Aug-07	8829.425	7.75
Aug-05	6276.731	6	Sep-07	9286.778	7.75
Sep-05	6574.167	6	Oct-07	9671.96	7.75
Oct-05	6889.167	6.25	Nov-07	10301.33	7.75
Nov-05	7174.826	6.25	Dec-07	10247.9	7.75
Dec-05	7610.6	6.25	Jan-08	11264.54	7.75
Jan-06	7957.714	6.5	Feb-08	11857.93	7.75
Feb-06	7998	6.5	Mar-08	12609.42	7.75
Mar-06	8246.146	6.5	Apr-08	11792.93	7.75
Apr-06	8958.106	6.5	May-08	12142.66	7.75
May-06	9988.8	6.5	Jun-08	12327.35	8.5
Jun-06	8896.447	6.75	Jul-08	13005.86	9
Jul-06	9513.714	7	Aug-08	11791	9
Aug-06	9572.941	7	Sep-08	12194.02	9
Sep-06	9029.255	7	Oct-08	12715	6.5
Oct-06	8703.302	7	Nov-08	12108.59	6.5
Nov-06	9167.857	7.25	Dec-08	12865.25	6.5

Dec-06	9152.87	7.25	Jan-09	13475.67	6.5
Jan-07	9072.782	7.25	Feb-09	14791.53	5.75
Feb-07	9494.511	7.5	Mar-09	15254.53	5
Mar-07	9345.75	7.5	Apr-09	14491.34	4.75
Apr-07	9311.894	7.75	May-09	14559.66	4.75
May-07	8863.392	7.75			



Hypothesis Assumed :(H_0)- The Repo rate doesn't affect the gold prices.

Alternate Hypothesis (H_1)- The Repo rate affect the gold prices.

***NOTE-** By analyzing the graph and table we can observe that there are three time periods.

- One that is there is continuous increase in the gold prices with the increase in time period
- 2nd is that period in which there is increase in gold prices but there is no change in repo rate.
- Last is that period in which there is decrease in repo rate but increase in gold prices.
- So it will be better that we will show the regression analysis separately in three different parts.

Regression Analysis for the whole period:

Multiple R	0.044010528
R Square	0.001936927
Adjusted R Square	-0.019298458
Standard Error	2463.785839
Observations	49

ANOVA					
	Df	SS	MS	F	Significance F
Regression	1	553680.1381	553680.138	0.091212222	0.763974109
Residual	47	285301311.1	6070240.66		
Total	48	285854991.2			

	Coefficients	Standard Error	T Stat	P-value	Lower 99.0%	Upper 99.0%
Intercept	9270.172641	2527.017003	3.668425115	0.000621127	2486.254969	16054.09031
X Variable 1	107.96492	357.4836224	0.302013612	0.763974109	-851.7197437	1067.649584

Regression Analysis for the period of May 05 to Sep 09:

Multiple R	0.85704807
R Square	0.734531395
Adjusted R Square	0.727724508
Standard Error	982.2792188
Observations	41

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	104119413.9	104119413.9	107.9100273	8.6124E-13
Residual	39	37630026.09	964872.4638		
Total	40	141749440			

	Coefficients	Standard Error	t Stat	P-value	Lower 99.0%	Upper 99.0%
Intercept	-4542.661702	1340.687899	-3.388306633	0.001619293	-8173.128133	-912.195
X Variable 1	1911.568612	184.0174421	10.38797513	8.6124E-13	1413.265356	2409.872

Regression Analysis for the period of Oct 08 to may 09 :

Multiple R	0.838340857
R Square	0.702815392
Adjusted R Square	0.653284624
Standard Error	673.8858348
Observations	8

ANOVA					
	Df	SS	MS	F	Significance F
Regression	1	6443752.59	6443752.587	14.18947091	0.009322706
Residual	6	2724732.71	454122.1183		
Total	7	9168485.3			

	Coefficients	Standard Error	t Stat	P-value	Lower 99.0%	Upper 99.0%
Intercept	20477.82008	1793.258299	11.41933658	2.70487E-05	13829.44402	27126.19615
X Variable 1	-1158.075451	307.4353158	-3.766891412	0.009322706	-2297.869755	-18.2811466

Interpretation:

Now here we have divided the regression analysis in three parts. The overview of the 1st part, 2nd part and the 3rd part are as below:

1. Significant correlation with r -0.044010528

Change in repo rate accounts 2 % for the change in gold prices.

Significant linear regression with p value- 0.763974109

Regression Equation- $Y = 107.96492X + 9270.172641$

2. Significant correlation with r -0.85704807

Change in Repo rate accounts for the change 73% in gold prices.

Significant linear regression with p value- (Approx) 0.00

Regression Equation- $Y = 1911.568612X - 4542.661702$

3. Significant correlation with r -0.838340857

Change in repo rate accounts 70 % for the change in gold prices.

Significant linear regression with p value- 0.009322706

Regression Equation- $Y = -1158.075451X + 20477.82008$

Now the three cases are contradicting to each other. Case 1 shows the poor correlation whereas case 2 & 3 shows the stronger correlation. Also the t-value and p-value shows that the hypothesis should be accepted (case 2 & 3) but according to case 1 the hypothesis should be rejected.

Therefore, the question is why here such contradiction arises. The answer could be found by observing the graphs of this section. We can easily observe that in the period (which relates to the 2nd case-sep-08 to oct-08) there is a sharp downfall in the repo rate which is affect of crisis in the economy and inflation rate downfall in this period. So we can say that there is a high correlation between repo rate and gold prices, being other economic factors constant. By generalizing the case 2 and 3 where multiple R values are .86 and .84 we can say that the there is significant correlation between gold prices and repo rate. Also the t-values are 10.38 and -3.76 which shows the acceptance of hypothesis. -ve sign only shows the inverse correlation within that period.

3. Inflation Rate-

Gold has always been considered a good hedge against inflation. Rising inflation rates typically appreciates gold prices. Traditional theory implies that the relative price of consumer goods and of such real assets as land and gold should not be permanently affected by the rate of inflation. A change in the general rate of inflation should, in equilibrium, cause an equal change in the rate of inflation for each asset price The experience of the past decade has been very different from the predictions of this theory: the prices of land, gold, and other such stores of value have increased by substantially more than the general price level. The present paper presents a simple theoretical model that explains the positive relation between the rate of inflation and the relative price of such real assets. More specifically, in an economy with an income tax, an increase in the expected rate of inflation causes an immediate increase in the relative price of such 'store of value' real assets. The behavior of real asset prices discussed in this paper is thus a further example of the non-neutral response of capital markets to inflation in an economy with income taxes.

Analysis:

Date	Gold	inflation rate	Date	Gold	Inflation rate
May-05	6104.576	5.2	May-07	8863.392	5.27
Jun-05	6185.849	4.14	Jun-07	8690.265	4.03

Jul-05	6173.774	3.84	Jul-07	8732.315	4.41
Aug-05	6276.731	3.01	Aug-07	8829.425	3.94
Sep-05	6574.167	3.75	Sep-07	9286.778	3.23
Oct-05	6889.167	4.75	Oct-07	9671.96	3.07
Nov-05	7174.826	4.54	Nov-07	10301.33	3.21
Dec-05	7610.6	4.4	Dec-07	10247.9	3.45
Jan-06	7957.714	4.3	Jan-08	11264.54	4.11
Feb-06	7998	4.34	Feb-08	11857.93	5.02
Mar-06	8246.146	3.96	Mar-08	12609.42	7.41
Apr-06	8958.106	3.59	Apr-08	11792.93	7.61
May-06	9988.8	4.68	May-08	12142.66	8.75
Jun-06	8896.447	4.84	Jun-08	12327.35	11.89
Jul-06	9513.714	4.67	Jul-08	13005.86	12.01
Aug-06	9572.941	5.01	Aug-08	11791	12.1
Sep-06	9029.255	5.16	Sep-08	12194.02	11.8
Oct-06	8703.302	5.09	Oct-08	12715	10.72
Nov-06	9167.857	5.3	Nov-08	12108.59	8
Dec-06	9152.87	5.58	Dec-08	12865.25	5.91
Jan-07	9072.782	6.58	Jan-09	13475.67	4.39
Feb-07	9494.511	6.1	Feb-09	14791.53	2.43
Mar-07	9345.75	5.74	Mar-09	15254.53	0.26

Apr-07	9311.894	5.66	Apr-09	14491.34	0.7
			May-09	14559.66	0.13

Hypothesis Assumed (H_0) - The Repo rate doesn't affect the gold prices.

Alternate Hypothesis (H_1) - The Repo rate affect the gold prices.

Regression Analysis:

Regression Statistics	
Multiple R	0.893479
R Square	0.798305
Adjusted R Square	0.779969
Standard Error	554.9848
Observations	49

ANOVA					
	Df	SS	MS	F	Significance F
Regression	1	7168366.408	7168366.408	1.20893215	0.277143878
Residual	48	278686624.8	5929502.656		
Total	49	285854991.2			

	Coefficients	Standard Error	t Stat	P-value	Lower 99.0%	Upper 99.0%
Intercept	9286.054853	757.5061594	12.25871861	0.00	7252.487444	11319.6223
X Variable 1	139.9434076	127.2774544	1.099514508	0.277143878	201.7399966	481.626812

Analytical Overview:**Significant correlation with r** -0.893479**Change in INFLATION Rate accounts only 80% for the change in gold prices.****Significant linear regression with p value-** 0.277143878**Regression Equation-** $Y=139.943 X+9286.05$ **Interpretation:**

The value of multiple R shows that (0.89) shows that there is significant relation between gold prices and inflation rate. It verifies whatever our studies are until now that is the gold is an inflation hedge. This analysis also shows that change in inflation rate accounts 80% for the variation in gold prices but this movement is in reverse direction. In addition, it should be noted that increase in inflation rate accounts for increase in investment in gold, as it is an inflation hedge.

Also from the t-value we can see that the hypothesis can be rejected. This means that our assumption was wrong. (T-value is 1.099 which is less than tabulated value 2.56). Also from the graph we can observe that in the initial period the variation from the trend line is less in later period (from May 08 to May 09). Also in the later period the gap between gold prices and inflation rate becomes larger which shows the inverse movement between them.

Now actually what happens is, when there is increase in inflation rate, generally the RBI increases the CRR and Repo rate and the securities are demanded more. Gold is one of them universally accepted within the banking industry. Therefore the demand increases as well as prices also.

4. Stock market-

The performance of gold bullion is often compared to stocks. They are fundamentally different asset classes. Gold is regarded by some as a store of value (without growth) whereas stocks are regarded as a return on value (i.e. growth due to anticipated real price increase plus dividends). Stocks and bonds perform best in a stable political climate with strong property rights and little turmoil.

As the crude oil becomes cheap, the inflation rate goes down. (As on 6th June 2009). We have discussed earlier that how inflation rate is on the base of the gold prices. Similarly the lower inflation rate or the situation of deflation makes the stock market down. It tends to lower return from the stock market. At this time investment pattern moves towards the gold market. Now the return from both these sources is of long terms. Investment decision partly on, or solely on, technically analysis.

Analysis:

Date	Gold	Sensex	Date	Gold	Sensex
May-05	6104.576	6,715.11	Jun-07	8690.265	14650.51
Jun-05	6185.849	7193.85	Jul-07	8732.315	15550.99
Jul-05	6173.774	7635.42	Aug-07	8829.425	15318.6
Aug-05	6276.731	7805.43	Sep-07	9286.778	17291.1
Sep-05	6574.167	8634.48	Oct-07	9671.96	19837.99
Oct-05	6889.167	7892.32	Nov-07	10301.33	19363.19
Nov-05	7174.826	8788.81	Dec-07	10247.9	20286.99
Dec-05	7610.6	9397.93	Jan-08	11264.54	17648.71
Jan-06	7957.714	9919.89	Feb-08	11857.93	17578.72
Feb-06	7998	10370.24	Mar-08	12609.42	15644.44
Mar-06	8246.146	11279.96	Apr-08	11792.93	17287.31
Apr-06	8958.106	12042.56	May-08	12142.66	16415.57
May-06	9988.8	10398.61	Jun-08	12327.35	13461.6
Jun-06	8896.447	10609.25	Jul-08	13005.86	14355.75
Jul-06	9513.714	10743.88	Aug-08	11791	14564.53
Aug-06	9572.941	11699.05	Sep-08	12194.02	12860.43
Sep-06	9029.255	12454.42	Oct-08	12715	9788.06

Oct-06	8703.302	12961.9	Nov-08	12108.59	9092.72
Nov-06	9167.857	13696.31	Dec-08	12865.25	9647.31
Dec-06	9152.87	13786.91	Jan-09	13475.67	9424.24

Jan-07	9072.782	14092.92	Feb-09	14791.53	8891.61
Feb-07	9494.511	12938.09	Mar-09	15254.53	9708.5
Mar-07	9345.75	13072.1	Apr-09	14491.34	11403.25
Apr-07	9311.894	13872.37	May-09	14559.66	14625.25
May-07	8863.392	14544.46			

Hypothesis Assumed (H_0): Sensex values and Gold prices are not sufficiently co-related.

Alternative Hypothesis (H_1): Sensex value and Gold Prices are sufficiently co-related.

Regression Analysis:

Regression Statistics	
Multiple R	0.671901
R Square	0.451451
Adjusted R Square	0.396596
Standard Error	421.0839
Observations	49

ANOVA					
	Df	SS	MS	F	Significance F
Regression	1	1459260.49	1459260.49	8.229918344	0.01670353
Residual	48	1773116.608	177311.6608		
Total	49	3232377.099			

	Coefficients	Standard Error	t Stat	P-value	Lower 99.0%	Upper 99.0%
Intercept	7127.154538	774.2248155	9.205536163	0.0000	4673.424988	9580.884087
X Variable 1	0.137944363	0.048084621	2.868783426	0.01670353	-0.014448911	0.290337637

Analytical Overview:

Significant correlation with r **-0.671901**

Change in INFLATION Rate accounts 46% for the change in gold prices.

Significant linear regression with p value- **0.0167**

Regression Equation- **Y=0.1379 X-7127.154538**

Interpretation:

The relation between the gold and stock market can be clearly interpreted from the analytical calculation from the data. The t-value, p-value, multiple R & R square values clearly shows the picture. Here the t- value is 2.86 which is greater than tabulated value 2.56. This means that our hypothesis is wrong. There is significant correlation between gold prices and Sensex value. Also the Multiple R is 67% which shows the significance of relation between the two factors. The p-value is also very less.

B. Impact of commodity investment (gold) in portfolio

$$\text{PORTFOLIO RISK} = \text{SQRT} ((X_X^2 * SD_X^2) + (X_Y^2 * SD_Y^2) + (2 * X_X * X_Y * (r_{XY} * SD_X^2 * SD_Y^2)))$$

$$\text{RETURN} = [(X_X * R_X) + (X_Y * R_Y)]$$

1. **Standard Deviation (SD) for gold** = 0.01866
2. **Standard Deviation (SD) for Sensex** = 0.019935
3. **Correlation coefficient of x & y** = -0.671901

equity	gold		
pr.	pr.	RETURN	Risk
100	0	1.9	190
90	10	1.913	156.396474
80	20	1.926	130.5492871
70	30	1.939	112.4584393
60	40	1.952	102.1239306
50	50	1.965	99.54576108
40	60	1.978	104.7239306
30	70	1.991	117.6584393
20	80	2.004	138.3492871
10	90	2.017	166.796474
0	100	2.03	203

Interpretation: as investment in gold increases return of portfolio also increases and risk reduces up to 50% investment in gold after that risk also start increasing.

Conclusion

The value of multiple R value which is 0.36, shows that the correlation between the US \$ and Gold prices is insignificant. This shows that in the current scenario the US \$ exchange rate doesn't affect the gold prices significantly.

1. There is a high correlation between repo rate and gold prices, being other economic factors constant
2. The value of multiple R shows that (0.89) shows that there is significant relation between gold prices and inflation rate. It verifies what ever our studies are until now that is the gold is an inflation hedge
3. Gold is a good hedging tool

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CO₂ EMISSION BY POWER SECTOR IN INDIA: A COMPARATIVE
STUDY OF GOVERNMENT SECTOR AND PRIVATE SECTOR WITH
SPECIAL REFERENCE TO THE CLIMATE CHANGE IN GLOBAL
PERSPECTIVE

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Abstract

Increasing the availability of, and access to, modern energy services, particularly electricity, is an important element in the effort to increase the standard of living in India, especially in rural areas. Given the continued pace of high economic growth, the power sector is expected to grow rapidly in the coming decades, especially since electricity lies at the heart of most industrial activity. Much of this growth is expected to be based on coal, at least for the next 30 to 40 years. Use of India's significant domestic coal resources for power generation would enhance energy security- which is an emerging priority in the country. Given that per capita energy consumption is low as

compared to not only the industrial countries but also to many developing country (like china) and to the global average, but the post Copenhagen summit 2009 necessitates India to volunteer in reducing the energy and carbon intensity at nation level. Therefore, this paper focuses on trend in CO₂ emission by Indian power sector. A comparative analysis of Government Sector (Central as well as State) and Private sector is done to see the contribution of carbon emission in proportion to power generation by these players. The purpose of this paper is to explore the sector which may need more urgent attention in terms of reducing GHGs emission. The present study also highlights climate change in global vis-à-vis Indian perspective, the changing outlook of power sector and carbon Emission trends.

Keywords : Greenhouse Gas(GHG), Climate Change, Carbon Credit, Kyoto Protocol, United Nations Framework Convention on Climate Change (UNFCCC), Super Critical, Sub Critical, Carbon intensity, Power Sector

Introduction: CO₂ emission and its impact:

Carbon dioxide, methane, nitrous oxide and other gases- as a group called “greenhouse” gases (GHG)- are environment pollutants, and have the potential to bring severe ramification to entire globe. Barring a few pollutants they act globally, thus their impact on the environment is generally similar wherever in the globe they are released. As the world Bank (2005) puts it : ‘ greenhouse gases mix uniformly in the atmosphere, which makes it possible to reduce carbon emissions at ant point on Earth and have the same effect’. So the location of the originator of the emissions does not really matter from an environmental standpoint. Carbon is a generic term used for entire GHGs and its

reduction is one of the most important global issues confronting administrators, environmentalists, and national governments for the last decade.

Recent global temperature measurements indicate that the world's average temperature has increased at many greater than historical rates in recent decades. A warming planet and changing climate will have significant but varied global impacts. While the complexity of the global climate system makes it difficult to accurately predict the impacts of these changes, the evidence from modeling studies, as interpreted by the world's leading scientists assembled by the Intergovernmental Panel on Climate Change (IPCC), indicates that global mean temperature will increase by 1.4 to 5.8°C with a doubling of carbon dioxide concentration, relative to pre-industrial levels as per the Third Assessment Report of IPCC, 2001. There will be a median increase of 3.3°C in annual mean temperature by the end of the 21st century; the projected minimum and maximum temperature rise is 2.0°C and 4.7°C, respectively (IPCC, 2007). Predicted climatic changes with significant implications for India include changes in monsoon precipitation patterns, as well as a rise in extreme rainfall events, coastal storms, and droughts. Such changes in the climate could have enormous human, ecological and economic impacts on the country. The vast number of poor in India, who are particularly vulnerable to these kinds of climatic impacts, will be exposed to enormous risk (IPCC, 2001).

Looking at above demon impact on all species of the world and the climate, and at the same time impact on various macro-economic factors, it has now being generally agreed by most of the developing and developed nations to cut down the carbon emissions growth. The reduction in carbon emission will not only reduce the business risk in

future(the fear of regulations like carbon tax in future), but also bring the business opportunities to earn revenue by executing green and eco-friendly projects(discussed later)

Green House Gas Emission from the Power Sector: A Global Perspective

Climate change is a problem that faces the global community of nations with enormous variation in the contribution of different countries to the problem in terms of current, per capita and cumulative GHG emissions. GHGs average emission today is 4.8 tones/capita/year and it may rise to 8.7 tones/capita by 2060/year. Accepted safe level of CO2 emissions is 14.7 billion tones/per year or 2.3 tones/capita/year.

Globally power generation accounts for more than a quarter of all emissions of CO2, the main GHG causing climate change, and the proportion is rising quickly. Global emission of CO2 from power generation have grown more than 34 percent in the past eight years to 11.4 billion tons/year from 8.5 billion tons in 2000, despite some improvements in efficiency and slowly growing reliance on renewable energy. Around 65% of the increase since 2000 is attributable to a surge in emissions from China. The additional 2.9 billion tons of power-related CO2 emissions per year since 2000 is equivalent to the total annual carbon emissions of Australia, France, Germany, Italy, and Spain.

The world's top-ten power sector emitters in absolute terms are China, the US, India, Russia, Germany, Japan, the UK, Australia, South Africa and South Korea. The 27 member states of the European Union collectively is the third biggest emitter of CO2, after China and the US.

Table 1: Comparison of Per Capita Emissions of CO₂ by Power Sector –Developed Vs Developing Nations

Countries	CO ₂ Emission by Power Sector(Tones of CO ₂ /capita/year)
Australia	10.6
US	9.5
EU	3.3
China	2.4
India	0.6
Brazil	0.1

Source : www.carma.org

The table shows that Australian and American power sector is the top CO₂ emitter on per capita basis, and developing countries like China, India and Brazil are less as compared to developed countries

Indian Power Sector and its performances : The Indian power sector is dominated by government ministries and public sector corporations. Generally, the Central government, through the Ministry of Power, sets overall electricity policies, whereas the State governments focus on power plants located within their boundaries, and on regional and local transmission and distribution (T&D) networks.

Although currently about 60 percent of installed capacity is vested in the State sector, NTPC (a Central government-owned utility) is the leader in the power sector, accounting

for about 20 percent of total capacity (27 GW) and about 28 percent of the total power generated in the country. NTPC also is usually the first utility to experiment with, deployment of supercritical pulverized coal technology is taking place in NTPC-owned plants. It also is actively involved in developing gasification technologies for Indian coal.

The typical generation profile of the Indian power sector in 2010-11 (See Table 2) dominated by thermal (65.38%) sector of which share of coal is 54.41% followed by hydro (21.95%) and others. Contribution of fossil fuel in power has shown declining trend in the last 5 years, but its dominance has led increased overall carbon intensity of the sector. However, according to the 11th Five year Plan, clean capacity additions such as nuclear power is projected to constitute 5% of the total electricity generation and hydro power is expected to contribute around 13% of the electricity generation for the Indian Power Sector.

Table 2 : Total Installed Capacity of Power Sector in India as on 31-01-2011

Fuel	MW	Percentage
Total Thermal	1,11294.48	65.38
Coal	92638.38	54.41
Gas	17456.35	10.25
Oil	1199.75	0.70
Hydro (Renewable)	37367.40	21.95
Nuclear	4780	2.80
RES* (MNRE)	16786.98	9.86
Total	170228.86	100

* Renewable Energy Source ;Source : NTPC Website

Power Generation & CO2 Emission data : The data of CO2 emission of central govt, state govt and private sector were collected and analyzed. In the power sector, data of

Tata Power and Reliance Energy were collected as these two players are the largest private power producers in the country

All India (Aggregate):

Table 3 : Power generation and CO2 emission data (2000-01 TO 2008-09)

Year	All India -Aggregate			All India- Aggregate (Thermal)			
	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	% Thermal
2000-01	465321	380959970	0.82	375923	380959971	1.01	80.79
2001-02	481417	399436516	0.83	390637	399436516	1.02	81.14
2002-03	502480	427116728	0.85	420718	427116728	1.02	83.73
2003-04	517174	439157728	0.85	428838	439157728	1.02	82.92
2004-05	548451	461225442	0.84	449681	461225442	1.03	81.99
2005-06	576206	469721237	0.82	460250	469721237	1.02	79.88
2006-07	617567	494713250	0.80	488583	494713250	1.01	79.11
2007-08	653434	520488025	0.80	516343	520488025	1.01	79.02
2008-09	668029	548383082	0.82	543274	548383082	1.01	81.32
% Increase	43.56	43.94	0.26	44.51	43.94	-0.39	

Source : CEA (Edited and compiled)

Central Government's Contribution :

Table 4 : Power generation and CO2 emission data (2000-01 TO 2008-09)

Year	All India –Central Govt			All India- Central Govt(Thermal)			
	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	% Thermal
2000-01	181125	144934498	0.80	148278	144934498	0.98	81.87
2001-02	184946	148486829	0.80	150723	148486829	0.99	81.50
2002-03	196966	159423295	0.81	159787	159423295	1.00	81.12
2003-04	203730	168085004	0.83	165425	168085004	1.02	81.20
2004-05	221334	181686166	0.82	179831	181686166	1.01	81.25
2005-06	241788	187758954	0.78	192689	187758954	0.97	79.69
2006-07	258268	198795931	0.77	206964	198795931	0.96	80.14
2007-08	274762	210922563	0.77	219086	210922563	0.96	79.74
2008-09	279324	215384249	0.77	223624	215384249	0.96	80.06
% Increase	54.21	48.60	-3.75	50.81	48.60	-2.04	

Source : CEA (Edited and compiled)

State Government's Contribution :

Table 5 : Power generation and CO2 emission data (2000-01 TO 2008-09)

Year	All India –State Govt			All India- State Govt(Thermal)			
	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	% Thermal
2000-01	247972	208887870	0.84	192716	208887870	1.08	77.72
2001-02	256515	220764931	0.86	201665	220764931	1.09	78.62
2002-03	254623	230644534	0.91	211873	230644534	1.09	83.21
2003-04	263224	235085180	0.89	216146	235085180	1.09	82.11
2004-05	276022	242761922	0.88	221862	242761922	1.09	80.38
2005-06	280656	243647099	0.87	217935	243928516	1.12	77.65
2006-07	301488	254638301	0.84	229306	255008431	1.11	76.06
2007-08	312295	263013913	0.84	236595	263409805	1.11	75.76
2008-09	316106	280378167	0.89	252711	280880566	1.11	79.95
% Increase	27.47	34.22	5.29	31.13	34.46	2.77	

Source : CEA (Edited and compiled)

Government Sector (Center & States) Contribution:

Table 6: Power generation and CO2 emission data (2000-01 TO 2008-09)

Year	All India –Public Sector			All India- Public Sector (Thermal)			
	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	% Thermal
2000-01	429097	353822368	0.82	340994	353822368	1.04	79.47
2001-02	441461	369251760	0.84	352388	369251760	1.05	79.82
2002-03	451589	390067829	0.86	371660	390067829	1.05	82.30
2003-04	466954	403170184	0.86	381571	403170184	1.06	81.71
2004-05	497356	424448088	0.85	401693	424448088	1.06	80.77
2005-06	522771	431687470	0.83	410624	431687470	1.05	78.55
2006-07	560199	453804361	0.81	436270	453804362	1.04	77.88
2007-08	587541	474332369	0.81	455681	474332368	1.04	77.56
2008-09	596073	496264814	0.83	476335	496264815	1.04	79.91
% Increase	38.91	40.25	0.96	39.69	40.25	0.40	

Source : CEA (Edited and compiled)

Private Sector's Contribution :

Table 7: Power generation and CO2 emission data (2000-01 TO 2008-09)

Year	All India –Private Sector			All India- Private Sector (Thermal)			
	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	% Thermal
2000-01	36224	27137603	0.75	34929	27137603	0.78	96.43
2001-02	39957	30184756	0.76	38249	30184756	0.79	95.73
2002-03	50891	37048899	0.73	49058	37048899	0.76	96.40
2003-04	50220	35987544	0.72	47267	35987544	0.76	94.12
2004-05	51095	36777354	0.72	47988	36777354	0.77	93.92
2005-06	53434	38033767	0.71	49626	38033767	0.77	92.87
2006-07	57368	40908888	0.71	52313	40908888	0.78	91.19
2007-08	65893	46155657	0.70	60662	46155657	0.76	92.06
2008-09	71956	52118267	0.72	66939	52118267	0.78	93.03
% Increase	98.64	92.05	-3.31	91.64	92.05	0.21	

Source : CEA (Edited and compiled)

Tata Power's Contribution :

Table 8: Power generation and CO2 emission data (2000-01 TO 2008-09)

Year	All India –Tata Power			All India- Tata Power (Thermal)			
	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	% Thermal
2000-01	9350	5473963	0.59	8204	5473963	0.67	87.74
2001-02	10562	7700213	0.73	9267	7700213	0.83	87.74
2002-03	11901	9216516	0.77	10570	9216516	0.87	88.82
2003-04	11814	8315219	0.70	10474	8315219	0.79	88.66
2004-05	12530	9093271	0.73	11098	9093271	0.82	88.57
2005-06	13066	9112312	0.70	11053	9112312	0.82	84.59
2006-07	13537	9788564	0.72	11411	9788564	0.86	84.29
2007-08	13877	10725000	0.77	12395	10725000	0.87	89.32
2008-09	13663	11046643	0.81	12532	11046643	0.88	91.72
% Increase	46.12	101.80	38.10	52.75	101.80	32.109	

Source : CEA (Edited and compiled)

4.7 Reliance Energy's Contribution :

Table 9: Power generation and CO2 emission data (2000-01 TO 2008-09)

Year	All India –Reliance Energy/BSES (Thermal)			All India- NTPC		
	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)	Net Generation (GWh)	Absolute Emission (tCO2)	Specific Emission (tCO2/MWh)
2000-01	3510	3268410	0.93	126621	113903428	0.90
2001-02	3779	3548191	0.94	129364	117708556	0.91
2002-03	4875	4195198	0.86	136810	126559701	0.93
2003-04	6610	5269011	0.80	139943	132244239	0.94
2004-05	5684	4611235	0.81	153364	145263727	0.95
2005-06	5214	4324730	0.83	164699	150704566	0.92
2006-07	5588	4595668	0.82	178062	161502121	0.91
2007-08	5897	4797464	0.81	187979	171535007	0.91
2008-09	6177	4988276	0.81	193616	176829030	0.91
% Increase	75.98	52.62	-13.27	52.90	55.24	1.52

Source : CEA (Edited and compiled)

5. Comparative Analysis (between the year 2000-09)

Based on data, comparative analysis of performance of Central Govt, State Govt, Private sector (with all major sources of fuel and thermal based exclusively) and leading power producers NTPC, Tata Power and Reliance Energy on the parameters of (i) present value of average specific emission, (ii) growth in average specific emission, and (iii) percentage increase in CO₂ emission) have been done as mentioned under.

(A) Centre –State –Private Sector (All sources of Fuel)

Overall, amount of CO₂ emission has increased by 44 percent, average specific CO₂ emission has increased marginally by 0.26 percent and present level of average specific CO₂ emission is 0.82 on all India basis. Performances of Central, State Governments and private sector on above mentioned parameter are as following

(i) Present value of Average Specific CO₂ Emission: Performance of private sector is the best with value of 0.72, State Government is the worst with value of 0.89

(ii) Growth in Average Specific CO₂ Emission: Performance of Central Government is the best with negative growth of 3.75 percent and State Government is the worst with positive growth of 5.29 percent.

(iii) Percentage increase in CO₂ emission: Performance of State Government is the best with just 34 percent increase in CO₂ emission and private sector is the worst with 92 percent increase in CO₂ emission

(B) Centre –State –Private Sector (Thermal)

Overall, amount of CO₂ emission has increased by 44 percent, average specific CO₂ emission has decreased marginally by 0.39 percent and present level of average specific CO₂ emission is 1.01. Performances of Central, State Governments and private sector on above mentioned parameter are as following

(i) Present value of Average Specific CO₂ Emission: Performance of private sector is the best with value of 0.78, State Government is the worst with value of 1.11

(ii) Growth in Average Specific CO₂ Emission: Performance of private sector is the best with negative growth of 3.31 percent and State Government is the worst with positive growth of 2.70 percent.

(iii) Percentage increase in CO₂ emission: Performance of State Government is the best with just 34.50 percent increase in CO₂ emission and private sector is the worst with 92 percent increase in CO₂ emission

B) NTPC–Tata Power –Reliance Energy (Thermal)

(i) Present value of Average Specific CO₂ Emission : Performance of Reliance Energy is the best with value of 0.81, NTPC is the worst with value of 0.91

(ii) Growth in Average Specific CO₂ Emission: Performance of Reliance Energy is the best with negative growth of 13.27 percent and Tata Power is the worst with positive growth of 32.11 percent.

(iii) **Percentage increase in CO2 emission:** Performance of Reliance Energy is the best with just 52.60 percent increase in CO2 emission and Tata Power is the worst with 110.8 percent increase in CO2 emission

Table 10 : Comparative Chart for Centre –State-Private Sector

Parameter of Performance Evaluation	All Major Sources of Fuel		Thermal Based Only	
	Best	Worst	Best	Worst
Present value of Average Specific CO2 Emission	Private Sector	State Govt	Private Sector	State Govt
Growth in Average Specific CO2 Emission	Central Govt	State Govt	Private Sector	State Govt
Percentage increase in CO2 emission:	State Govt	Private Sector	State Govt	Private Sector

Table 11 : Comparative Chart for NTPC –Tata Power –Reliance Energy

Parameter of Performance Evaluation	Thermal Based Only	
	Best	Worst
Present value of Average Specific CO2 Emission	Reliance Energy	NTPC
Growth in Average Specific CO2 Emission	Reliance Energy	Tata Power
Percentage increase in CO2 emission:	Reliance Energy	Tata Power

The typical carbon intensive profile for the Indian power sector is due to dominance of fossil fuel-based power generation during the past decades. Coal-based power generation with relatively low efficiency sub-critical technology has been dominating the generation mix for the Indian power sector for an extended period of time.

6. Conclusion

GHG control and reduction of emissions from the thermal-power sector necessarily will be a critical element in the India's carbon-mitigation strategy. Based on data, comparative analysis of performance of Central Govt, State Govt, Private sector (with all major sources of fuel and thermal based exclusively) and leading power producers NTPC, Tata Power and Reliance Energy on the parameters of (i) present value of average specific emission, (ii) growth in average specific emission, and (iii) percentage increase in CO₂ emission) reveal that overall, amount of CO₂ emission has increased by 44 percent, average specific CO₂ emission has increased marginally by 0.26 percent and present level of average specific CO₂ emission is 0.82 on all India basis. Among Central, State Governments and private sector, average specific CO₂ emission at present is the worst for state government players. The private sector has controlled the growth in average specific CO₂ emission, but at the same time percentage increase in CO₂ emission has highest by this sector. Comparative study among NTPC, Tata Power and Reliance Energy shows that Reliance Energy is the best among all in terms of all parameters discussed. The basic reason behind is the use of gas based thermal power generation. Indian Coal power sector has shown marginal improvement in reduction of CO₂ emission in the last 10 years because of increasing use of efficient boilers, gas based power generation (specially by private sector) and increasing emphasis use of renewable sources of energy

like hydro, wind, solar etc. However, there also are other, more immediate challenges for the power sector, of which the most pressing is the need to enhance the availability of electric power to the country's citizen and industry. Further, the recent stand of Government of India in Cancun summit at Mexico on climate change, making legal binding emission cuts (reversing the earlier stand of only volunteer reduction of GHG as per Kyoto Protocol) is going to make power sector most vulnerable to carbon tax.

Therefore, it is imperative to accelerate the process of switching to the greener technologies and realize the potential to earn revenue by carbon credit practices.

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QUALITY OF WORKLIFE- A WAY TO MANAGE BUSINESS IN CURRENT ECONOMIC SCENARIO

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Abstract

While one of the most serious consequences of the current economic downturn has been millions of people being fired from their job. But a strange counter-phenomenon to this is more than just a handful of talented staff in the companies, chose exactly this time to quit and find new employment.

The carefully engineered HR strategies made for recession are challenged by the exact same phenomenon. On tight budget and pressed for keeping their market share, companies downsize and keep only those who are absolutely necessary. However, in the companies, a wave of people resigning starts right after the downsizing, upsetting the precarious balance achieved through getting rid of the non-essential workforce.

The main intent of doing this project is to understand what good quality work life means to employees and how it helps the companies to retain its best talent. The main objectives are to examine the relevance of various QWL factors in terms of their contribution to the satisfaction of employees to their job and to identify the areas having potential for improving employee motivation. The project helps me to understand how a company's HR Department tries to improve their business by keeping good relations with employees.

The primary data was collected through the questionnaire. The sample size was 80 respondents comprising of managers and executives from 2 different manufacturing companies. Percentage score analysis, mean score analysis and Pearson's correlation has been done to meet the objectives of the study.

Key words: Quality of Work Life, job satisfaction, employee motivation

INTRODUCTION

Work is an integral part of daily life of people, as it is their livelihood or career or business. On an average people spend around twelve hours daily in the work place that is one third of our entire life it does influence the overall quality of their life. It should yield job satisfaction, give piece of mind, a fulfillment of having done a task, as it is expected, without any flaw and having spent the time fruitfully, constructively and purposefully. Even if it is a small step towards the lifetime goal, at the end of the day it gives satisfaction and eagerness to look forward to the next day. If organizations are concerned about developing their human resources and gaining a competitive advantage in the marketplace, it seems necessary that they attend to one of their most precious assets, namely, their human resources. “Employee presence does not mean Employee productivity”. The profit of successful organizations is not to be achieved at the expense of its employees. The only thing that will maintain today’s source of competitive advantage is high quality personnel instead of merely capital, technology or long-lived products. In today’s commercial world, a productive workforce can increase productivity and efficiency, as well as being a vehicle essential for gaining and maintaining sustainable competitive advantages for business organizations on a global basis.

It is necessary that the employees feel motivated and committed to their job. And bringing in the quality to their working life by paying attention on various measures is way to make the employee feel motivated and satisfied with their job. Many factors determine the meaning of quality of work life. Some of them are; Work Family Balance, Relationship with peers, Role Clarity, Meaningfulness of Job, Access to Resources, Working Environment, Opportunity to Develop new Skills, Health Care Benefits and Welfare, Fair and Equitable pay, Opportunity to grow in career. All these factors play a significant role in adding quality to the working life of employees.

QWL: The Human Resource Departments' Strategy

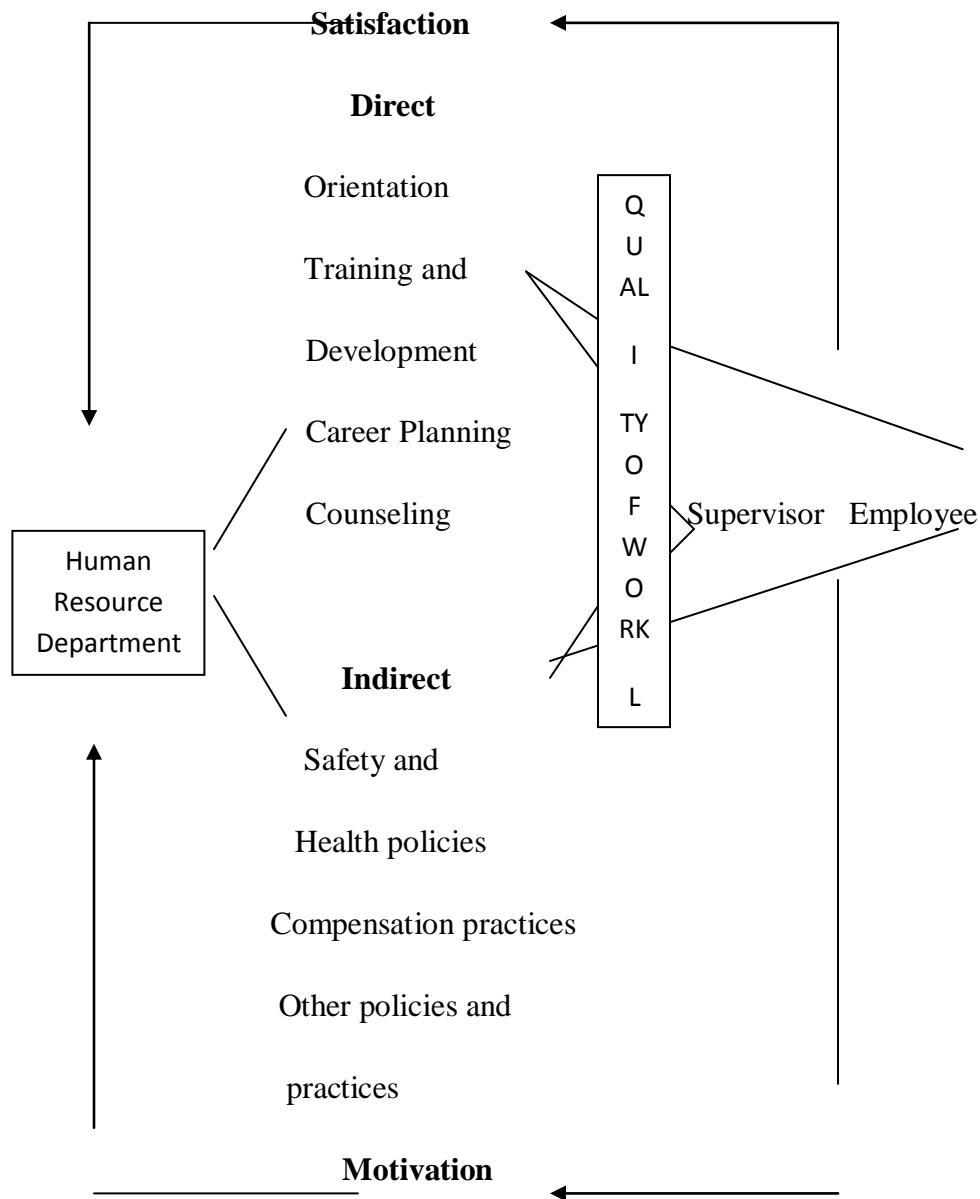
The human resource department plays a key role in adding quality to working life of employees. By substantiating employee satisfaction and bottom line benefits, which range from lower absenteeism and turnover to higher productivity and fewer accidents, the HR plays the major role. Perhaps the most crucial role of the department is winning the support of management particularly top management which is almost universal prerequisite for successful QWL programs.

Only employees' satisfaction and motivation can add quality to their working life. The department has both direct and indirect influence on employee motivation and satisfaction.

As the figure 1 illustrates, the department makes direct contact with employees and supervisors through orientation, training and development, career planning and counseling activities. At the same time, these activities may help a supervisor do a better job of motivating employees.

The policies and practices of the department also influence motivation and satisfaction indirectly. Rigorous enforced safety and health programs, for example, can give employees and supervisors a greater sense of safety from accidents and industrial health hazards. Likewise, compensation policies may motivate and satisfy employees through incentive plans, or they may harm motivation and satisfaction through insufficient rises or outright salary freezes. The motivation and satisfaction of employees act as feedback on organization's QWL and on the departments day to day activities.

Figure 1: Role of HR Department in influencing QWL



OBJECTIVES OF THE STUDY

The research study aims at assessing the importance of various QWL factors to employees in the two organizations; examining the relevance of various QWL factors in terms of their contribution to the satisfaction of employees to their job ; and identifying the areas having potential for improving employee motivation and job satisfaction.

RESEARCH METHODOLOGY

1. **Research Design:** Descriptive Research
2. **Sampling method:** *Simple Random Sampling* has been used for the selection of the sample.
3. **Data Sources:** The study uses both primary and secondary data. The primary data was collected through a questionnaire which was prepared to find out the satisfaction level of employees towards various QWL variables. The questionnaire was designed using 5 point likert scale and dichotomous scale. The questionnaire was designed for evaluating quality of working life of employee with 10 different parameters. The parameters are identified after doing the review of literature. The 10 parameters are Work Family Balance; Relationship with peers; Role Clarity; Meaningfulness of Job; Access to Resources; Working Environment; Opportunity to Develop new Skills; Health Care Benefits and Welfare; Fair and Equitable pay; Opportunity to grow in Career.
4. **Sample Size:** The sample size was 80 respondents comprising of managers and executives from 2 different manufacturing companies.
5. **Analysis of the data:** Percentage scores and mean scores has been used to analyze the data. Pearson's correlation analysis is done to find out the degree of correlation between various QWL variables and Job Satisfaction and its comparison with the mean score rank order is done to find out the areas having potential for improving employee motivation and job satisfaction.

RESULTS AND DISCUSSIONS

The quantitative analysis was performed using SPSS. The data collected was converted into an SPSS data sheet. Percentage scores and the mean scores were calculated and the interpretations are derived.

Table 1 : Summary of percentage scores and mean scores

S.No	QWL Parameters	Percentage Agreement	Mean score	Rank order	Remarks
1	Work Family Balance	87.50	4.20	3	Organizations takes care of the non work life activities of its employees.
2	Relationship with peers	88.70	4.09	4	In the organizations there exists a friendly environment ; a means of social integration
3	Role Clarity	86.25	4.41	1	Employees are clear about what is expected out of them
4	Meaningfulness of Job	76.20	4.31	2	Three fourth of the employees believe that their work is meaningful and challenging
5	Access to Resources	72.50	3.73	7	Dissatisfaction among employees is on account of technology as most of the respondents answered that technology is in bad shape in their respective organizations.
6	Working Environment	67.80	3.93	6	Less percentage agreement with the suitability of working environment; employees are not much satisfied with the working conditions
7	Opportunity	80.00	4.08	5	The organizations provides its employees

	to Develop new Skills				with the opportunity to increase in their basket of knowledge and skill
8	Health Care, Benefits and Welfare	64.10	3.56	8	Poor agreement with welfare policy of the organization : dissatisfaction on account of canteen and food facilities; health and safety needs are also not adequately met by the organizations.
9	Fair and Equitable pay	58.80	3.55	9	Employee are not satisfied with the organizations' pay policy this implies that their economic needs are not adequately met by the organizations
10	Opportunity to grow in career	65.00	3.66	10	Quiet a good percentage of employees are not satisfied with the career grow opportunities provided by the organizations

Variables 1, 2, 3, 4 and 7 can be put under group 1 with more than seventy five percentage of agreement and mean score greater than 4 and rest other variables under group 2 with percentage agreement less than 75% and mean score less than 4. As out of 10 variables, 5 falls under group 1 it can be interpreted that overall QWL in the organizations where the research is conducted is not poor. However, it is imperative to point out here that this can in no way be construed to mean 'good', or 'ideal', state of QWL exists in the organizations. None of the factors have recorded 'poor' existence of QWL. But the organizations have to come forward in a big way to improve on its health and safety policies, welfare measures, and pay policy. Surprisingly, QWL is below average percentage level in case of fair and equitable pay and with least mean score among all variables. Fair and equitable pay is one of the major factors related to job satisfaction and in turn to QWL. Also employees seem to be in less agreement with the

existing working conditions. The dissatisfaction among employees with the working conditions can be attributed to poor temperature control, inefficient information flow system and non accessibility to proper technology at their desk.

In contradiction to high percentage agreement in case of opportunity provided by the organizations to develop new skills and upgrade the existing ones it was founded that quite a good number of people (32%) haven't attended any training program but out of those who have attended training programs approximately 75% of them have found the training content either very good or good (Exhibit – 1) and more than 90% of the respondent population feels that the training programs helps an employee to develop new skills and upgrade the existing ones (Exhibit – 2). A little more effort and management's interest in organizing the training sessions, can make employees feel more satisfied and would make them more productive.

Results from Co-relation Tests

Correlation tests were conducted to examine the individual relationships between the QWL dimensions and job satisfaction. The outputs of the tests were summarized in the table below

Correlations between individual QWL variable and Job Satisfaction

Table 2 : Summary of Correlation analysis and mean score comparison

S.No	QWL- Job Satisfaction Relationship	R values	Rank order	Mean Score Rank order	Difference
1	Work Family Balance	.620	9	3	6
2	Relationship with peers	.531	10	4	6
3	Role Clarity	.810	4	1	3
4	Meaningfulness of Job	.857	2	2	0
5	Access to Resources	.890	1	7	-6
6	Working Environment	.812	3	6	-3
7	Opportunity to Develop new Skills	.701	8	5	3
8	Health Care, Benefits and Welfare	.771	6	8	-2
9	Fair and Equitable pay	.705	7	9	-2
10	Opportunity to grow in career	.801	5	10	-5

* correlation at level of significance .05

The above correlation tests indicated that all the individual QWL variables have significant impacts on job satisfaction. Quality of working life can only be brought in if the workers feel satisfied in the organization. Therefore, all these factors needed to be looked after to maintain the quality in the working life of employees. It is also clear that the 3 QWL variables (Access to resources, working environment, and opportunity to grow in career) has to be given more

importance as these variable has got higher R values. It is interesting to note that three QWL variables (Access to Resources, working environment, and Opportunity to grow in career) which contribute significantly towards Job satisfaction and thus in turn towards QWL got the lowest mean scores or in other words lowest percentage agreement. Therefore meeting the fourth objective of the study these three variables can be treated as the areas having potential for improving employees' motivation and satisfaction related to job and thus in turn improving the quality of working life of employees.

SUGGESTED GUIDELINES TO IMPROVE QWL

To get the best out of employees' a good amount of investment is required for up gradation of technology and for improving the working conditions. Management's interest in organizing required training programs for its employees is a prerequisite for ensuring quality in working life of employees. An organization of a get to together of the families of employees help make the employees treat the organization as their family and their colleagues as family members and in turn making the organization a place where they want spent their maximum time, working hard to make it number one in the market. Promotion and organization of more recreational activities such as games, excursion trips, quizzes, workshops, seminars, training sessions etc will add to the quality of working life of employees. Educating the employees about the organization's market share and competitor's scenario will motivate the employees to work hard to achieve the goals of the organization. An organization of talent hunt can lead to great improvement in quality of working of the employees. As each person would like to get appreciations form others for the talent they have in them. This will help them feel motivated and generate a sense of belongingness to the company.

CONCLUSION

The study shows that the organizations are doing much to add quality to the working life of employees in order to make them feel motivated and satisfied with their job. But there are some major areas where management needs to devote a good amount of time and effort. . However this study is not free from inherent limitations. Firstly the sample is small, more data from the employees would have given a much accurate result. However in lieu of its limitation, this study has an extended scope in the field of strategic HR.

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ANNEXURE

Exhibit 1 : Have you ever attended any training program in the organization? If yes how do you find the training content?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	51	63.800	63.800	63.800
	No	27	36.200	36.200	100.0
	Total	80	100.0	100.0	

TRAINING * CONTENT Cross tabulation

			CONTENT			Total
			Very Good	Good	Fair	
TRAINING Yes	Count	12	27	12	51	
	% within TRAINING	23.5%	52.9%	23.5%	100.0%	
Total	Count	12	27	12	51	
	% within TRAINING	23.5%	52.9%	23.5%	100.0%	

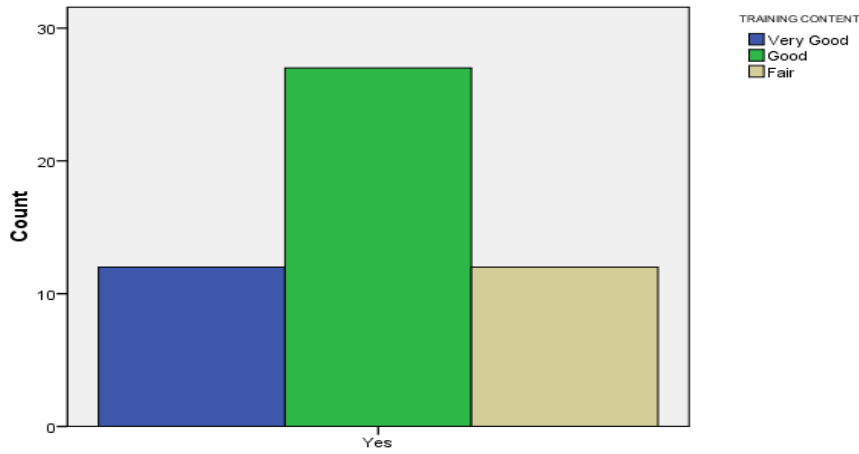
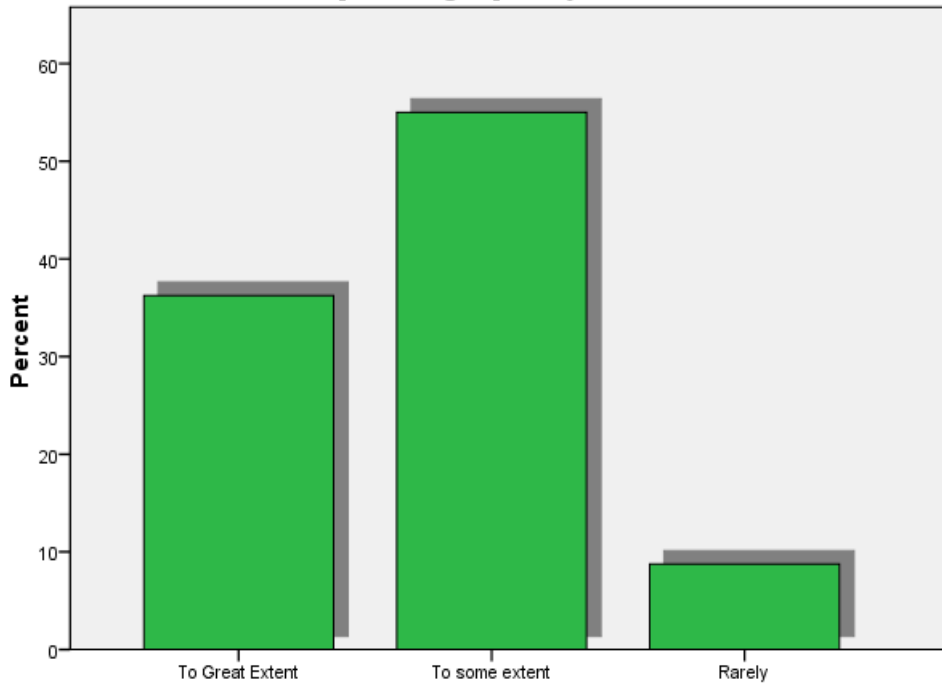


Exhibit – 2: How far training programs help an employee to achieve the required skill for performing the job ?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid To Great Extent	29	36.2	36.2	36.2
To some extent	44	55.0	55.0	91.2
Rarely	7	8.8	8.8	100.0
Total	80	100.0	100.0	

How far training programme help an employee to achieve the required skill for performing a specific job



WOMEN LEADER: FULFILLING CAREER ASPIRATIONS

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Abstract

Life is all about letting go of the past, and grabbing the future. One great man once said, “The rung of a ladder was never meant to rest upon, but only to hold your foot long enough to put the other foot higher”. Graduation day is the day when we have to let go of the rung of the ladder and stop higher towards our eternal destination. Our problems are rooted in the past mistakes, not our capacity for future greatness. “Chase your dreams, face your fears, and dare to do the impossible”. It is that should accept our limitations, but we shouldn’t let them limit us, it is also said that, “we don’t always get what we want in life; some time the circumstance don’t allow us to. At a time like that, we need to learn how to change ourselves. But it is sure we have our self to conquer the looming challenges and chart our way to a successful future. The leadership challenges that prevail today and the leadership style changes that are demanded of all incumbent and aspiring leaders have prepared women to cope with new challenges better than their male counterparts. In a country like India women as leaders have received far more acceptability due to their style flexibility.

Women have development a way of life and work which have determined their attitude towards work and home and home and enabled them to develop a deeper philosophical manifesto. This sort of approach on the part of women will make them outstanding women leaders to develop and sustain in all types of organizations. In every scenario that leads to economic value creation women has been playing a value role. Over the last decade, there has been dramatic change in the number of women who have entered into the Indian corporate world. Women entrepreneurs are setting up business of their own at various stages of life because of a variety of reasons viz., independence, flexibility, and desire to make a difference and making money. As the women is being increasing in the work force, the major challenge that presses a women is the gender

diversity. This calls for new policies, new mindsets and new work ethics. Several organizations now have developed women friendly policies with the objective of attracting and retaining women in large numbers. There is a clear shift from the earlier paternalistic push strategy (where by career development was the responsibility) to an employer driven pull strategy where women is being persuaded to take responsibility for managing her career.

Introduction

In today's external environment, all organizations do not think it is possible and do not want to offer a value proposition that includes lifetime career development in exchange for tenure/loyalty for the society. Organizations believe that the employee value proposition in the "new deal at work" is to give transparent career development opportunities to those with potential and performance in exchange for the optimum application of their skills and knowledge till such time they are with the company.

So, while the focus is on creating a self-development culture, organizations seem to take the responsibility for setting expectations, creating growth paths and communicating the framework to the employees.

Career management and development is hence seen as a partnership between the organization and the individuals, and it is in both parties' interests to collaborate. The organization's responsibilities in this "new deal at work" are:

- To set the right expectations while hiring employees
- To adopt a participative approach to career development
- To develop a career development framework that caters to the high potential/high performance employees
- To articulate the competencies required for different roles for employee self development
- To communicate and be transparent with career opportunities within the organization

The individuals' Responsibilities are:

- To take onus for managing their own careers
- To take efforts to educate themselves on the competency framework and the career development framework
- To continuously assess themselves and make the efforts to consciously develop their competencies
- To use organizational initiatives for employee development to further develop themselves

- To plan their careers for the short term & long term keeping in mind possible opportunities that the organization makes available

By doing this, organizations are conveying a clear message to their employees that they are empowering and supporting them in their development, but they are not responsible for their career development.

Career Progression Based on Competencies' and not tenure.

There has been a significant shift to use competencies as the basis for career progress in thereby moving away from tenure or time based promotions.

To do this, organizations have had to define the competencies required at various levels and articulate them with clarity in terms of its behavioral indicators. The competency framework is not just the foundation for career progression but also linked to the many other development initiatives of the organization.

A Competency Assessment Process becoming essential either through assessment centers or the Manager's Assessment.

All organizations in the study have implemented some kind of process to assess employees on competencies which subsequently have been used for career progression decisions

The assessment is administered by the supervising manager of the employee or by an internal panel or by an external agency through trained assessors.

Some organizations also use performance ratings, peer assessments or 360 degree feedback to corroborate the Assessment Centre result.

In organizations where the people managers assess their employees, the competency assessment forms part of the performance management system focusing on their aspect:

- Goals and objectives
- Job skill the functional and technical skill that one requires to carry out their role
- Leadership competencies the behaviors that are required for the future

The organization uses the performance appraisal discussion for assessing the above three areas and hiring the employee and the manager to understand what experiences the employee needs to go through in order to grow and build a career.

The advantage of this integration is that assessment of performance and competency is completed at the same time. However, there are two potential degrees of merging competency assessment with the performance appraisal process.

1. Firstly the linkage of perceived linkage with rewards makes objective self-assessment by the employee tougher.
2. Secondly, the parameters of assessment for the purpose of development and progression could vary a development objective would require assessment of competencies applicable to the current level, while a progression objective would require assessment of the competencies applicable at the next level. Some companies resolve this issue by assessing employees on additional competencies either through an assessment centre or in a separate discussion with the manager.

Organizations attempting to push promotion time lines

In the early stages of BPO industry there was an urgent need for people at different levels, especially the need for people managers. Employees in their early 20's with just 2+ years experience were seen as "veterans" in the industry and were quickly promoted and given people management responsibilities. Similarly, even in the IT industry, many employees became project managers quite early in their careers.

As the industry is maturing and a base level of talent is available, organizations are increasingly pushing promotion time lines, reflecting the emergence of a more realistic opportunity scenario.

Mobility within the Organization through Open Job Posting Systems and not through Traditional Job Rotations.

Many of the organizations we surveyed have discontinued their job rotation system of the past and have moved to an open job posting system. They seem to have encountered two challenges with the traditional job rotation system:

- It was not benefitting the organization directly since it did not help in filling up existing vacancies
- It was placing onus on the organization in creating opportunities for employees.

Having said this about job rotation, there are mixed trends observed with the Open Job Posting (OJP) since the transformation has not necessarily been smooth.

The successful organizations seem to have good support systems that have enabled the OJP system to work as well oiled machinery. Some others have pursued the professional development path where it becomes a planned movement of employees and is through a consensus of the manager and the employee.

While the OJP has the lofty goal of "providing careers within rather than outside", its execution has been plagued by some major obstacles:

- Finding timely replacement of talent in place of the employees opting out through the OJP has become a challenge. It requires great planning and effort on the part of the manager to ensure smooth transition.
- Employees working on projects at customer sites especially in the IT industry, have a problem of moving out primarily because of the familiarity with the customer and the customer's insistence on continuity. Give the business sensitiveness, these moves get stalled and the organization is seen as not living up to the commitment of the OJP system.
- The manager is not prepared to let go of his talent and risk his deliverables as finding trained replacements have become a Herculean task given the external labour market
- On the employee's part there entry if unsuccessful is not necessarily a very pleasant experience. This ends up creating a fear of failure.

In organizations where OJP system has matured Managers pro actively counsel their employees to apply for internal movements and it is further facilitated by Career Counselors and or skip-level Managers.

A critical success factor in implementing an OJP is the positioning of lateral career movement as a positive opportunity ever as the Broad banding system and the business require the flexibility of moving employees across more frequently as and when the need arises. In all this, there is a phenomenal- task for HR to communicate that job enrichment is also a means of building careers for employees.

Creating cross-business opportunities for people across the larger organization

The larger global organization seems to have the benefit of offering global opportunities and is increasingly doing this through the global OJP system. This is win as India talent has now become increasingly recognized as globally valuable. It also helps retention in a big way.

Best practices

We give below some the organization practices that are worth examining closely for adoption:

A well-articulated Employee Value proposition

An Employee Value Proposition simply stated, is the organization's compelling answer to the question "Why would a talented person choose to work for this organization?"

There are well articulated EVP such as "adding vitality to life". All the communication efforts at every stage emphasize the message. All initiatives, including Career Development, are aligned to

this proposition. Another example of an EVP would be offer abundant opportunities across the organization and to make sure that EVP of mobility stands the test of time in the organization. This becomes the core around which HR rallies many of its programme to ensure its success. Organizations with a well articulated EVP seem to have a distinct edge.

Multiple Career Ladders to Cater to Different Expectations of People

While the majority of employees perceive that the only way to progress is by taking on people management responsibilities, there are some who value technical specialization. The approach of creating multiple career ladders caters to the varied needs of people. Multiple career ladders are alternative ladders to the people- management ladder. Depending on the business, these ladders could be technical, functional domain-related or support to core operations.

Multiple career ladders send a clear message that the organization is committed to creating different and distinct value-added roles for employees based on business needs and people aspirations. The ability to create technical specialists and experts is seen by many organizations as an important building block towards securing future competitive advantage.

The career counselor role to facilitate career Development

Some organizations have institutionalized career enabler roles, typically designated Career Counselors, who interface with the manager, the employee and HR to ensure that career development processes are administered effectively.

Employees who aspire to move to a particular role can first discuss with their Career Counselors to get a holistic view of the role and understand the pro and the cons of the move into the role as well as the competencies required to perform the role. This helps employees make a well informed choice.

Career Counselors also network with managers and other career counselors in different parts of the business so that they can promote informal discussions about possible roles and competencies. Individuals who perform the role of career counselor are often selected from within the business and in some cases on a part time basis. The intention of the Career Counselor role is to complement the career discussion process between managers & employees and is not meant to replace it.

Tracking of Top Talent

Some organizations believe that while they are responsible for offering career development opportunities to all, they also need to bring special focus on their key talent by developing career strategies that will help develop and retain this group of employees.

The Top Talent Programme in organizations typically involves:

1. A transparent system of identifying talent
2. Assessments to further identify the strength, leadership potential and so on
3. Focused development programs
4. Identifying opportunities and career progression
5. Retention strategies : Pay, rewards and recognition, ESOPs
6. Attrition risk analysis

The top talent program is constantly reviewed by the senior management team and HR plays a major role in driving this initiative.

Educational Opportunities and competency Based Development Programme For employees. The BPO industry has create a large number of jobs for people who enter the labour market immediately after their graduation. Through exit interviews and attrition analysis, it has been found that many of these people leave for higher education. This analysis suggests that young graduates consider higher qualifications to be of great value.

Organizations have responded to this need by providing education opportunities to their employees by providing with educational institutions and also by giving the necessary time offs for this.

Organizations are also implementing learning initiatives to develop specific competencies. These programmes have high learning effectiveness as they focus on developing the behaviors associated with competency. This is in contrast to general programs which do not promote the critical behavior that the organization expects.

While most of the organizations run these programs for all people moving to a particular level of responsibility, a few organizations have chosen to make them more aspirational in nature. In the latter cases, the participants are chosen based on a combination of assessment, performance ratings and nominations by managers.

Qualifying Development Programe That Are Mandatory Promotion

Many organizations have found it necessary for their people to go through structured learning programme and qualify/ certify themselves before they progress to the next level. This is a requirement especially for those progressing to people manager responsibilities.

Work force planning Systems that Drive Career Development Keeping in Mind Business Needs
Organizations are developing robust systems of workforce planning (despite the vagaries of the market) to ensure that career development happens in the context of business needs. Planning

how many people are needed in the next year, by roles/ positions and competencies, enable the organizations to work towards getting those people through the career development process.

Organizations have established functional resource committees for all key functions. These committees lead discussions to identify the new requirements, vacancies and opportunities in their respective functions. This then gets fed into the career development system and the top talent management system. The OJP system is also integrated into the workforce planning helps the organization estimate the likely number of vacancies keeping in mind business growth, estimated attrition within the process and estimated career development through and out of the process.

These organizations believe that workforce planning is a critical success factor for the OJP to work successfully.

Our challenge as leaders is to ultimately ensure that people enjoy what they are doing and they own the dream that we may have as leader for the company. We need to assume a facilitators role by assisting the employees in their journey to achieve difficult targets.

To facilitate the process of turnaround, one also needs to put in enabling processes like

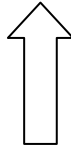
- a) Award and Recognition Systems
- b) Development of Talent and appropriate skill in employees

The Award and Recognition System should be fair, transparent and should necessarily ensure that the awards are given where the Group values have been properly adhered to. We have been stressing on the leadership core value which are as under

- Customer Sovereignty
- Passion for Superior Performance
- People Orientation
- Transparency, Speed and Flexibility
- Innovation and Entrepreneurship

Today has a new dream which is the screen saver on the computer of all the leaders in the society.

World No. 1



Achieve Quality

&

Service Leadership



It will be done

I have to do it

The above enables focusing on the criticality of achieving strategic challenges of “Quality and Service Leadership” and maintaining the spirit of “It will be done” and “ I have to do it”.

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IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING: SUCCESS ISSUES

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Abstract

ERP is the process of integrating all the business functions and processes in an organization to achieve numerous benefits. It is especially important for companies who are “intimately connected “ to their vendors and customers, and use electronic data interchange (EDI) to process sales transactions electronically. Therefore, the implementation of ERP is exceptionally beneficial to business such as manufacturing plants that mass-produce products with little changes.

Keywords : ERP, Training , Business Organization, data integrity

Introduction to ERP

Information in large organizations is often spread across numerous homegrown computer Systems, housed in different functions or organizational units. While each of these “information islands” can ably support a specific business activity, enterprise-wide performance is hampered by the lack of integrated information. Further , the maintenance of these systems can result in substantial costs.

While the Y2K bug has been fixed over time (at an estimated cost of \$600 billion worldwide), the lack of integration is a pervasive problem. Consider, for example, Boeing , which relies on hundreds of internal and external suppliers for the millions of components needed to build an airplane. The goal of putting the right parts in the right airplane in the right sequence at the right time was managed at Boeing by four hundred systems that were designed in the sixties and were all but integrated. Information inconsistencies were prevalent and the systems were not synchronized. As a result, parts often arrived late, idling partially-built airplanes on Boeing’s assembly lines. In 1997, as Boeing faced unprecedented demand for its aircraft, these problems became unbearable, and the company’s manufacturing ground Enterprise Resource Planning

(ERP) system based on commercial, off-the-shelf software. With the advent of E-Business and the need to leverage multiple sources of information within the enterprise, ERP software has emerged as a major area of interest for many businesses. Back-office enterprise software has its roots in the 1960s and 1970s, as computing power became affordable enough for companies to automate materials planning through MRP and financial processing through payroll and general ledger software. MRP, short for Material Requirements Planning, was developed in the early 1960s at IBM and had become the principal production control paradigm in the U.S. MRP consists of a set of procedures that convert forecasted demand for a manufactured product into a requirements schedule for the components, subassemblies and raw materials comprising that product.

What is ERP

ERP is a software architecture that facilitates the flow of information among the different functions within an enterprise. Similarly, ERP facilitates information sharing across organizational units and geographical locations. It enables decision-makers to have an enterprise-wide view of the information they need in a timely, reliable and consistent fashion.

ERP provides the backbone for an enterprise-wide information system. At the core of this enterprise software is a central database which draws data from and feeds data into modular applications that operate on a common computing platform, thus standardizing business processes and data definitions into a unified environment. With an ERP system, data needs to be entered only once. The system provides consistency and visibility or transparency across the entire enterprise. A primary benefit of ERP is easier access to reliable, integrated information. A related benefit is the elimination of redundant data and the rationalization of processes, which result in substantial cost savings.

The integration among business functions facilitates communication and information sharing, leading to dramatic gains in productivity and speed. Cisco Systems, for example, harnessed ERP to help it become the market leader in the global networking industry. Cisco's ERP system was the backbone that enabled its new business model Global Networked Business based on the use of electronic communications to build interactive, knowledge-based relationships with its customers, business partners, suppliers and employees. In the process, Cisco doubled in size each year and reaped hundreds of millions of dollars in both cost savings and revenue enhancements.

Autodesk, a computer-aided design software company, reported a decrease in its order fulfillment times from two weeks to 24 hours after installing an ERP system. Similar examples abound in today's business environment.

An ERP Implementation Plan The flow chart in the given figure depicts several activities that must be performed before implementing an ERP system.

Step 1: Managers must conduct a feasibility study of the current situation to assess the organization's needs by analyzing the availability of hardware, software, databases, and in house computer expertise, and make the decision to implement ERP where integration is essential. They must also set goals for improvement and establish objectives for the implementation, and calculate the break-even points and benefits to be received from this expensive IT investment.

Step 2: The second major activity involves educating and recruiting end users to be involved throughout the implementation process.

Step 3: Managers form a project team or steering committee that consists of experts from all functional areas to lead the project.

Step 4: After a decision is made to implement ERP, a team of system consultants will be hired to evaluate the appropriateness of implementing an ERP system, and to help select the best enterprise software provider and the best approach to implementing ERP. In most situations, the consultant team also recommends the modules that are best suited to the company's operations (manufacturing, financials, human resources, logistics, forecasting, etc.), system configurations, and Business-to-Business applications such as supply-chain management, customer relationship management, e-procurement, and e-marketplace.

Step 5: Adequate employee and manager training must be provided to all business, stakeholders, including managers, end users, customers, and vendors, before the system is implemented. Such training is usually customized and can be provided by either internal or outside trainers.

Step 6: The system installation process will address issues such as software configuration, hardware acquisition, and software testing.

Step 7, 8 & 9: Data and information in the databases must be converted to the format used in the new ERP system and servers and networks need to be upgraded. A post implementation review is recommended to ensure that all business objectives established during the planning phase are achieved. Needed modifications are tackled during this phase too.

Issues on ERP Implementation

Implementing an ERP causes massive change that needs to be carefully managed to reap the benefits of an ERP solution. Critical issues that must be carefully considered to ensure successful implementation include fundamental issues, organizational change process , people , and implementation cost and time and employee morale. The pertinent issues are :

1. Fundamental Issues

Implementation of an ERP system can be long, costly, and labor-intensive and can affect an organization's bottom line if done incorrectly. To ensure the success of any ERP implementation project , a project team consisting of an ERP consultant, internal auditing, and IT staff familiar with the company's business operations should be established and their role must be defined.

(a) Role of Manager

Manager must consider the fundamental issues of systems integration by analyzing the organization's vision and corporate objectives.

- Does management fully understand its current business processes, and can it make implementation decisions in a timely manner?
- Is management ready to undertake drastic business process reengineering efforts to yield dramatic outcomes?
- Is management ready to make any change in the structure, operations, and cultural environment to accommodate the options configured in the ERP system?
- Is the organization financially and economically prepared to invest heavily in an ERP implementation?

(b) Role of an Auditor

Auditors play a proactive role in helping the organization laying the foundation for an initiative's success with their knowledge of internal control practices, compliance requirements, and business processes. In particular , internal auditors can :

- Document abbreviations and their function.
- Identify documents used in the organization's daily operations.
- Compile a list of the organization's master data sets.
- List the internal controls that are applied and adopted during each business process stage.
- Create a list of currently used and recently generated management information reports.

(b) Top Management Commitment

Management needs to exploit future communication and computing technology issues in order to integrate the ERP systems with e-business applications in their organization to decide on the key related implementation and business issues. Due to enormous impact on the competitive advantage of the company, top management must consider the strategic implications of implementing an ERP solutions keeping in mind the size of the company and the modules installed. Management must ask several questions before embarking on project.

- Does the ERP system strengthen the company's competitive position? How might it erode the company's competitive position?
- How Does ERP affect the organizational structure and the culture? What is the scope of the ERP implementation
 - Only a few functional units or the entire organization?
- Are there any alternatives that meet the company's needs better than an ERP system?
- If it is a multinational corporation , the management should be concerned about whether it would be better to roll the system out globally or restrict it to certain regional units?

(2) Organizational Change Process

ERP implementation requires organizations to reengineer their key business processes reengineering of the existing processes, integration of the ERP with other business information systems, selection of right employees on the new systems.

(a) Reengineering of the existing process

Implementing an ERP system involves reengineering the existing business processes to the best business process standard which at the end must conform to the ERP model . ERP systems are built on best practices that are followed in the industry , though the cost and benefits of aligning with an ERP model and customizing could be very high. The more the customization , the greater the implementation costs.

(b) Integration of ERP with other BIS

The benefits of an ERP application are limited unless it is seamlessly integrated with other information systems.

Some of the major concerned areas would be:

- **Integration of ERP Modules**
- **Integration of E-Business Applications**

■Integration with Legacy Systems

(c) Selection of Right Employees

Companies intending to implement an ERP system must be willing to dedicate some of their best employees to the project for a successful implementation. Internal resources on the project should exhibit the ability to understand the overall needs of the company and should play an important role in guiding the project efforts in the right direction. Companies should consider comprehensive guidelines while selecting internal resources for the project . Lack of proper understanding of the project needs and the inability to provide leadership and guidance to the project by the company's internal resources is a major reason for the failure of ERP projects .

(d) Training Employees

Training and updating employees on ERP is a major challenge as it is extremely complex and demanding. It is difficult for trainers or consultants to pass on the knowledge of ERP package to the employees in a short period of time. This knowledge transfer gets hard if the employees lack computer literacy or have computer phobia. In addition to being taught ERP technology, employees have to be taught their new responsibilities.

3.Implementation cost and Time Implementation Cost : Even though the price of prewritten software is cheap compared with in-house development , the total cost of implementation could be three to five times the purchase price of the software . The implementation costs would increase as the degree of customization increases. After training the selected employees, strategies such as bonus programs, company perks , salary increases ,continual training and education , and appeals to company loyalty work to retain them. Other intangible strategies such as flexible work hours, telecommuting options, and opportunities to work with leading-edge technologies are also being used.

Implementation Time: ERP systems come in modular fashion and do not have to be implemented entirely at once . ERP packages are very general and need to be configured to a specific type of business and may follow a phase-in approach with one module implemented at a time. Some of the most commonly installed modules are sales and distribution(SD), materials management (MM), production and planning (PP), and finance and controlling(FI) modules. The length of implementation is affected by the number of modules being implemented , the scope of the implementation , the extent of customization , and the number of interfaces with other applications. The more the number of units , the longer the implementation time. Further as the

scope of implementation grows from a single business unit to multiple units spread out globally , the duration of implementation increases .

4) Employee Morale Employees working on an ERP implementation project put in long hours (as much as 20 hours per day) including seven-day weeks and even holidays. Even though the experience is valuable for their career growth, the stress of implementation coupled with regular job duties could decrease their morale rapidly.

Leadership from upper management and support and caring acts of project leaders would certainly boost the morale of the team members . Other strategies , such as taking the employee on field trips , could help reduce the stress improve the morale.

CONCLUSION

ERP solutions are revolutionizing the way companies produce goods and services . ERP systems bring lot of benefits to organizations by tightly integrating various departments of the organization.

ERP systems are very large and complex and require a careful planning and execution of their implementation. They are not mere software ; they affect how a business conducts itself. The top contributor for a successful ERP implementation Is strong commitment from upper management, as an implementation involves significant alterations to existing business practice as well as an outlay of huge capital investment.

Selecting and managing consultants pose continuous challenge due to the shortage of skilled consultants in the market. Organizations could reduce the total cost of implementation if they reduce customization by adapting to the ERP's built in best practices as much as possible .selecting the right employees to participate in the implementation process and motivating them is critical for the implementation success. Finally, it is important to train the employees to use the system to ensure the proper working of the system. A well -designed and properly integrated ERP systems allows the most updated information to be shared among various business functions, thereby resulting in tremendous cost saving and increased efficiency.

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PRIVATIZATION-A STUDY OF PRIVATE OWNERSHIP

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Investment and disinvestment are two sides of the same coin. When we deal with the investment management, it automatically encompasses disinvestment also, as what is investment for one is disinvestment for another, particularly in the secondary market. If investment is an art and science; the more so is the disinvestment process. It was in the year 1998-99, when Prime Minister Shri Atal Bihari Vajpayee made a statement in parliament about disinvestment – "Disinvestment / Privatization is the only panacea for ills of loss making public sector undertakings." And soon the response from the opposition was "You can't sell the family silver to meet your daily expenditure."

Investment refers to conversion of money or cash in to securities, debentures, bonds or any other claims on money. Disinvestment involves the conversion of money claims or securities in to money or cash. Privatization means selling the majority of share holding and giving management control to a private party but divestment is selling some minority shares of the government without transferring control. Thus, disinvestment is wider term extending from dilution of the stake of the Govt. to a level where there is no change in the control to dilution that results in the transfer of management. The transfer of ownership may occur when in an enterprise the dilution of govt. ownership is beyond 51 percent. The disinvestment implies that the Govt. will sell to public or private enterprises/ public institute's part of its holding in public sector enterprises.

Introduction

The Indian approach towards disinvestment seems to have gone totally wrong ever since the reforms process was initiated in the early 90's. The country now has lost the opportunity and its way as the pace of the entire process is very slow and lethargic in nature. While all the politicians claim to share a common platform on this issue but find the escape route by stating – "We agree in principle but differ in details", "Decide about strategic sale or public offer", "is it videshi or swedeshi", so on and so forth.

"While the case for economic reforms may take good note of the diagnosis that India has too much government interference in some fields, it ignores the fact that India also has insufficient and ineffective government activity in many other fields, including basic education, health care, social security, land reforms and the promotion of social change. This inertia, too, contributes to the persistence of widespread deprivation, economic stagnation and social inequity." - By Dr Amartya Sen & Jean Dreze.

In India for almost four decades the country was pursuing a path of development in which public sector was expected to be the engine of the growth. However, the public sector had overgrown itself and their shortcomings started manifesting in the shape of low capacity utilization and low efficiency due to over manning and low work ethics, over capitalization due to substantial time and cost over runs, inability to innovate, take quick and timely decisions, large interference in decision making process etc.

Relevance of the Study:-

Causes of Privatization:

a) Some 58 Central Government PSUs are scheduled for privatization, and each operates in a sector where there are already successful private sector firms. The causes of privatisation has brought several questions as follows-

Why should government spend its scarce money on goods and services already provided by the private sector?

Why should your tax-money be taken away from you, and invested in NALCO when similar, private companies such as Hindalco are active in the aluminum sector and pay taxes to the Government?

Why should government-owned finance companies such as SBI Caps and UTI continue to generate P/E ratios of 6 and 5 when their competitors in the private sector such as HDFC generate a ratio of 30?

Why should a government-owned gas company like GAIL generate P/E ratios of 4.4 when private sector operators such as Gujarat Gas consistently have P/E ratios of 15?

b) Our government should stop trying to compete with the private sector. Let our businessmen and businesswomen excel at providing goods and services, and let government focus its attentions on governing, regulating monopolies and increasing competition.

Very few PSE objectives not be provided better and cheaper by the private sector. Finally there are only a few cases of natural monopolies, such as the provision of piped water. There government can still create elements of competition, such as parallel competition where the track record of one regional private provider is compared to another in a neighboring region. But in cases of natural monopolies there is always a need for a strong government regulatory body.

From the study of the privatization programme and the rationale behind it, the following points are emerged from the study-

1. Private ownership leads to better use of resources and their more efficient allocation. Throughout the world, the preference for market economy received a boost after it was realised that the State could no longer meet the growing demands of the economy and the State shareholding inevitably had to come down. The 'State in business' argument thus lost out and so did the presumption that direct and comprehensive control over the economic life of citizens from the Central government can deliver results better than those of a more liberal system that directly responds according to the market driven forces.
2. Another reason for adoption of privatization policy around the globe has been the inability of the Governments to raise high taxes, pursue deficit / inflationary financing and the development of money markets and private entrepreneurship.
3. Further, technology and WTO commitments have made the world a global village and unless industries, including PSEs do not quickly restructure, they would not be able to survive. Public enterprises, because of the nature of their ownership, can restructure slowly and hence the logic of privatization gets stronger. Besides, techniques are now available to control public monopolies like Power and Telecom, where consumer interests can be better protected by regulation / competition, and investment of public money to ensure protection of consumer interests is no longer a convincing argument
4. The objectives of the disinvestment programme vary from improving efficiency of the Public Sector Enterprises to transformation of the society for making Indian economy more vibrant, healthy and adequately equipped to contest in global arena.
5. The primary objectives for privatising the PSEs are as follows:
Necessity for the Government to move away from controlling, managing and running "non-strategic enterprises"

Releasing the large amount of public resources locked up in non-strategic PSEs, for redeployment in areas that are much higher on social priority, such as, public health, family welfare, primary education and social and essential infrastructure; Stemming further outflow of these scarce public resources for sustaining the unviable non-strategic PSEs. reducing the public debt that is threatening to assume unmanageable proportions, Transferring the commercial risk, to which the tax-payer's money locked up in the public sector is exposed, to the private sector wherever the private sector is willing and able to step in – the money that is deployed in the PSEs is really the public money; and, is exposed to an entirely avoidable and needless risk, in most cases.

6. The other benefits expected to be derived from privatization are: -Disinvestment would expose the privatized companies to market discipline, thereby forcing them to become more efficient and survive or cease on their own financial and economic strength. They would be able to respond to the market forces much faster and cater to their business needs in a more professional manner. It would also facilitate in freeing the PSEs from the Government control and introduction of corporate governance in the privatized companies. Disinvestment would result in wider distribution of wealth through offering of shares of privatized companies to small investors and employees. Disinvestment would have a beneficial effect on the capital market; the increase in floating stock would give the market more depth and liquidity, give investors easier exit options, help in establishing more accurate benchmarks for valuation and pricing, and facilitate raising of funds by the privatized companies for their projects of expansion, in future. Opening up the erstwhile public sectors to appropriate private investors would increase economic activity and have an overall beneficial effect on the economy, employment and tax revenues in the medium to long term. In many areas, e.g., the telecom sector and petroleum sectors the end of public sector monopoly would bring relief to consumers by way of more choices, and cheaper and better quality of products and services as has already started happening.

Objectives of the Study:

To study the impact of privatization on financial performance of the privatized CPSU in case of strategic sale before and after disinvestments.

Null Hypothesis: There is no significant impact of financial performance between the period before disinvestment and thereafter in case of strategic sale involving transfer of management control in the hands of private entrepreneurs.

Data Sources & Methodologies

Area of Study: The study covers the offloading Govt's stake of public sector undertakings to the private entrepreneurs by way of transferring control of management through strategic sale route.

Period of Study: The study covers a period of disinvestment from the initiation of privatization programme from 1991-92 to 2005-06 .However, the financial data of specific companies have been taken based upon availability of data from F.Y. 1996-07 to F.Y. 2007-08 specifically six financial years before and six years after the disinvestment of the company.

Data Sources- The data for the purpose of research have been collected from the secondary sources as follows-

Annual Report of companies of Paradeep Phosphates Ltd from F.Y. 1996-97 to 2007-08

Media Publication of Times of India and Economic Times

Journals of Economic & Political weekly

Books: Disinvestment in India, Pradeep baijal,Privatisation in India ,Mishra R K

Privatisation of Public sector undertaking, Jesiah Selvam,Disinvestment in India, Sudhir Naib

Internet: www.divest.nic.in

Government of India Publications

Sample Design: A sample is representing the population; the following samples have been taken to test the objectives of research as follows-

Samples of financial data from Paradeep Phosphates Ltd from F.Y. 1996-97 to F.Y. 2007-08.

Methodology- (Case Study Analysis)

In case of strategic sale involving control of ownership the loss making public sector can be taken as a Case Study. A case of Paradeep Phosphates Ltd has been taken to evaluate the impact of financial performance of the disinvestment programme before and after the disinvestment.

Tools of Analysis - Accounting tools & Computer assisted statistical tools by SPSS10 have been used for analysis and interpretation of data which have been mentioned as follows-

a) **Accounting Tools:** The financial analysis of Paradeep Phosphates Ltd covers the following tools of analysis:- Ratio Analysis, ii)Trend Analysis v)Leverage Analysis.

b) **Statistical Tools:** The following statistical tools have been used by using the SPSS 10.0 version, 1) t Test,

Literature Review:

The literature pertaining to this research is reviewed under different headings which contains the related literature--analytical, theoretical and empirical--on the particular issue. The literature that has been collected focuses more on various issues in privatizing the PSUs to private sector. The issues are nothing but the processing, political, economic, socio-labour, managerial has widely been tapped, through this chapter, for a comprehensive understanding of the research problem. As this part normally seeks, the literature from different sources conducted at International level, Regional (Continental) and National level which are either published or unpublished are furnished in the following headings:

Literature related to Processing Issues

Literature related to Political and Economic Issues

Literature related to Social Labour Issues, and

Literature related to Managerial Issues.

From the review of literature, it is observed that there are a lot of studies conducted on different issues of privatization. However these studies have contracted largely on; narrow and specific issues; and finally, these studies have amply been done in the industrialized and higher income developing countries which leave the world a dearth of study on privatization in case of strategic sale particularly loss making PSU in a developing country like India. Moreover, it is from the researcher's point of view, there is no study so far conducted empirically on the financial performance of PSU marked for strategic sale in general and loss making PSU in particular. How the private ownership does changes the financial performance of a loss making privatized PSU in to a profitable one. Hence, this study is done to fill up this gap. Further, the valuation of divested PSU has been criticized from many corners which need to be evaluated in the light of laid out guideline on valuation. The procedure adopted for divesting the PSU involving more than 51 percent share to the private entrepreneurs beg attention to ascertain any remarkable deviation from standard practice set by the disinvestment commission.

Financial Analysis of Paradeep Phosphates Ltd:

The privatization programme has gained momentum right after adoption of strategic sale by Govt. of India and out of which m/s Paradeep Phosphates Ltd is one case where there is 74 per cent stake sold to m/s Juary morocco Pvt Ltd.

Financial background of PPL:

Right from its incorporation in 1981, the company had a very poor financial health, suffering losses almost continuously. These had arisen mainly because of delays in Project implementation, very low capacity utilization of plants and excess work force. It has not paid interest or principle amount to the government on loan since inception. By 1992-1993 PPL's net worth was almost wiped out and it was on the verge of being declared sick. Even after an Rs.318.78 crore financial restructuring in 1993-1994, PPL's performance continued to deteriorate with accumulated losses reaching Rs314.43 crores by 31 march 1999.

Another restructuring in 1999-2000 enabled the company to record a book profit of Rs. 23.96 crore and reduce carry forward losses to Rs. 290.47 crore. A third financial restructuring took place just before disinvestment to bring down the accumulated losses to Rs.431.50 crore, to make the net worth positive to just Rs.1.15crore as on 31 March 2001. Thus, there have been three financial restructuring till date amounting to Rs. 533.42 crore to revive the company. However, the company's performance continued to deteriorate and prior to privatization the company was incurring a monthly loss of Rs. 20 crore. The post-closure adjustment claim suggests that this loss was nearly the double the initial estimate of Rs. 12 crore. Gradually, problems got compounded resulting in its inability to procure raw materials on timely basis, which further reduced the capacity utilization of the plants. Despite all restructurings, PPL had accumulated a loss of Rs. 649.93 crore as on 28 February 2002, the day of disinvestment, with a negative net worth of Rs. 217.28 crore.

Privatization of PPL- A Case Study (from F.Y. 1996-97 to 2007-08):

The trend analysis as a tool of financial analysis is to the Paradeep Phosphates Ltd from 1996-97 to 2007-08 as follows:-

The above tool of financial analysis has been taken to analyze the company PPL as a case study mode to find out the impact of disinvestment involving transfer and control of management where six year financial data have taken before as well as after disinvestment and the following analysis and interpretation have come out from the study.

Profit and Loss Analysis:

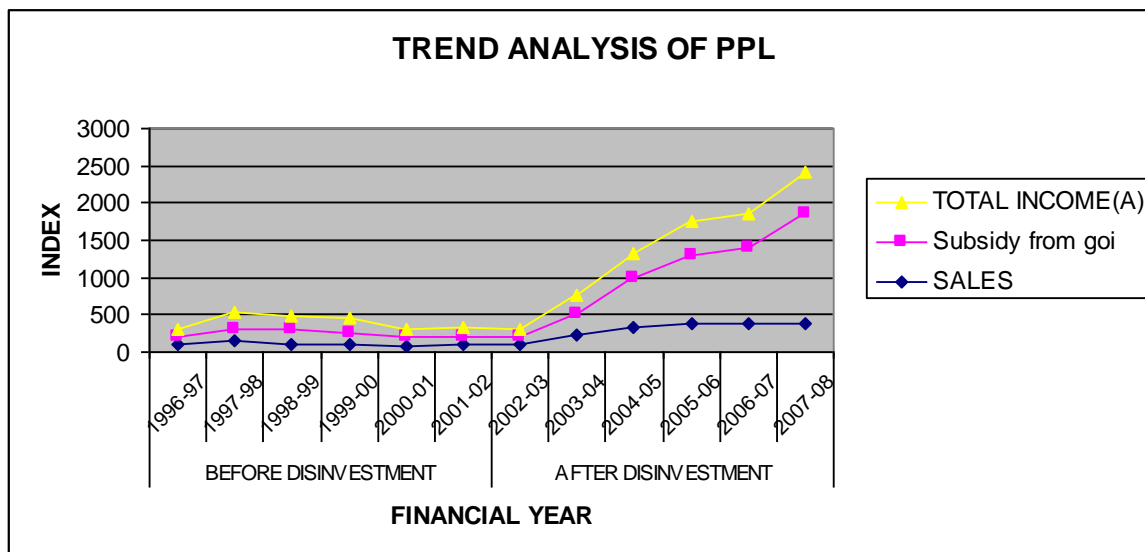
It is made keeping the base year as 1996-97 before disinvestment and 2002-03 after disinvestment. The two indexes pre and post are compared with the different parameters as follows-

Table No-1

TREND ANALYSIS												
PROFIT & LOSS A/C (Rs 000)	BEFORE DISINVESTMENT						AFTER DISINVESTMENT					
FINANCIAL YEAR	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
SALES	100	146	113	100	83	100	100	231	327	376	375	378
Subsidy from goi	100	170	186	164	118	116	100	283	664	930	1033	1490
TOTAL INCOME	100	215	175	187	111	113	100	242	319	439	445	545
Purchases of traded goods	100	231	175	174	111	112	100	210	748	1607	1202	854
Manufacturing and other expenses	100	165	154	144	159	229	100	233	291	383	374	431
TOTAL EXP	100	210	165	163	119	136	100	231	301	411	394	440
PBIT	-100	-135	5	238	-253	-525	-100	23	122	258	817	2045
PBDIT	-100	-200	199	869	-533	-1215	-100	385	648	998	2565	5796
PBT	-100	-174	-96	40	-247	-417	-100	-97	-38	32	285	845
PAT	-100	-298	-164	68	-398	-732	-100	-118	-39	31	289	858

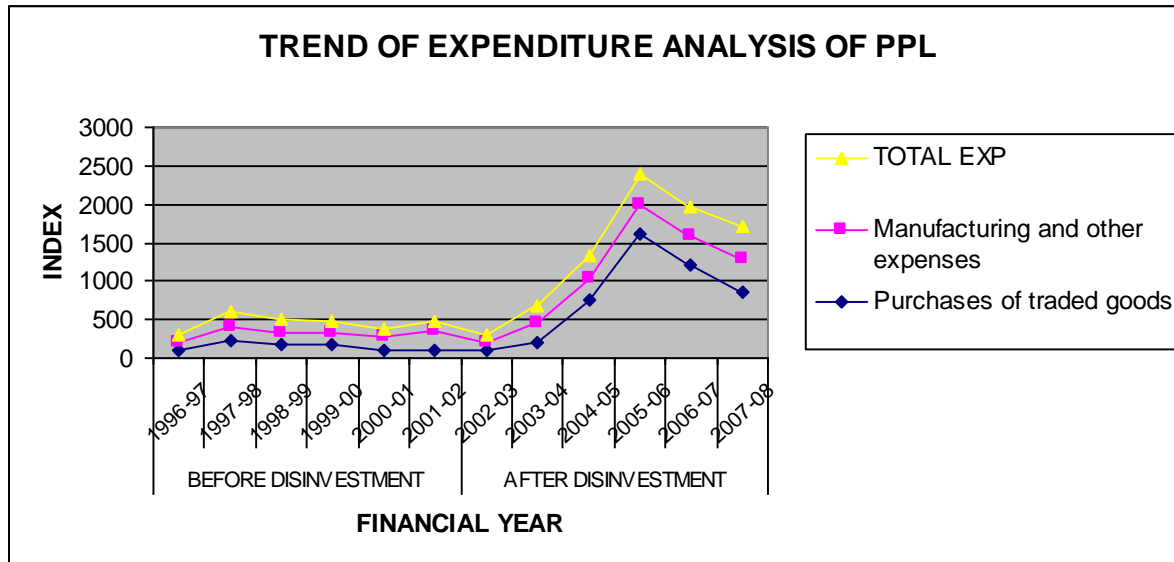
Source- Profit & loss A/C of Paradeep Posphates Ltd

FIGURE NO-1



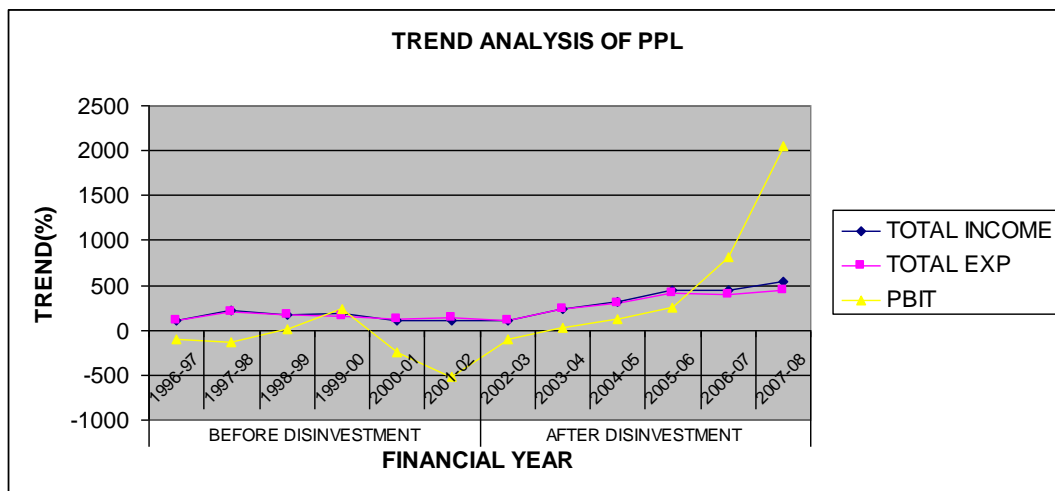
From the study of graph as above the total income, subsidy from GOI and sales line show a decreasing trend before disinvestment. These show an increasing trend after disinvestment due to more subsidy received from GOI and more sale volumes.

FIGURE NO-2



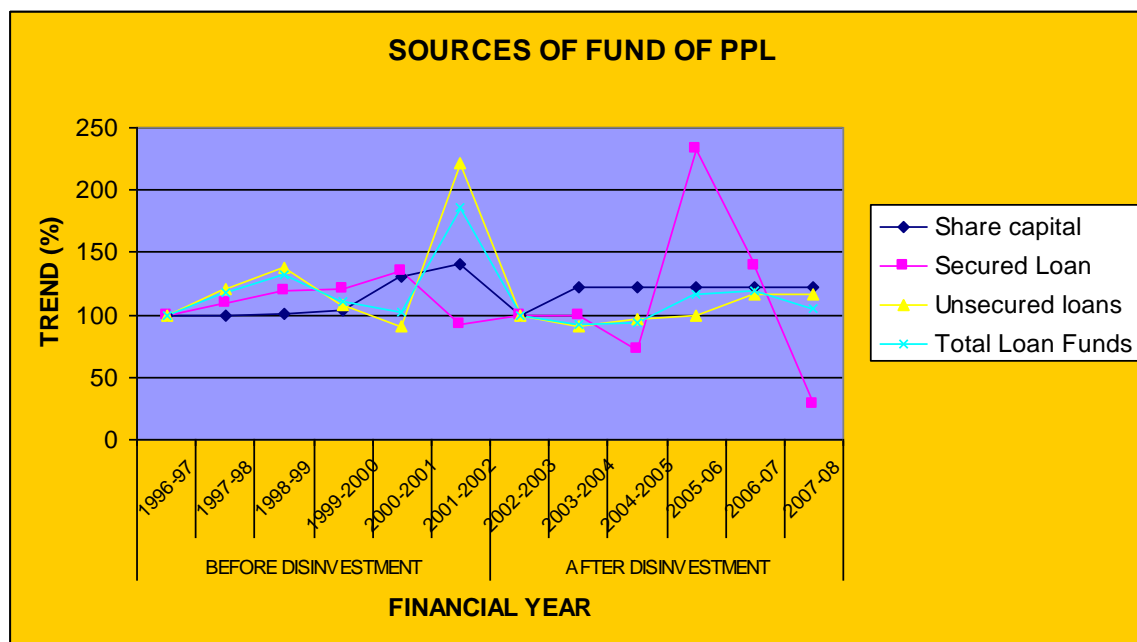
The total expenditures, manufacturing and other expenses and purchases of traded goods line show decreasing trend before disinvestment where as these show an increasing trend till 2005-06 and thereafter show decreasing trend compared to base year index.

FIGURE NO-3



The total income and total expenditures line show decreasing trend where as the PBIT (profit before interest & tax) line is showing loss before disinvestment where as the PBIT line shows an increasing trend after disinvestment indicating profit to the organization.

FIGURE NO-4



The share capital line shows increasing trend from 2001-02 to 2002-03 thereafter declines which indicates fresh induction of equity capital to the business. The secured loan line shows an upward trend till 2000-01 and thereafter declines up to 2004-05 .Then it shows an upward trend up to 2006-07 and thereafter declines drastically which indicates paying of off secured loan after disinvestment. The unsecured loan line shows upward trend up to 2001-02 and then it becomes

upward till 2008 .This indicates more unsecured loan was inducted in the business. Thus, the debt equity combination has been reshuffled to maximize the return to the shareholders.

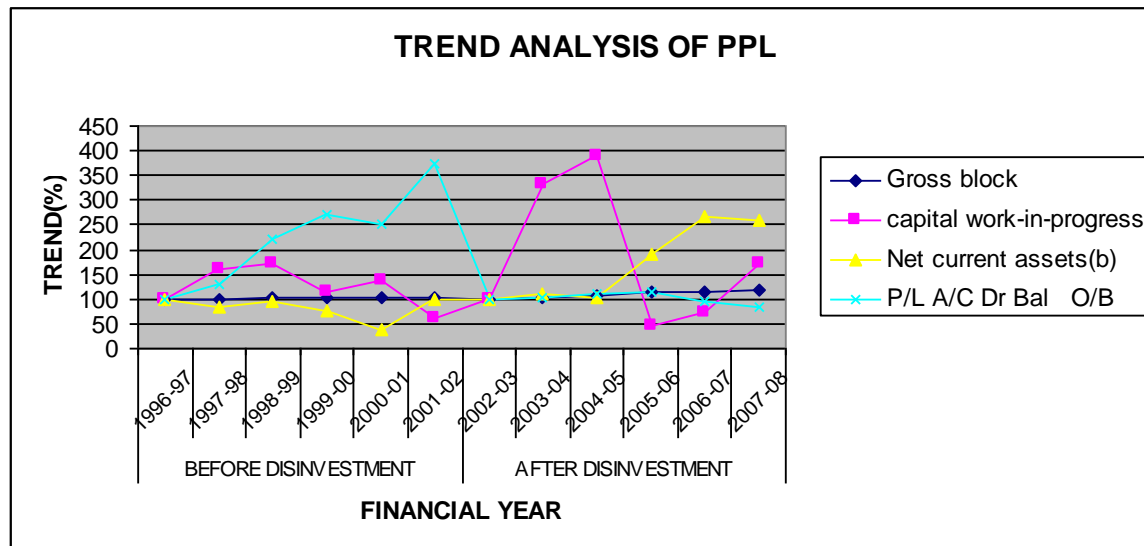
3.4 Balance Sheet Analysis:

TABLE NO-2

BALANCE SHEET	BEFORE DISINVESTMENT						AFTER DISINVESTMENT					
	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Share capital	100	100	102	103	130	141	100	123	123	123	123	123
Secured loans	100	110	120	120	135	92	100	99	72	233	140	29
Unsecured loans	100	121	137	108	91	221	100	91	96	100	117	116
Loan Funds	100	118	133	111	103	187	100	92	93	117	120	105
Gross block	100	101	101	103	103	105	100	101	106	115	115	118
Capital work-in-progress	100	161	173	115	137	62	100	331	387	46	71	171
Inventories	100	104	121	138	109	84	100	126	87	105	91	68
Sundry debtors	100	130	124	120	99	138	100	58	169	271	288	238
Cash in bank balances	100	233	127	161	348	279	100	68	80	88	258	1303
Less: Current liabilities & Provisions	100	127	133	154	137	107	100	89	129	160	126	189
Net current Assets	100	83	95	75	38	99	100	110	102	189	267	257
P/L A/C Dr Bal C/B	100	109	118	107	116	165	100	104	105	119	121	112

Source- Balance sheet of Paradeep Phosphates Ltd.

FIGURE NO-5



The gross block line shows a straight line till the year of disinvestment and slopes little upward after disinvestment. This indicates that there is no addition of fixed assets to the gross block. The capital work-in-progress line shows declining trend before disinvestment and thereafter from 1002-03 shows upward indicating more investment in capital assets under construction. This line shows a declining trend after disinvestment immediately and further shows upward trend from 2005-06 onwards. Thus there is more investment in income generating capital assets after disinvestment to increase the capacity. The net current assets (working capital) shows a downward trend before disinvestment and from 2004-05 onwards shows an increasing trend. This indicates the company has invested more in working capital after disinvestment to enhance productivity. The debit balance of profit and loss account line shows an upward trend which indicates that the company has incurred heavy loss before disinvestment. But the line shows an downward trend indicating decrease of loss after disinvestment and from 2005-06 onwards, the line shows further downward trend indicating decrease of loss.

STATISTICAL ANALYSIS

The financial analysis of Paradeep Phosphates Ltd has shown that there is improvement in financial performance between the before and after the disinvestment by using the different tools of financial analysis.

However, in order to verify statistically whether there is really a significant improvement in financial performance of the loss making privatised PSU PPL, T test has been applied by comparing the difference between the mean before and after the disinvestment.

Further, strategic sale was adopted in 16 companies as a method to divest the PSUs with more than 51% transfer of share to the private entrepreneurs with transfer of management control. In order to eliminate bias of taking one loss making PSU PPL for studying the significance of mean difference between the pre and post divestment, 7 different companies were also taken for the study.

Application of T test to test the hypothesis

The data for the T test has been taken from the audited financial statement of PPL six year prior to the year of disinvestment (FY. 1996-97 to FY. 2001-2002) and six years after the year of disinvestment(FY. 2002-03 to FY. 2007-08).

Further, in order to make the data more meaningful, ratio analysis data has been taken keeping in view the short term and long term financial position of the company during the above period.

The following ratios have been used for the analysis:

Current Ratio, ii) Quick Ratio, iii) PBDIT/Total Income, iv) PBIT/Total Income, v) PBT/Total Income, vi) PAT/Total Income, vii) Debt/Equity Ratio.

Computation of t-Test :

The mean of ratios mentioned as above for individual company from 1996-97 to 2001-2002 has been calculated, as first sample (pre-divestment). The mean of ratios of the same company from 2002-03 to 2007-08 has been calculated, as our second sample(post-divestment) and the mean of the above companies before and after disinvestment has been given as input to SPSS for analysis by paired t-test and the following results in terms of level of significance have come out by SPSS

TABLE NO-3

Level of Significance of PPL and Group of Companies

Sl No	Ratios	PPL
1	PBDIT/TOTAL INCOME	0.130
2	PBIT/TOTAL INCOME	0.125
3	PAT/TOTAL INCOME	0.116
4	CURRENT RATIO	0.016*
5	QUICK RATIO	0.043*
6	DEBT/EQUITY RATIO	0.015*

* At 5% level of significance

Analysis & Interpretation:

The result of t test shows that the quick ratio, current ratio and the debt equity ratio are showing significant difference (between the two means, of pre and post-divestment).i.e., at a level of 5 percent, which indicates that the short term and long term financial position have been significantly improved after the disinvestment by proper debt equity mix of finances. Further, the result from the ratios like PBDIT/Total income, PBIT/Total income and PAT/total income are showing the level of significance beyond the 5 percent. Thus, there is no significant improvement in the operational efficiency of the company after disinvestment.

Conclusion & way forward:

The strategic sale of PSU involving transfer of ownership and control has resulted in to gain in financial performance of Paradeep Phosphates Ltd .But the gain in financial performance cannot be solely attributed to the ownership and control. The deregulation of economy plays an important role which also contributes to the profitability of the privatized companies. Further, the statistical result of seven companies involving strategic sale shows that there is no significant improvement in the financial performance of the divested companies after privatisation as compared to the before.

Further, the sick and loss making privatized companies will take some time to recover from sickness and only after that those will start earning profit.

Further, from the experience of strategic sale the GOI has started issuing initial public offering of PSU stock to the public which has taken momentum to the Indian public. The sale of initial public offer (IPO) like NTPC, NHPC has given warm response. The follow on public offer (FPO) of NTPC will be issued very soon. In this backdrop, the GOI has received lot of cash than that from strategic sale and the divestment will be to the public of India which cannot be termed as privatization. The tax payers will continue to be accountable for the shares they hold. Thus, the price earnings ratios of the companies whose shares are already issued have already shown high growth. This will lead a further scope for research in the field of public stock mobilization in the capital market.

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CAN FINANCIAL CRISIS AFFECT CSR?

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Abstract

There is nothing trivial about this financial crisis. According to the recent Financial Stability Report, governments worldwide have already pledged more than \$10 trillion in loans, guarantees, capital injections, and other assistance in their coordinated effort to prop up the global financial system. And the ILO estimates the crisis will cost 20 million jobs by next year.

Introduction to current financial crisis

This is not the first financial crisis the world has seen over the past century. The worst, of course, resulted in the Great Depression in the 1930s. But there have been numerous others, all of which carried painful economic and human costs. For example, the crises in Argentina (1981-1990), South Korea (1997-1999) and Thailand (1997-2000) all cost more than 30% of those countries' GDPs.

But even by historical standards, the current financial crisis is BIG. In what's been dubbed .The ILO estimates that the crisis will bring the total unemployed to more than 210 million for the first time in history.

The key difference is that, unlike the Asian and Latin American crises in the 1980s, this crisis is truly global. Some countries, like Iceland and Pakistan, are threatened by bankruptcy. Others, like Japan, have been hit by huge volatility in the markets. And even the cash-rich, high-flyers like China are seeing their growth suffering as a result. But what does any of this have to do with corporate social responsibility (CSR)?

The links to CSR

The following can be some of reasons which can link CSR with financial crisis

Irresponsible banking

First and most obvious reason, we can say the financial crisis is a direct result of irresponsible banking. According to the Mortgage Bankers Association, the number of sub-prime loans offered to risky borrowers increased more than 15 times since 1998. Essentially, the banks got greedy and compromised good banking practices of credit risk assessment. Due to these banking practices S&P, and moodies had decreased the financial rating of banks all over Europe.

Irresponsible financial markets

Another reason of the crisis is consequence of irresponsible financial markets. Derivatives market has grown to around \$600 trillion dollars, almost 10 times the value of global GDP. This speculative trading (which some call the "casino economy") is meant to hedge risk, but it also increases the volatility and systemic risk of financial markets.

We would do well to recall economist John Maynard Keynes' warning: "Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done." The stock market of the entire globe is not performing well in the entire globe.

Irresponsible corporations

Another reason of the crisis is the inevitable consequence of irresponsible corporations. This is linked to the short-termism of shareholder value driven public companies i.e , every company and investor is interested only in short term profits no body is bothered about wealth maximization. At the extreme, authors like Joel Bakan suggest that corporations have "a legally defined mandate to relentlessly pursue—without exception—its own self-interest regardless of the often harmful consequences it might cause to others." This behaviour in humans, he notes, would be characterized as pathological.

Irresponsible executives

The financial crisis has been further inflamed, some claim, by irresponsible executives, as evidenced by their outrageous pay packages. In 2007, the CEO of a Standard & Poor's 500 company received, on average, \$14.2 million in total compensation, according to The Corporate Library.

"Many critics of investment banks," reports The Guardian, "have questioned why firms continue to siphon off billions of dollars of bank earnings into bonus pools rather than using the funds to shore up the capital position of the crisis-stricken institutions."

Irresponsible capitalism

Some would even go so far as to say that the current financial crisis represents a systemic failure of shareholder-driven, free market capitalism.

It's absolutely clear that financial markets need discipline: macroeconomic discipline, monetary discipline, market discipline." British Prime Minister and French President agree, stating that the turmoil has shown the world's post-Second World War financial architecture is not fit for the task of controlling today's global financial system.

The impacts on CSR

Irrespective of its causes, it is likely that the financial crisis will have a substantial impact on CSR. The question is, how will this impact play out? Who will win and who will lose? According to a poll run on the CSR International blog during October, 44% of CSR professionals believe that CSR will increase as a result of the crisis. A further 26% believe it will change, while 22% think it will weaken. This is a slightly surprising result and perhaps masks a more complex answer. In my opinion, the impact on CSR will vary depending on the type of CSR being practiced.

Philanthropic CSR will be worst hit

I have little doubt that those who have adopted an immature version of CSR, in which CSR is primarily about philanthropy (sponsorship, donations, charity and employee volunteering), will suffer substantial cut backs during the coming recession. Irrespective of the fact that those most in need of charity will be worst hit by the crisis, companies around the world will be forced into cost-cutting and philanthropy budgets will be among the first to be trimmed.

Strategic CSR will be less affected

It is likely that concept of strategic CSR will pay dividends for its followers in the aftermath of the financial crisis. It simply means" the more closely tied a social issue is to a company's business, the greater the opportunity to leverage the firm's resources—and benefit society." Hence, companies that have aligned their philanthropic and broader CSR efforts with their core business are more likely to protect these initiatives, even during the recession.

For example, the commitment Coca-Cola has made to become a water neutral company is so closely tied to its core business (which is, after all, mostly about selling huge volumes of sugar water), that they cannot afford to abandon this as a superfluous CSR programme. They know that if they are not perceived to be responsibly managing the scarce water resources of the communities in which they operate, their business will ultimately fail (as they have already found to their detriment in India).

Embedded CSR will be largely unaffected

CSR can only be resilient if it is part of the DNA of an organisation. In other words, CSR will only survive the vagaries of fickle markets, fluctuating profits, financial crises and leadership whims if it is totally embedded in the corporate culture, strategy and governance systems. The impending recession will be the ultimate DNA-test for companies. A year from now, we will have a much better idea of who has driven CSR deep into the heart of their business and who has simply been wearing it as a mask.

CSR 2.0 will continue to strengthen

For those companies that are alive to the opportunities of the CSR 2.0 revolution, even the recession will present large opportunities for business growth and financial profits. This is because CSR 2.0 is all about the creation of scalable solutions to the world's most urgent and intractable problems, such as water stress and climate change. Unlike the defensive, incremental, risk-based CSR of the past (CSR 1.0), CSR 2.0 rides the wave of emerging responsible and sustainable markets.

For example, the demand for renewable energy and low-carbon technologies now far exceeds the supply. And given the escalating costs of climate change, the high oil price and ambitious political targets (of up to an 80% reduction in greenhouse gas emissions by 2050), companies that have strategically positioned themselves as clean technology solutions providers will continue to benefit from this \$284 billion market, which is expected to grow to over \$1.3 trillion by 2017.

Conclusion

Hence, the answer to the question, “What is the relationship between the financial crisis and CSR?” is that it depends. It depends on your beliefs about how deep the irresponsibility behind the economic meltdown runs – is it banks simply overextending themselves, or a far more systemic failure in the corporate, financial and capitalist models?

Similarly, the answer to “How will CSR be affected by the financial crisis?” depends on how deep CSR runs within the organisation – is it superficial philanthropic CSR, something more strategic or embedded, or even the more revolutionary CSR 2.0 version? Either way, the recession ahead will not only be an acid test for companies' CSR commitment, but for CSR itself. It may very well be that the time has come for CSR to adapt or die.

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A STUDY ON FOSSIL FUEL CONSUMPTION PATTERN IN BRIC NATIONS

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Abstract:-

Security of energy supply is a top priority of policymakers around the globe, especially in countries of the economically emerging world. This paper's aim is to investigate the link between the production and consumption pattern of different fossil fuels in four developing countries and the way policies to secure energy supply are established. The paper looks at the "BRIC" countries (Brazil, Russia, India, and China). These countries are experiencing rapid economic growth and energy requirements but differ in their modes of governance and the resources of energy in particular. The four BRIC countries provide a window into the particular Relationship between governance and energy security policy in developing countries. The paper throws light on the fossil fuel reserves, their production and consumption in these countries and a comparison of these factors with that of most developed countries in the world which are called G6.

Introduction:-

The last decades the world has experienced significant transformations in geopolitical and economic terms, and in the location, organization and distribution of production. For several reasons, large developing countries/emerging economies such as Brazil, Russian Federation (and former USSR), India, China have acquired a most important role in the world economy as producers of goods and services, receivers of capital, or potential consumer markets given their common characteristics of having a big part of their large population still not integrated in the market economy. Although BRIC countries followed different trajectories in their integration into the globalizing learning economy all of them have acquired a more important role in the

world system The five countries went through major institutional transitions and changes in their economic structure in the recent history. Around the middle of the twentieth century China witnessed its communist revolution, India became independent, apartheid became institutionalized in South Africa, Brazil went into a period of 21 years of military regime, while the former Soviet Union came out of the second world war as a major rival to the United States. Later on, in all these countries inward orientated and more or less centrally planned development strategies from the 1950s to the 1970s were replaced by gradual integration in the global economy in the 1980s and 1990s.

Financial globalization and the diffusion of the new technological paradigm based on the Information and Communication Technologies (ICTs) led to significant transformation in the world economy. The world economy became even more integrated and the technological revolution spread rapidly but unevenly among different countries and world regions. One consequence of these changes is that competitiveness increasingly has become related to innovation, learning capacity and knowledge. Different countries have found different ways to adapt to this new paradigm. The historical record of successful developed countries is not easily replicable in LDC in the current era. The barriers to access to economically useful knowledge have become more difficult to overcome. As verified in the case of the five countries referred to here there are fundamental issues (like those related to social and ecological development), which have to be addressed in order to transform into sustainable learning and knowledge societies.

Review of Literature

There is no doubt about the increasing economic and geopolitical importance of these five Less Developed Countries (LDC) on the international scene. At a first glance one can refer to their big dimensions - territorial extension and/or the size of the population that represents an enormous potential consumer market (see appendix A for the empirical evidence). Although South Africa does not share all these characteristics, it plays an important strategic, economic and political role in the African continent. In the same way, the other countries exert great influence in their respective home region: Brazil in South America; China and India in East and South Asia; and the Russian Federation in east Europe and Asia.

A Goldman Sachs report, published in October of 2003, focused the attention on the current and future global importance of Brazil, Russian Federation, India and China. It also pointed out the importance of South Africa as the biggest economy on the African continent. The report suggested that by 2050 the sum of the GDP of the four countries may surpass the sum of the G6 countries' GDP. Over the last few years the importance of these countries became even more evident as China took a lead role in world economic growth. Already at the end of the 1990s China ranked first in the world in the production of crude steel, coal, cement, fertilizer and TV-sets and second in the production of electricity, chemical fiber and cotton.

It is also important to note have the growth patterns of the different BRICS-countries are becoming increasingly interdependent. China is responsible both for the reduction of prices on labour-intensive manufactured goods that create problems for clothing producers elsewhere and for the increased commodity demand and for the rise of relative prices of many commodities that stimulate the demand for raw materials and energy in other parts of the developing world. India's growth, as well, has had a major influence on the price increase for specific commodities, especially petroleum. For instance, the relative strength achieved in the last 2 years of the Brazilian trade balance is almost totally explained by the effects of the Chinese demand for such commodities.

STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS OF BRIC NATIONS

The big scale of the BRICS economies may be seen both as strength and weakness. There are important scale economies in the production and use of new knowledge and this is especially true for some science-based sectors where small countries have a handicap. In order to reap these advantages it is necessary build a strong knowledge infrastructure and to invest in scientific training.

On the other hand the big size is in all the five BRICs-countries is combined with extremely uneven regional development The income gap between the most and the least developed regions in BRICs countries are enormous and still growing. To develop modes of innovation that tackle this issue and to strengthen the mechanisms of regional redistribution with focus on investment in human resources is a common challenge for the BRICs countries. It is also necessary to

promote innovation in traditional parts of the economy and to stimulate learning based innovation in low technology sectors.

Another common characteristic is the affluence of unskilled labour and the corresponding shortage of capital and knowledge. In all the BRICs countries the total of open and hidden unemployment among unskilled workers is extremely high while there may be shortages of skilled labor. Education and training is crucial in enhancing the skills of workers and the efforts made in these respects are crucial for the future development. The scale and type of foreign direct investment is very different in the five countries. China has become the most attractive object of such investment while the inflow to the other four countries is much more limited. The case of China, and to some degree of India, illustrates the importance of the Diaspora as source of both capital and skilled labour.

The recent development in China illustrates that it is difficult to combine rapid economic growth with balanced exploitation of natural resources and with environmental balance. In the long run this might set limits to growth as the environmental costs become increasingly high. Therefore, to focus innovative activities on solving environmental problems and shortages of energy and other natural resources is a common challenge for these countries. Solutions that make use of the rich pool of unskilled labor might be of special importance.

The big size may give certain strength in negotiations shaping global rules of the game but it also implies that what is going on in a BRICS-country is under constant scrutiny from the rich countries and international organizations. Joining forces in such negotiations might help BRIC countries to create more balanced solutions world-wide. In this context BRIC-countries could act as representatives of their respective region and take into account also the problems of smaller developing economies.

Different development paths in BRICS-countries

While many of the problems and challenges are common it is important to stress that innovation systems in BRICS-countries have followed different paths towards integration in the globalizing learning economy and that they have responded differently on the opening up of their economies. Some countries such as Brazil and Russia have liberalized and deregulated their economy

rapidly. As a result indigenous competences have been destroyed and they are currently going through difficulties with establishing sustained economic growth.

Others, such as China and India, have retained control of important parts of their economic policies while gradually integrating into the world economy and have been more successful in retaining and building competences as the economy has been made more open to foreign trade. Differences in the policy regimes are important when it comes to explain differences in economic and innovation performance. But it is also important to understand the structural and institutional characteristics of innovation systems that result in different performance in terms of creation and destruction when they are exposed to similar forms of transformation pressure.

Energy Economic State of Supply Security

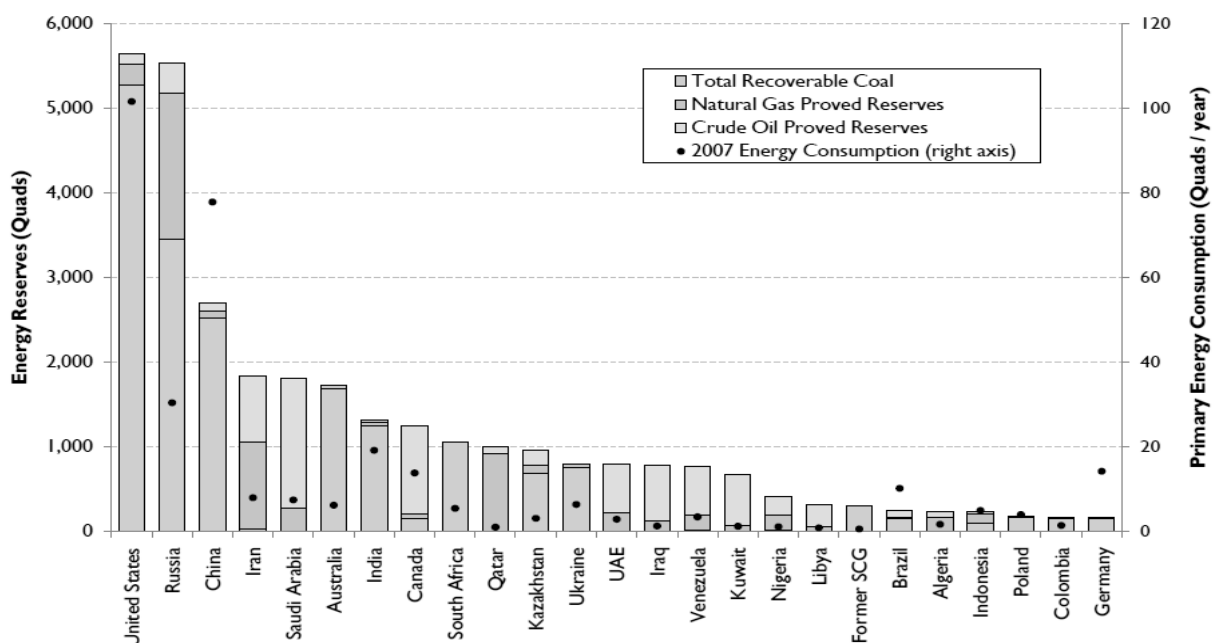
Primary energy supply security is what is commonly referred to as the ability of the domestic supply side to meet current and short to medium-run expected energy demand. In case the domestic energy production does not equal the required amount of energy demanded by domestic consumers such as the industry and private households, international trade balances the difference. In the reverse case, in countries where energy supply is greater than energy demand, energy resources can be exported to foreign customers or left in reserves for future consumption. Importing energy resources increases the risk of domestic energy supply security because the availability of international trade partners inherently uncertainty. To illustrate this point, the power politics played on the back of oil price shocks by the Organization of the Petroleum Exporting Countries (OPEC) can negatively impact energy-intensive industries.

Electricity delivery and energy reliability is another piece of the energy security puzzle. In order to guarantee the delivery of primary energy such as oil and gas to power stations, pipelines need to be built and maintained. Additionally, electricity requires investment in network infrastructure since electric grids transmit power from power plants to end-users. Rural development relies on investment in energy and electricity infrastructure. Private operators, quasi-private operators and state-owned operators secure the transmission and distribution of energy and power to both urban and rural areas. However, with all physical resource infrastructure systems, it is pivotal to avoid bottle-necks, leakage in transit, or drops in quality (e.g. voltage) in order to maintain network security.

Domestically Available Resources

In this section, we examine the current energy mixes of the BRIC countries, the role of international energy trade, and the resource bases of both fossil fuels and renewable energy. The BRIC countries face a wide range of challenges with respect to managing and securing their access to energy resources. And in the evolution of their energy systems, each BRIC country's effort to secure its supply of energy has been greatly shaped by its natural resource endowments. By primary energy consumption, the BRIC countries are among the largest nine in the world and are the four largest among non-OECD members. In 2009, the BRIC countries were among the 6 largest consumers of oil, the 23 largest consumers of coal, and the 20 largest consumers of natural gas. In terms of total fossil energy reserves, on an energy content basis, the BRIC countries are among the top 20.

The BRIC countries' coal reserves are among the largest 11, their oil reserves are among the 21 largest, and their natural gas reserves are among the 35 largest. Figure 1 shows the reserves by type of fossil resource for the countries with the largest fossil resources in the world. Recent annual consumption is also shown for comparison.



Source: U.S. Energy Information Administration (2010c).

Fig.1 The reserves by type of fossil resource for the countries with the largest fossil resources in the world

China

Energy from coal dominates China's energy consumption mix. In 2008, 70% of Chinese energy consumption came from coal while oil supplied an additional 20%. Hydroelectric generation supplied 6% of Chinese energy consumption and natural gas, nuclear and renewable contributed less than 3% each to total energy consumption.

Chinese coal reserves were the third-largest in the world at 126 billion short tons in 2005, behind the United States (264 billion short tons) and Russia (173 billion short tons). At 3.2 billion tons, China produced 44% of the world's coal in 2009, making it the world's largest producer of coal, 3 times larger than the second-largest producer, the United States. At its 2009 coal production rate, China's coal reserves will deplete in 39 years. Of the 10 largest coal producers in 2009, only Indonesia would deplete its reserves faster than China if production rates stayed constant. In all likelihood substantial new resources will be added to Chinese coal reserves, while coal imports from Indonesia, Australia, Vietnam, Mongolia and Russia continue to grow. Since 2002, China has significantly increased its coal imports: from 2002 to 2008, Chinese coal imports grew over 400%. Nevertheless, coal imports still made up only 3.8% of total coal consumption in China in 2009.

Since 1993, China has been a net importer of oil as oil consumption has grown faster than domestic oil production. China's net oil import rate was 3.5 million barrels/day in 2008 – 50% of its total consumption – making it the world's 3rd largest net importer of oil behind the United States (9.8 million barrels/day) and Japan (4.0 million barrels/day). The largest oil exporters to China are Saudi Arabia (725 thousand barrels/day), Angola (596 thousand barrels/day), and Iran (425 thousand barrels/day). The depletion of older onshore wells in China is leading to growing attention to offshore oil resources, some of which are in disputed ocean territories, as well as onshore resources deeper in western China. Natural gas does not currently play a significant role in the Chinese economy, but the lower emission profile of natural gas power plants relative to coal-fired plants, may lead to an expansion of natural gas in China in the near future. Gas pipelines from Eastern Siberia into China are likely to move forward as China seeks to simultaneously increase development of domestic, including offshore, natural gas resources.

China doubled its wind capacity in 2009 to nearly 26 GW, giving it the second largest installed capacity in the world behind the United States. While wind currently only supplies less than half of one percent of China's electricity, the wind on-shore resources available in China are enough

to generate 24.7 PWh, greater than seven times current Chinese electricity consumption. Relative to prevailing contract prices, the on-shore wind resource in China could still provide more than twice current electricity consumption. China also has a substantial offshore wind resource base, particularly in South China in the Strait of Taiwan. China's best solar resources are concentrated in the west, near China's borders with India and Nepal.

India

Like China, India uses coal to provide a majority of its energy. 53% of Indian energy demand was met with coal in 2006 while oil provided an additional 31%. Natural gas, hydroelectric and a small share of nuclear made up the balance. In 2007, 8.7% (net of exports) of Indian coal consumption was imported. India's domestic oil production has been nearly constant since 1990 while oil consumption has grown nearly three-fold in the same time period. By 2008, India was the 5th largest consumer of oil at 2.8 million barrels/day and the 4th largest net importer of oil with over 2.5 million barrels/day in net imports. The largest oil importers to India are Saudi Arabia (644 thousand barrels/day), Iran (476 thousand barrels/day), Nigeria (308 thousand barrels/day), and Iraq (280 thousand barrels/day). As in China, natural gas demand is expected to grow in India as the detrimental effects of pollution from coal power plants increase and as major domestic gas plays go into production. When it is complete, the 3,500 MW power plant at Dadri, Uttar-Pradesh will be the largest natural gas-fired plant in the world. Since 2004, India has been a net importer of natural gas, utilizing significant quantities of liquefied natural gas (254 Bcf in 2006) while also seeking to expand its pipeline connections to other countries, such as Iran.

Brazil

Unlike China and India, Brazil does not rely heavily on coal for electricity generation. Instead, 85% of Brazil's electricity comes from hydroelectric dams. Natural gas, coal, nuclear, and renewable make up the balance. For liquid fuels, Brazil consumed 2.5 million barrels/day of petroleum in 2008; however, all gasoline sold in Brazil is blended with ethanol. In 2008, Brazil produced 454 thousand boe/day of ethanol and 20 thousand boe/day of biodiesel. Currently, Brazil consumes more oil than it produces. However, because of significant bio fuel production, combined with large offshore petroleum resource discoveries in the past three years, Brazilian oil production is expected to continue growing faster than its oil consumption. Brazil has the smallest proved reserves of fossil energy among the BRIC countries. However, the pre-salt fields off near the coast of Rio de Janeiro, discovered in 2007, could dramatically shift Brazil's oil

reserve status. While the Brazilian pre-salt fields are still being explored, by some estimates, the size of this resource could put Brazilian reserves on par with the countries with the five largest oil reserves in the World.

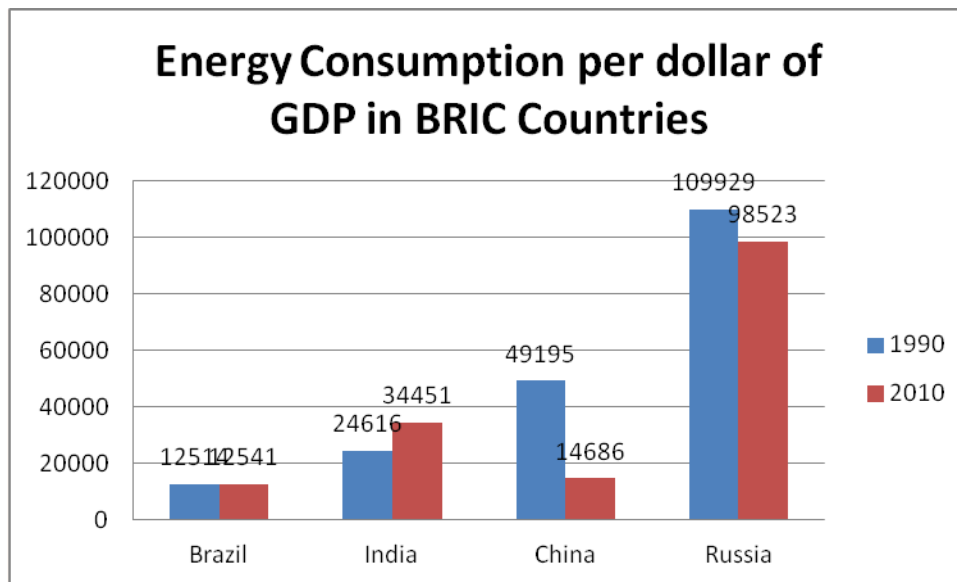
Russia

Russia has the largest fossil energy reserves of the BRIC countries on an energy content basis and the second largest fossil energy reserves in the world behind the United States. Russia's economy is strongly dependent on energy exports. Over one-fifth of the country's GDP is derived from its oil and gas industry. At 183 billion cubic meters, Russia is the largest natural gas exporter in the world, 85% larger than the world's second largest gas exporter, Norway. 96% of Russian gas exports are transported via pipeline to Europe. Almost all of the remaining 4% of Russian gas exports are exported as liquefied natural gas (LNG) to Asia (BP Stat Review).

Russia's natural gas reserves are the world's largest: nearly 70% larger than Iran's, the second largest. 27% of all proven gas reserves in the world and 53% of all non- OPEC gas reserves are in Russia. At 2009 production rates, assuming no reserve increases, Russian gas reserves would deplete in 84 years, longer than the global average of 63 years and the North American average of just 11 years. Domestically, natural gas provided 55% of Russia's energy consumption in 2005. Russia's coal reserves are the world's second largest, yet only 16% of Russia's domestic energy consumption was derived from coal in 2005. Russia's oil reserves are the world's eighth largest.

Energy efficiency in BRIC countries

BRIC countries, now long being touted as the most promising of the emerging economies, obviously have many challenges before turning these hopes into reality. The priorities for overcoming the various hurdles may vary across these economies. But one of the most formidable challenges, that has to be tackled, is the improvement in energy efficiency.



Source: Financial Express, June 4 2011

The BRIC countries' record on energy efficiency shows that there is a large gap that has to be bridged if these countries have to improve competencies and catch up with the developed countries. But what is more striking is the considerable disparity in the energy intensity among the different BRIC countries.

Figures shows that Brazil, which consumed 12,561 Btu of energy for every dollar of GDP output at market exchange rates, was the most efficient energy user. In fact the energy intensity levels obtained is only marginally higher than the global energy intensity of 12,385 Btu for every unit of dollar GDP. Brazil's record on the energy front, however, is still lagging on some counts. Even some of the other South American countries like Argentina have a better record in energy consumption. But it is still credible that the energy intensity in Brazil is almost a third lower than that of Venezuela, the largest source of oil in South America.

The only disconcerting note in Brazil's record of energy use is that the annual average of 0.6% increase in energy intensity since the nineties has been almost six times that of the Latin and Central American region as a whole. But it can also be argued that Brazil has been fairly successful in reducing energy intensity of output in the current decade.

Second on the list of the most energy efficient countries among the BRIC nations is India. The 24,616 Btu of energy used to produce each dollar unit of GDP in India was more than a third

higher than in the Asia Pacific region as a whole. The only consolation is that neighboring Pakistan has an equally unimpressive record, though it is still a few units lower. The potential for gains are significantly large given that an economic power like Japan produces one dollar GDP using just 4,467 Btu of energy, which is just about a fifth that of India.

Malaysia and Indonesia, which have equally big or even larger manufacturing sectors, also manage to use significantly lower amounts of energy. Among smaller countries only Vietnam has a worse record than India in this region. And the energy intensity in South Korea, which caters to global markets is a third lower than that of India.

However, what makes India's case somewhat outstanding to an extent is its relatively greater success in boosting energy efficiency both among BRIC countries and also those of that in the Asia Pacific region. This is significant though the numbers show that the gains posted are of a more recent vintage. In the nineties, when the energy intensity went up by an annual average rate of 0.5% in the Asia Pacific region, India restrained its use by holding down the increase in energy intensity to just 0.1% per annum. Though this record pales before other countries in the region like Malaysia and Singapore, which reduced the energy intensity of production, it was significantly much better than that of most other Asian countries.

What is more laudable is India's record in the first five years of the current decade. Numbers till the year 2009 show that India was able to reduce the energy intensity of output by an annual average rate of 2.4%, which was indeed significant given that energy intensity in the Asia Pacific region as a whole was stagnant during the period. But it should be pointed out that India was not notable on this front. In fact, the record shows that other countries like Indonesia and Philippines did a notch better by reducing energy intensity by as much as around 4% annually during the period.

China has a surprisingly mixed record on the energy front. The energy intensity of output in China has been the worst historically, both in the nineties and also in the current decade. Though one can attribute the high energy intensity to the exceptionally large share of the manufacturing sector in the Chinese economy, it is also likely that the bloated estimates of the GDP make the

energy intensity figures equally larger. But what is more surprising is its mixed record in making efficiency gains.

Numbers show that China made vast gains in reducing energy intensity of output in the nineties. The 6.5% annual average reduction in energy intensity of the Chinese economy during the period was the most exemplary achievements made in recent times. But what is more surprising was the 2.6% annual growth of energy intensity in the Chinese economy during the current decade. One should note that the bloated use of energy happened even as other competing nations like Japan, India, South Korea and Philippines were cutting down on energy intensity. It is a big question of how Chinese products could gain in the international markets even as its energy intensity rose much faster when global energy prices were on a roll.

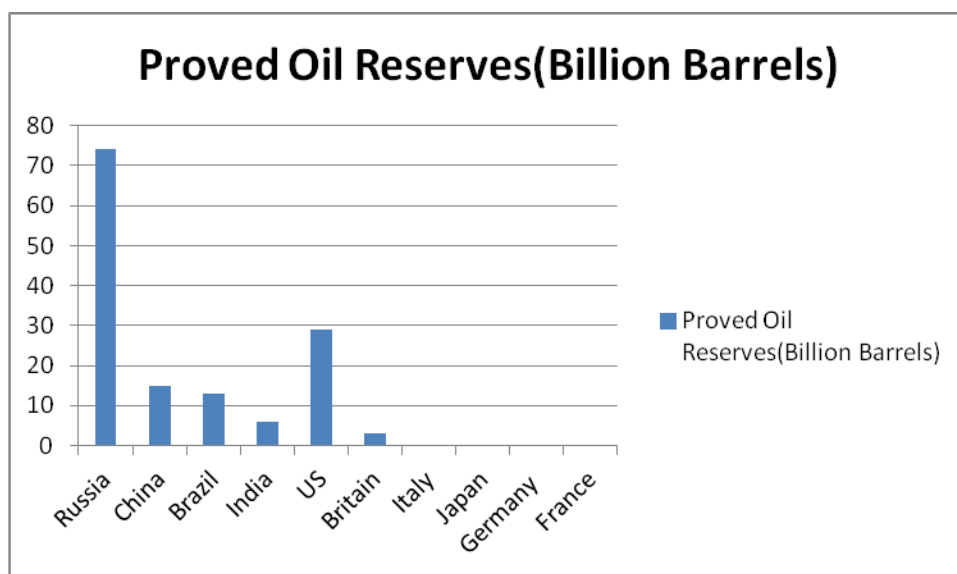
The most lacklustre record among BRIC countries on the energy front is that of Russia, which guzzles energy much faster than its reputed consumption of much stronger spirits. The most inefficient among the major economies across the globe, Russia used up as much as 1,09,929 Btu of energy for each dollar output of GDP at market exchange rates in the early nineties, which was almost 10 times the global average. Although Russia has cut down on the relative consumption of energy by reducing the energy intensity at an annual rate of 2.1% since the nineties, and by an accelerated pace of 4.4% in the current decade, it still tops the list of the most energy inefficient economies.

COMPARISON OF BRIC COUNTRIES WITH G6 NATIONS ON NATURAL ENERGY RESOURCES:-

OIL:-

Reserves: - The structure of the global oil industry has been undergoing drastic change for the last several decades. The prime driver of this change has been more production moving to countries dominated by national oil companies that continue to hold the majority share of proved reserves. When comparison are made between BRICs and G6, it was found that Russia and the US lead their respective groups in proved, conventional oil reserves but the one country showing the most promise is Brazil.

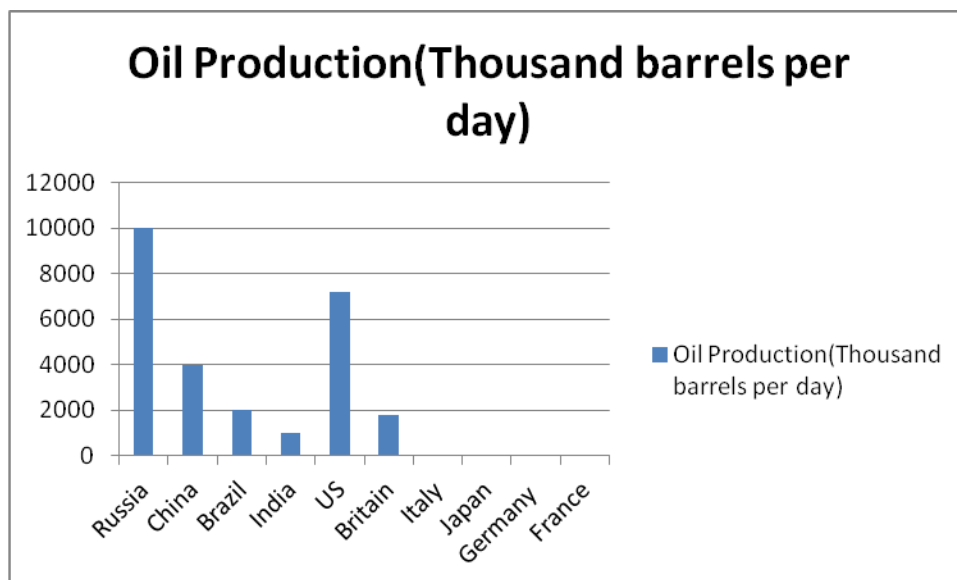
Of the four BRIC nations, Russia holds the most proved conventional oil reserves at slightly over 74 billion barrels which although the largest in the group, pales in comparison to Saudi Arabia, Venezuela, Iran, Iraq and Kuwait. India and China have measurable reserves but their reserve-to-production ratio stands at 21 years and 11 years respectively at current usage rates.



Source: HIS Global Insight Nov 1, 2010

Fig.2 Proved Oil Reserves in BRIC Nations & G6 Countries

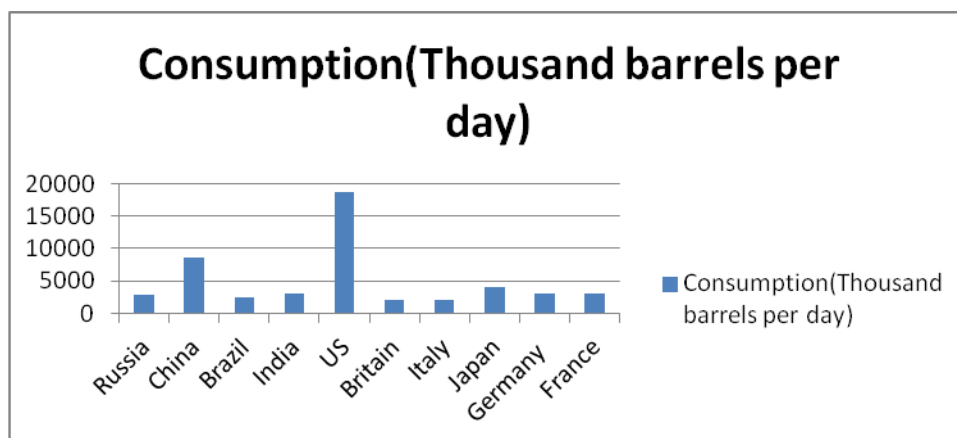
Production:- While estimates vary from 75 to 90 percent of the world's oil reserves owned by national oil companies, it comes as no surprise that oil production has continued to move to where the reserves are located. Based on their respective categories, Russia leads both G6 and BRIC nations with 10 million barrels a day (mb/d) of oil production, while the US comes in a close third at almost 7.2 mb/d (just behind Saudi Arabia).



Source: HIS Global Insight Nov 1,2010

Fig. 3 Oil Production in BRIC Nations & G6 Countries

Consumption:- Oil consumption has traditionally been strongest in the west, led by the US at 18.7 mb/d, but the BRIC nations are slowly closing the gap, led by China (8.7mb.d) and India (3.1 mb/d). Declining consumption in the west is due to lower GDP economic growth and policies to curb the use of transportation fuels. Alternatively, oil consumption growth in China & India is due to robust economic growth in both the countries, leading to increase in middle class with disposable income. Although Chinese GDP is forecasted to slow down somewhat in next 5 years. The key distinction is that BRIC nations are currently experiencing their own industrial era requiring more energy consumption.



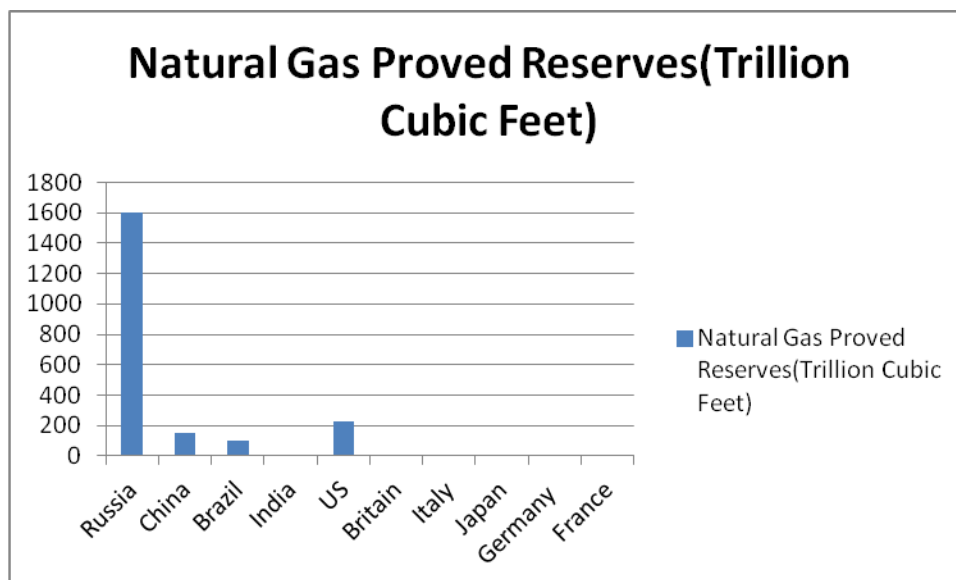
Source: HIS Global Insight Nov 1,2010

Fig. 4 Oil Consumption in BRIC Nations & G6 Countries

Natural Gas:- Although unconventional sources of natural gas gained widespread media attention during 2010, traditional sources of natural gas continued to be an important part of the energy mix for electric utilities. Increased use of gas for power plants is seen by many government policy makers and utilizes alike as a cleaner fuel than coal for power generation and a way to reduce carbon emissions.

Reserves:- The reserves category is dominated by one nation. Russia. Russia's traditionally large natural gas reserves easily dominate both the G6 and other BRIC nations over the last several years, intense political and media attention has been devoted to the balance of market power between Russia- mainly through Gazprom as a major supplier and the European Union as the major buyer.

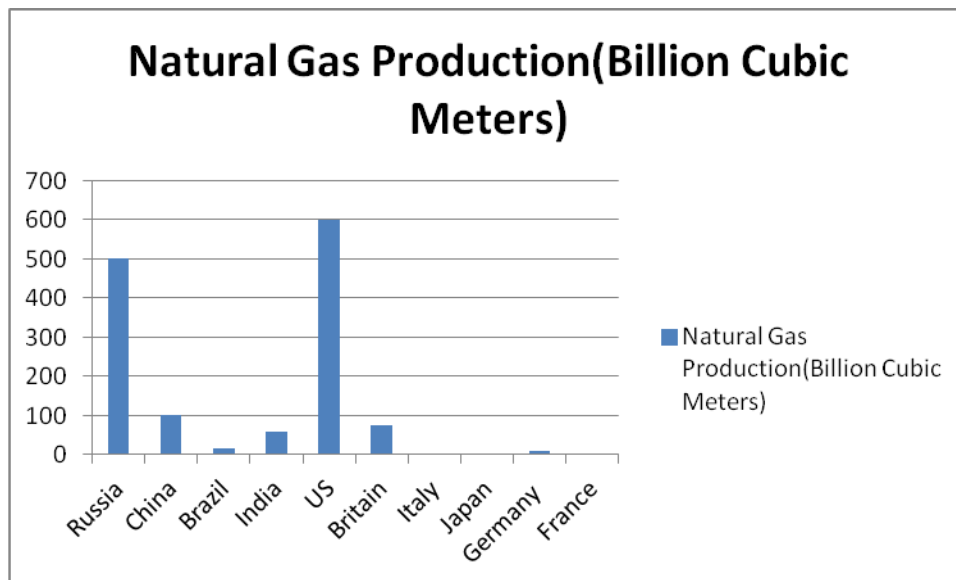
With the profusion of unconventional supplies, US now has 2,247 trillion cubic feet(tcf) of proved gas reserves, enough to last roughly 18 years at 2007 demand levels according to a US study from the American Clean Skies Foundation. These new found sources place the US slightly ahead of Russia in terms of Gas production.



Source: HIS Global Insight Nov 1,2010

Fig.5 Natural Gas Proved Reserves in BRIC Nations & G6 Countries

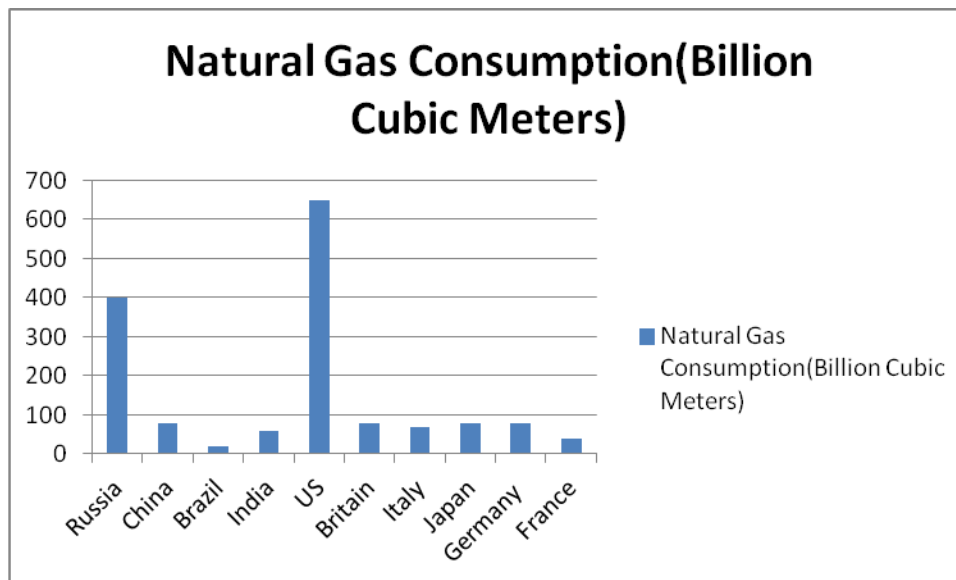
Production:- Production of natural gas continues to be driven by two countries , US and Russia. Both countries are mature producers in that both have extensive gas pipeline network and large consuming population. Within the next 5 years, the US will increase its gas production based in unconventional resources and could become a net gas exporter.



Source: HIS Global Insight Nov 1, 2010

Fig. 6 Natural Gas Production in BRIC Nations & G6 Countries

Consumption:- Based on recent additions in supply from unconventional sources, natural gas consumption is being driven by the US and to lesser extent by the other G6 nations. However as BRIC economies shake off the effects of economic crisis, gas consumption is likely to increase led by China as its gas demand grows the fastest at an average rate of 6% a year according to International Energy Agency. Russian gas demand however is still expected to dominate the BRIC cluster of countries, especially as gas consumption in Russia will remain largely subsidized.



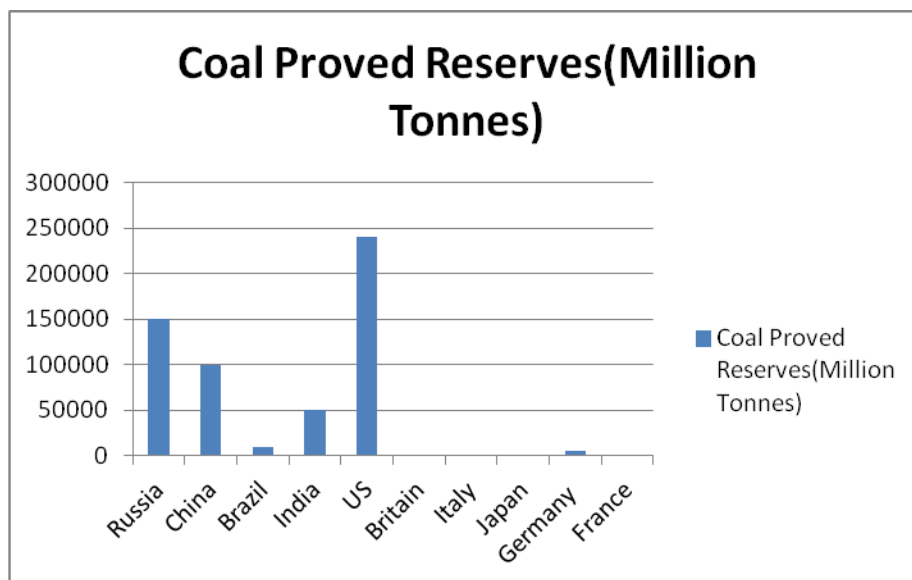
Source: HIS Global Insight Nov 1, 2010

Fig.7_Natural Gas Consumption in BRIC Nations & G6 Countries

Coal:-

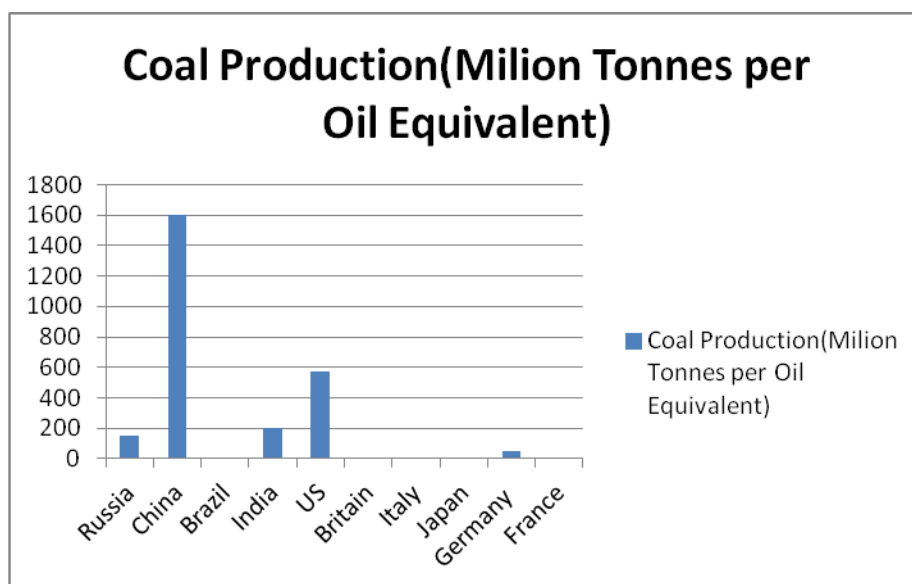
Reserves:- Coal represents a major part of many countries' energy mix mainly to electric utilities. Coal reserves are led by the US which is sometimes referred to as the "Saudi Arabia of Coal". Russia and China both have larger coal reserve while the remained of G6 and BRIC nations possess small reserves. The continued use of coal in G6 countries is likely to be constrained by nothing more than carbon emissions.

The US holds the largest coal reserves in the world. But the introduction of carbon pricing mechanism in US, whether through a carbon tax or a European style cap-and-trade system, may restrict the economic benefit of using coal as a fuel for power generation, at least in the existing, coal fired power plants in US.



Source: HIS Global Insight Nov 1,2010

Fig. 8 Coal Proved Reserves in BRIC Nations & G6 Countries



Source: HIS Global Insight Nov 1, 2010

Fig 9 Coal Production in BRIC Nations & G6 Countries

Conclusion:-

BRIC countries are increasingly becoming the major hubs of hydrocarbon reserves, production and consumption. They will further attract large amount of capital for the development and financing of new supply infrastructure.

Over the next decade, it is likely that Brazil will become a major oil producer and exporter based on its new found reserves. Russia in addition to being the largest gas reserve and production globally, will continue to be the dominant oil producer as its oil companies locate and exploit new reserves in order to thwart the decline of currently producing fields. As Chinese NOCs remains on the hunt for new reserves, they will add to an already increasing amount of oil production. Oil consumption and refining capacity will continue to head to Asia as emerging economies add to a growing middle class consumer base. New natural gas finds in the form of shale gas will transform the US economy energy industry first as a gas exporter and then as a new transportation fuel. Coal use will likely remain as the dominant fuel of choice for many emerging economies but renewable energy and natural gas will increasingly gain on coal use.

As major importers of fossil fuels both China & India will be wary about their energy bills. As major producer and exporters, Russia and potentially Brazil will want to ensure that international energy commodities prices support the development of their resources.

The notion of BRIC countries as a homogenous group of leading energy countries appears to fail the test – for now.

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