Determinants of Public Utility's Performance*

Sanjay Gupta[1], V. Ranganathan[2] & L. Prasad[3]

Abstract

Organizations under public ownership have earned the dubious distinction that under-performance is the hallmark of public ownership and even any improvement may be only ephemeral. Several agency-based and democracy-based theories have explained why they cannot perform. But no study has addressed the significant variations in their performance and tried to explain these variations in terms of motivations of the owner-government and the agent-manager. This paper addresses this question. Public ownership is not a homogeneous concept and the agent manager's discretion, which largely determines the strategic behavior of the organization is conditioned by the type of demands the government puts on the organization and the diligence with which the government's goals are pursued. The paper explores the connection between the expectations of the external actors—the owners and resource providers— and the firm's managers on the strategy formulation of the organization which in turn shape the structure, controls, incentives and processes of the organization, which ultimately determine the performance. The paper draws from the study of two electric utilities in India and one in Thailand, all of them being state owned.

I. INTRODUCTION

Public enterprises have a long history dating back to Roman Empire and the Old Testament in European history and to the Maurya Period in Indian History. The French revolution and Weber's bureaucracy as mode of governance provided a raison de'tre for public enterprises to function. The public enterprises were mainly in two areas: in natural monopolies like electricity, railroad etc., and in industries which had a high tax collection potential (sin sectors) like tobacco, liquor etc. Russian revolution and the ideology of centralized planning and socialism provided legitimacy to public enterprises. World War II gave a further impetus to the growth of State Owned Enterprises (SOEs), because the State started managing the industries

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1. Principal Consultant, Energies & Utilities Group, DCG, Infosys Technologies Limited, Electronics City, Hosur Road Bangalore, India –561029.
Email: sanjay_gupta01@infosys.com

2. Professor, Indian Institute of Management, Bangalore, Bannerghatta Road, Bangalore, India – 560076, Email: ranga@iimb.ernet.in

3. Professor of Organization Behaviour, Indian Institute of Management, Bangalore. prasad@iimb.ernet.in

acquired from the enemy like Renault in France (Aharoni & Vernon, 1981).

The problems started when the governments had to *run* these enterprises. What should be the optimal relationship between the government and SOE? The autonomy-accountability literature tried to address this issue, but it turned out to be verbiage and provided no precise relationship based on clear expectations. The principal-agent theory suggested that because of the existence of multiple principals with differing objectives, the SOE manager can be characterized as an Agent without a Principal. The manager has greater freedom to manipulate one objective against the other and can take the SOE in the direction of *his* perception of public interest or in the extreme, to serve his own self interest. The literature on SOEs in Western democracies postulates that the politician-Principal would use the SOE as an instrument to win elections and subordinate SOE's objective to his personal ambition. Recent study on China reveals that in SOEs the politician and the bureaucrat extract rent out of SOE to benefit either themselves or their constituencies (Edward Steinfeld 1998).

In the 1980's a paradigm shift occurred and the emphasis was on the *privatization* of SOEs in many countries. This happened mainly due to the continued non-performance of SOEs, coupled with a change in philosophy that the Government should not be in business. The major thrust came from Margaret Thatcher, who led the privatization blitzkrieg in UK and from USA. The glasnost and the subsequent fall of USSR, which made the public disillusioned with communism, acted as a catalyst to this. Simultaneously, the World Bank, suffering from a funds squeeze on the one hand and a self assumed mandate to promote the gospel of privatization on the other, effected a major shift in its lending policy to pressure governments towards privatization. By 1990's, a popular perception emerged that running businesses is not the business of Government and State ownership of enterprises was ipso-facto undesirable.

The focus of the present study is to reexamine this proposition. We challenge the *uniform* nonperformance assumption of SOEs, and discover that indeed there is a wide variation in performance even in the same industry. We studied two State owned electric utilities (State Electricity Boards) in India and one in Thailand. The study examines the causes for their differential performance and links these with the *nature* of governance by the State in discharging its ownership function.

II. METHODOLOGY

Performance of SoEs comes in two dimensions: Commercial and Social. Performance is conditioned by the structure of the organization, management controls and incentives. These in turn are influenced by the strategic behavior of the organization orchestrated by the 'manager'. The manager modulates the strategic behavior of the organization according to the expectations and monitoring of the Government-owner and his own self-interest or his own perception of public interest. These interactions are modeled below:

In order to understand the above process, we use a *multiple holistic qualitative case study* approach. Case study method is adopted here because micro level understanding of each organization is required to discern the chemistry between the organizations strategic behavior and structure, controls and processes and consequently its impact on performance. We use multiple case studies, so that we can then identify different ways in which Governments articulate their ownership demands on the organization, and the differences in strategic behavior of organizations, which manifest in different structures, controls and processes.

Yin (1984) provides support for the case study method on the strength of its susceptibility for in-depth analysis and holistic approach. The case method is also the most effective in explaning causal linkages and firm level processes. Eisenhardt (1991) extols the use of multiple cases for developing better theoretical constructs. She also provides a roadmap for building theory from case study research, which is adopted here. Stenfield has also adopted this methodology in explaining failures of SOEs under ostensibly liberal economic reforms in China

Selection of Cases: Based on *variation in performance* on financial, operational and social parameters, we selected two utilities in India near either end of the spectrum, and chose a third utility from Thailand comparable in size. Though 4-6 cases provide better understanding, only three cases were taken due to constraints of cost and time. The case from Thailand was chosen to avoid national and cultural bias and to provide a benchmark.

Several guidelines are available for determining the choice of research sites. Given the limited number of cases that may be studied, it makes sense to select cases that represent polar or extreme types and in which the process of interest is transparently observable (Eisenhardt, 1989; Pettigrew, 1990). Eisenhardt (1991) suggested for more than a single case and normally "between 4 and 10 cases" because these many cases usually work well for theory building. However, the present study has been restricted to three cases only, partly because of constraints on resources and time and partly because these three cases have been able to provide representative samples as per the requirements. The cases being public electric utilities, the variation in performance among them, has been the main criteria for the selection of the cases in the present study. For this, we selected two cases from the State Electricity Boards in India and one case from the electric utilities of another Asian country, keeping in view the large variation in their performance to get useful findings with respect to the research problem.

III. PERFORMANCE MEASUREMENT INDICATORS

For selecting all the three cases, we have compared the performance of organizations on selected performance measurement. The indicators chosen have been losses (technical and non-technical), labour productivity, return on investment and collection efficiency. These factors are not independent, and hence this measure is only a crude measure for selecting the cases. For selecting the cases from SEBs in India, we have taken losses as T&D losses in percentage[1]; labour productivity[2] as number of employees per MWkh electricity sold; return on investment as return on capital base in percentage, including subsidies provided by state governments if at all and collection efficiency as revenue arrears outstanding as a percentage of total sales. For selecting cases among SEBs, we have taken data for the integrated SEBs as data for electricity distribution only in SEBs is not available. For selecting the third case, we have considered only electricity distribution firms from other Asian countries. For comparing the performance of two selected cases of SEBs with the third case of a distribution company, performance indicators of SEBs have been modified[3] to make them comparable to the performance of the distribution company.

From these values, we have calculated the relative performance of all the SEBs on all the four selected performance parameters by taking the best value as 1 and the worse value as 0, keeping objectivity in mind and then interpolated all other values between 0 and 1. The relative performances of an SEB on the four parameters have been given equal weights to determine the Overall Performance Index (OPI) for all the SEBs. After developing the OPI for all the SEBs, we have ranked them based on their OPIs. From this ranking, we have selected two SEBs, one as the best performing and other as the worse performing. While selecting the cases based on the above criteria, we have also considered the size of the organization in terms of the number of consumers served and the number of employees along with the convenience and the permission for doing the study. Based on above selection criteria, the two cases selected from the SEBs in India are Maharastra State Electricity Board (MSEB) and Uttar Pradesh State Electricity Board (UPSEB). These two cases are not the best performing and the worst performing SEBs. We could not get

1 Includes both technical and non-technical losses because SEBs do not maintain separate data.

2 In the States, where there is a separate entity for generation (state sector only and not central sector entities), the employees of generation sector are also considered to calculate labour productivity. However, employees of central entities and private distribution entities are not considered for this, which may introduce small changes in the figures taken by us.

3 Losses of SEBs are taken as distribution losses and labour productivity is calculated only for distribution sector and not for the integrated SEB.

the permission for the best performing SEB (Tamil Nadu State Electricity Board) according to our criteria. The size of worst performing SEBs as compared to UPSEB are few, but those are relatively smaller in size compared to MSEB and hence, we did not select them.

IV. ORGANIZATION OF THE PAPER

The section is presented in three parts. The first part looks at the performance differences in the organizations, compares the structure, control systems and processes of these organizations and then looks at the strategies of these organizations. Finally, it links the differences in the organization's structure, control systems and processes to the difference in strategies of these organizations and its impact on the performance. Then we went further back and traced the differences in the structures and processes to the strategic behavior of the organizations. This, in turn is influenced by the Government's expectations on one-hand and SOE managers' interests on the other. The second part focuses on the development of conceptual framework to understand the top management's strategic orientation, which shapes the strategies of the organizations in response to the demands of the State. The third part integrates the conceptual framework with the findings from the three electricity utilities.

Part I

What accounts for the differential performance of organizations under the same public ownership? To unravel this, we chose three electricity utilities, Maharastra State Electricity Board (MSEB)[4] and Uttar Pradesh State Electricity Board (UPSEB)[5] from India and Provincial Electricity Authority (PEA)[6] from Thailand.

We found that there is lot of variation in their performance, both on commercial and social dimensions (See Table 1).

From Table 1, it is seen that PEA, MSEB and UPSEB have turned in best, average and poor performances on commercial dimension. On Social dimension, PEA and MSEB have done well, while UPSEB has fared poorly on this as well. To understand the reasons for the differences in the performance, we look at the structure, control systems and processes related to electricity distribution in these organizations.

Organizational Structure

PEA and MSEB have *tailored the organizational structure to the needs.* Thus, they have different structures in urban and rural areas with different levels of centralization, specialization and

4 MSEB is supplying electricity to the state of Maharastra, India, except for the major areas of Mumbai city.

5 UPSEB is supplying electricity in the state of Uttar Pradesh, India

6 PEA is an electricity distribution company in Thailand and supplying electricity to provincial areas of Thailand except for the metropolitan areas of Bangkok city.

Table 1: Variation in Performance of Public Electric Utilities

Parameters	PEA (1998)	MSEB (1998-99)	UPSEB (1998-99)
Commercial parameters:			
Average Tariff* (US cents)	5.25	4.64	4
Rate of Return**	7.8%	4.5% (0.33)	4.11% (-17.5)
Receivables	39 days	157 days	458 days
Losses***	5.94%	14.14%	22.83%
Sales / Employee****	1.60 MU	0.59 MU	0.47 MU
Customer / Employee****	352	159	127
Social parameter:			
% Village Electrified	98.87	100	55.14

* 1$= 45 Rupees and 1$= 40 Baht

** Return is calculated on net fixed assets for PEA and on capital base for SEBs [return on net fixed assets for MSEB is 0.15% (2.61), while for UPSEB is 3.05% (-12.09) and the figures in bracket indicate return without subsidies].

*** Transmission loss of 4% are deducted from Transmission & Distribution loss to get the distribution losses for MSEB and UPSEB. However, these reported figures were until recently fudged. MSEB claimed a loss of 28% recently before the Regulatory Commission and UPSEB's losses would be even higher.

**** To calculate employees in distribution for SEBs, 70:30 ratio is taken for employees in generation & transmission to distribution Social Parameters:

integration in these areas. This differentiation is not there in UPSEB. Besides, the organization structure is much more delayered in PEA than in the Indian SEBs. For example, in PEA, the lowest office 4 reports directly to the office 1 depending on its location and not to office 3, which is next higher up office in hierarchy, while in both the SEBs, each office has to report to only next higher office in the hierarchy. PEA and MSEB have functional specialization in each office in operations, which helps them to have better functioning and accountability. For example, general administration, technical and finance functions are well separated. This explicit separation is lacking in UPSEB, which has resulted in lack of accountability. In both the Indian SEBs, cadre lines are sharply drawn between engineers and accounts personnel and only an engineer could be the head of the office. This results in conflicts and lack of coordination among the functionaries. This is not the case in PEA where head of the office is designated as 'manager' and s/he could be from any function.

The responsibility centres in PEA and MSEB are intermediate offices in the hierarchy and have sufficient powers. While in UPSEB, responsibility centre is almost at the lowest level in the hierarchy and does not have proper authority and resources. It has taken a toll on performance.

PEA and MSEB have technical support function at the field office levels to support the operational staff. In UPSEB, operational staff has to do planning, material arrangement and reporting without any support for specialized tasks. Further, the level of work specialization at operation staff level is less in SEBs compared to PEA. This affects the quality of performance because of dilution of responsibility on the one hand and absence of focus on the other.

Control Systems

PEA sets clear operational targets for its employees to achieve and has a well-oiled planning and budgeting process, which is both bottom up and top down. The SEBs on the other hand plan only for investment but lack clear operational targets. Besides the Plans are always top down, and there is no finality to the Plans because the funds for expansion have to mainly come from the Government, and the Government itself does not have a clear allocation for power sector. Thus the SEBs attach no sanctity for planning. In contrast, in PEA, the action plans bear the imprint of commitment to reach targets from all operating units from below and firmness of commitment of funds from above. The budgeting in both the SEBs is without involvement of operational staff and the operating staff in turn cite lack of allocation of funds as excuse for their failed commitment to complete tasks.

PEA is mainly a distribution entity supplying to the whole of Thailand, except for the Bangkok metropolitan region and buys electricity from other generators. This naturally provides for unbundling of generation and distribution, which greatly helps in distribution cost control. The SEBs, both produce and buy electricity, but have no accounting unbundling between generation, transmission and distribution. This blunts the ability of SEB managements to adopt any profit center based control mechanism for improving financial performance on an area basis.

In PEA, responsibility is decentralized with required autonomy and operational units are responsible for performance in order to achieve overall organizational goals. The decentralization of responsibility induces a sense of commitment for the employees. The profit and cost center approach with Key Performance Indicators (KPIs) and performance monitoring against the targets for each KPI makes units responsible to achieve the organizational goals in PEA. On the other hand, responsibility in both the SEBs has been decentralized but without counterpart authority and without proper targets to be achieved by them. This has resulted in ineffective performance monitoring sans targets, except on revenue collection. Even, in the case of revenue collection targets, they are set without reference to the revenue demand. This weakness is extreme for UPSEB, where the head office has very little control over its area offices in terms of either accounting control or energy audit.

The information system for monitoring and control in SEBs is not appropriate due to lack of use of IT and interconnectivity. It requires manual efforts, which restricts information processing capabilities. Due to this, information system is not able to provide timely feedback and help in decision-making process. In MSEB, there is off-line type of use of IT in commercial information and some level of interconnectivity, thus proving to be better than UPSEB, but not up to the standards of PEA.

The *incentive system* to motivate employees to perform, is totally missing in UPSEB, while in PEA and MSEB, it is there in some form. There is an honor system in PEA and some promotion based on merit and 'selection' in MSEB. In UPSEB, it is totally seniority based, totally disempowering bosses. Being government organizations, the punishment system is almost absent in all the three organizations.

Processes

The metering process in both the SEBs is less efficient compared to PEA due to lack of automation. However, in PEA and MSEB, this process is carefully planned and scheduled recognizing the importance of revenue collection. The automated metering process in vogue in PEA has the following advantages:

- The automation of metering process eliminates manual intervention and provides online validation facility to avoid defective meter reading. This helps in raising almost 100% of the bills based on meter reading. Manual intervention in meter reading leaves scope for errors and fudging and non-recording by meter readers in SEBs. Because of automated metering process, almost all consumers are billed on actual meter reading in PEA, while the percentage of non-reading of meters, due to defective meters or other reasons is very high in MSEB and UPSEB. These figures are approximately 20% and 40%.
- Automation of metering process also allows taking more reading in a day because of reduced time for meter reading. This is evident from the frequency of meter reading, which is short, viz. monthly for all consumers in PEA, while in both the SEBs, the frequency of meter reading is mostly bimonthly/quarterly for all the consumers except for very small number of consumers, where it monthly.
- The inefficient meter reading is one of the major sources of energy losses. The energy losses in PEA are only 5.94% in 1998. The energy losses for

different urban areas in MSEB (technical losses + theft) range from a low of 6.9% to a high of 30.44% in with most of other areas in the range of 20% in 1998-99. The Maharastra Electricity Regulatory Commission has given a figure of 28% for the whole MSEB, based on sample readings for agriculture consumption, which is un-metered. The figures of losses in distribution for UPSEB in urban areas are from 10% to 45%, with average around 35% in 1998-99. The regulatory commission has put energy losses of 40% in UPSEB.

The billing process due to electronic data transfer from meters to billing units and from billing units to computer centers in PEA results in faster and efficient billing process. In MSEB, this process, though not electronic, is still more effective than in UPSEB due to decentralized data punching and submission. PEA has interconnected all of its offices through satellite, MSEB has limited interconnectivity, while UPSEB has made no use of IT at all.

Automation of metering process and online data transfer reduce staff and working capital requirements (WCR), which in turn enhance the Rate of Return. WCR for residential consumers was 18 days (worth of revenue) for PEA, 52 days for Urban and 82 days for Rural consumers for MSEB and 85 days for UPSEB. For the large industry and commercial consumers, it was 30, 33-37 and 37-50 for the three utilities respectively, thus maintaining the same ranks. The number of wrong bills needing correction is also high in SEBs, where in PEA it is only 5-10 bills in 10,000 consumers. The bills to be corrected in MSEB ranges around 25%, while in UPSEB, they are in the range of 40%.

In PEA and MSEB, groups separate from normal operation and maintenance staff are formed to disconnect the consumers who do not pay bills in time. This has resulted in disconnection being a routine activity in PEA and MSEB. However, in UPSEB, disconnection is still a type of special activity undertaken during the last 6 months of the year because the same staff is used, which is more busy in earlier months in maintenance. Due to delay in preparation of disconnection lists because of time taken in data recording, the disconnection action is taken late in both the SEBs, except for urban areas in MSEB, where data is recorded fast. The effect of the disconnection policy shows up in receivables. PEA has only 39 days receivables including 180 days for government connections. The overall collection is more than 95% against the demand raised. While in MSEB, receivables are of 157 days and in UPSEB, receivables are of 458 days.

The maintenance system in PEA and MSEB is better than in UPSEB due to work specialization on the one hand and separate provision of funds in the budget on the other. The monitoring of quality indicators in PEA necessitates the units to do preventive maintenance to avoid defects occurring in the first place. In MSEB, preventive maintenance is done for the High Tension (HT) system because interruptions are reported at this level.

We see from the above comparative analysis that there are difference in the structure, control systems and process of these organizations, which has an impact on their performance. Now we look back, see why there is difference and trace these differences to differences in strategies of these organizations.

Strategy of Organizations

PEA has formulated its strategic intent, whereas both the SEBs are not having long term strategy. The lack of vision and mission statements in SEBs also shows the lack of organizations' aspirations. Both the SEBs do not have any written objectives other than objectives as per the Electricity Supply Act 1948 to set directions for themselves.

The objective of PEA is to be a *commercially oriented and customer focused efficient utility*. For the SEBs, while there are no explicit objectives, the implied agenda is to meet the demand based on top management's views. In doing so, MSEB would concentrate on giving good supply to subsidizing consumers, while UPSEB would try to collect revenue to meet its salary bill. For ensuring commerciality, PEA has identified Key Results Areas (KRAs) to focus on and within each KRA, it has identified Key Performance Indicators (KPIs), with both long-term and short-term targets. This makes clear to employees the short-term and long-term expectations of the organization from them. This target setting is missing in SEBs.

PEA and MSEB are using the strategy of *differentiation* among customers, to enhance revenue. PEA is focusing on high margin market by giving them personal attention. MSEB is focusing on urban areas to improve efficiency in these areas and giving special attention to HT consumers, who have higher tariffs. However, both the SEBs lack customer care, due to lack of standards for services, which are in PEA. PEA is also using IT as a strategic tool to enhance revenue. *We see that there are differences in the strategies of these organizations and now we link these differences to the differences in their structure, control systems and processes.*

Relationship between Strategy and Internal Systems

The primacy for commercial objectives in PEA has lead to the identification of KRAs, and KPIs with short-term and long-term targets, and to achieve them, the decentralization of responsibilities to the responsibility centers. Full commerciality has lead to profit center concept enforced in PEA, though incentives are weak, due to public ownership. Medium commerciality has lead to a responsibility center established in MSEB, where there are revenue collection targets but no benchmarks for costs. In UPSEB, due to low commerciality, there are no responsibility centers; there are only revenue collection targets. This difference in responsibility center has also resulted in difference in budgeting and planning; and accounts and finance control in these organizations.

PEA has an elaborate top down cum bottom up planning and budgeting process, where the former ensures funds availability and the latter assures employee commitment. In MSEB, there is partial focus on commercial objectives; thus, there is little involvement from bottom in the planning and budgeting process. In UPSEB, the planning and budgeting exist only on paper, but seldom enforced, due to lack of commerciality. The top down - bottom up approach of planning and budgeting with periodic review and budgeting as control in PEA, is the result of commercially oriented strategy, which is lacking in both the SEBs.

Due to profit center approach, the operating units in PEA have financial autonomy as per the budget. In MSEB, there is partial focus on commercial objectives; there is a centralized expenditure control but in UPSEB, financial control is weak due to lack of commerciality. This shows that the commercially oriented strategy affects the control systems.

Functional specialization in PEA could be linked to the identification of KRAs in response to its commercially oriented strategy. The focus on efficiency improvement, due to commercial orientation, requires techno structure and work specialization. These aspects of organizational structure are partially present in MSEB and totally absent in UPSEB due to partial commercial orientation of MSEB and lack of commercial orientation of UPSEB. Therefore, this suggests that commercially oriented strategy affects the organizational structure.

The strategy of customer differentiation has resulted in different structure and control systems for urban and rural areas in both PEA and MSEB. The differing level of emphasis on commercialization in the three utilities has also lead to differing levels of functional specialization and demanding different levels of operational responsibility.

The strategy of PEA to use technology has made processes efficient due to automation of processes. The use of IT and interconnectivity had also allowed PEA to reduce layers in hierarchies, which has not been possible in both the SEBs. The use of IT in operations also has an impact on management information system (MIS). The MIS is more effective in PEA compared to both the SEBs because of lack of use of IT in SEBs. These findings show the impact of use of technology as a strategic tool on the organization's structure, control systems (MIS) and processes.

The strategy of customer orientation has resulted in effectiveness of revenue collection and maintenance processes in PEA. This impact is less positive on the processes in MSEB because, MSEB has not set standards for services, and only has

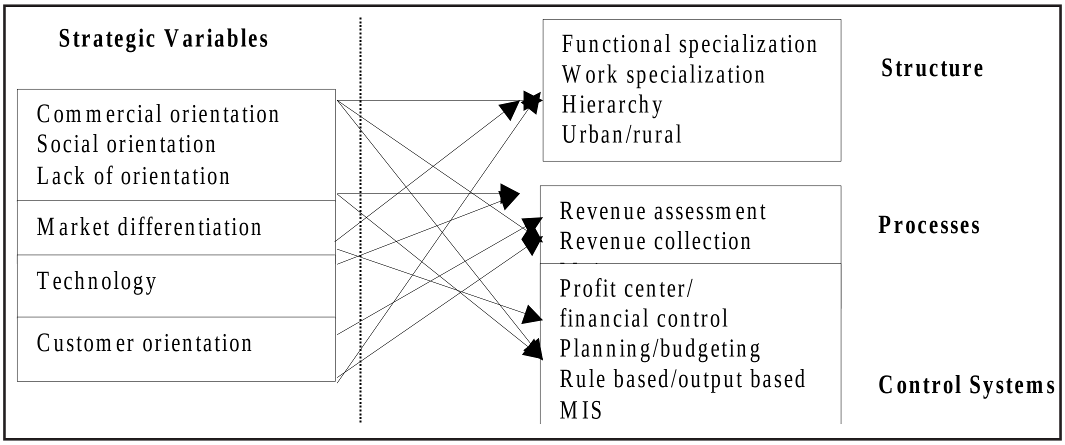

Figure 1:Relationship between Strategic Variables and Internal Systems

systems for interaction and feedback from consumers. The absence of customer orientation in UPSEB has also affected effectiveness of processes because the processes in UPSEB, compared to PEA and MSEB are less effective as discussed earlier.

Figure 1 shows the relationship between the different variables of the strategy and organization's structure, control systems and processes

Part II

Conceptual Framework

Contrary to popular perception, public ownership is not a homogenous concept. The performance of all the utilities under public ownership is not same and large variations exist in their performance, even within the same industry, as we have seen in the case of PEA, MSEB and UPSEB. SOEs face different institutional environments, though coming under the same umbrella of 'public ownership'. The strategic behavior of the organizations may be different within the same industry and ownership (Sharma & Vredenburg, 1998) due to difference in societal expectations, coercive pressures and regulatory policies (DiMaggio & Powell, 1983). Organizational and managerial factors also influence the strategic behavior of the organizations (Sharma, 2000; Zif, 1983). Based on the institutional environment under which public electric utilities operate in the developing countries and considering the managerial factors, we propose to develop a conceptual framework to understand the difference in strategic behavior of the public utilities and consequently the difference in the performance.

SOEs have multiple objectives: commercial, political, social and cultural (Monsen & Walter, 1983). The utilities have to achieve the ROI (return on investment) and at the same time, they have to make accessible the services to consumers, even in economically unviable remote areas at non-discriminatory prices. For instance in India, utilities have traditionally provided subsidized electricity to agriculture. While Government forces these conflicting demands on the SOEs, their achievement is a result of the balance of power between the Government as an owner and the top management who is the agent. The top management's strategic orientation could be commercial, social or a combination of both. The difference in top management's strategic orientation will result in different internal systems (structure, control systems and processes) and consequently the difference in performance.

To understand the difference in the strategic orientation of the top management, we need to understand the power and pressures exerted by different groups and how these affect the strategic orientation. The list of potential stakeholders influencing the public sector can be very extensive (Pollitt, 1986), however, DiMaggio and Powell (1983) have recognized two primary influential institutional actors in the context of public sector, namely the State and the various professional groups within an organization. In the case of public sectors, the State is not only the legal owner of the organization, but also the agent of the public. This gives the State a dominant position by virtue of a constellation of interests (Weber, 1978) and legal power. Consumers could be another pressure group, but Paul (1992) has argued that in monopoly situations, the cost of exit for consumers is high enough to restrict them to exert any pressure.

The domination, by virtue of a constellation of interests, suggests the political aspect of power enjoyed by the State. Organizations are coalitions with different interests and preferences (Cyert & March, 1963). These coalitions evaluate the organization and thereby provide legitimacy to the organization, which is necessary for the survival of an organization. Through the method of evaluation, these coalitions define the activities of an organization and influence organizational orientation. Mintzberg (1983) has defined these coalitions as influencers, who seek to control the decisions and actions of the organization. In the case of public utilities, the State is the dominant interest group. Hence, strategic behavior of public utilities would be influenced by the State because an organization is effective only to the extent that its most powerful stakeholder is satisfied (Connonlly et al., 1980).

The power domination of the State also results from the resource dependency of the utility on the State. The organizations are not only influenced by the coalitions, but also by the resource providers, because the key to an organization's survival is its ability to acquire and maintain resources (Pfeffer & Salancik, 1978). The resource dependence focuses on the exchange of resources between the utility and the resource provider, and the power relations this exchange entails because external organizations may demand certain actions in return due to resource dependency. In the case of public utilities, capital is the most critical resource, and for public utilities, the Government is the major resource provider. Other than the State, utilities get capital from other sources as well, like Domestic Financial Institutions (DFIs) and International Financial Institutions (IFIs). They could also influence the managerial strategic behavior, depending on their interests.

The State, being the dominant coalition and the resource provider, gets the political power to influence the managerial strategic behavior through formal or informal controls. As the State is nothing but the Government in power, aided by the bureaucracy/civil services in most of the countries, the political power of the State becomes the political power of the Government or the ruling political party. Because of this political power, the Government uses public utilities to further its political objectives. In a democracy, the objective of the Government as a political class is to maximize the probability of winning elections (Monsen & Walters, 1979). The party in power, acting as the Government, would influence the utilities to achieve its objectives of winning the next election, through patronage to its constituents. Thus, the objectives of the Government are mainly social objectives, in the form of a lower output price to certain categories and an obligatory universal service.

Because of the public ownership, the problem of principal-agent relationship is complicated. The politicians who are involved in the monitoring of SOEs as owner also act as agents for the public. Thus in SOEs, we have two types of principal-agent relationships: one between the public and the government as an agent of the public, and another between the Government as the owner and the managers of the organization as the agent. If the first nexus is weak, a politician as the agent disconfigures the social interest to the political interest. This problem arises due to lack of information and in this case, decisions are more likely to be politically oriented (Grinde & Thomas, 1991). The political interests would mostly be self-interest and to provide benefits to loyal supporters or favored individuals. On the other hand, if the control mechanism employed by the Government to monitor the SOE is weak, the agent-manager acts at a variance to what the Government demands.

Among the various professional groups in an organization, the managers are the most influential stakeholders within it. Their beliefs and values will influence the strategic orientation of the top management. Zif(1981) has suggested that the top management orientation is dependent on the individuals' personalities and interests. This is also consistent with the arguments of Aharoni (1980 & 81), who has argued that the managers' orientation would be influenced by their desire to achieve discretionary autonomy and independence from the political control. We take the beliefs and the value system of managers as a moderating variable. The value system of mangers is important because this will affect the institutional pressure positively or negatively and thereby influence the strategic orientation of the top management. The value system also decides the nature of control within the organization because clan control is one of the control mechanisms used in the organizations (Ouchi, 1979). We will discuss different values and their effect on the management orientation in next section.

Based on the above arguments, a number of broad factors can be considered for explaining the variations in the strategic orientation of the top management of the public utilities and consequently, the variations in their performance. These include:

- Resource dependency of the utility
- Political interests (of public representatives)
- Control mechanisms used by the Government
- Managers' beliefs and value system (moderating variable)

Based on these factors, Figure 2 provides a framework for understanding the variation in the strategic orientation of top management of public utilities and consequently, the variation in their performance.

Propositions

Resource Dependency

The managers of the public utilities depend on the State and other external actors for certain essential resources, namely, financial resources and markets (e.g., sale to public sector). In the case of

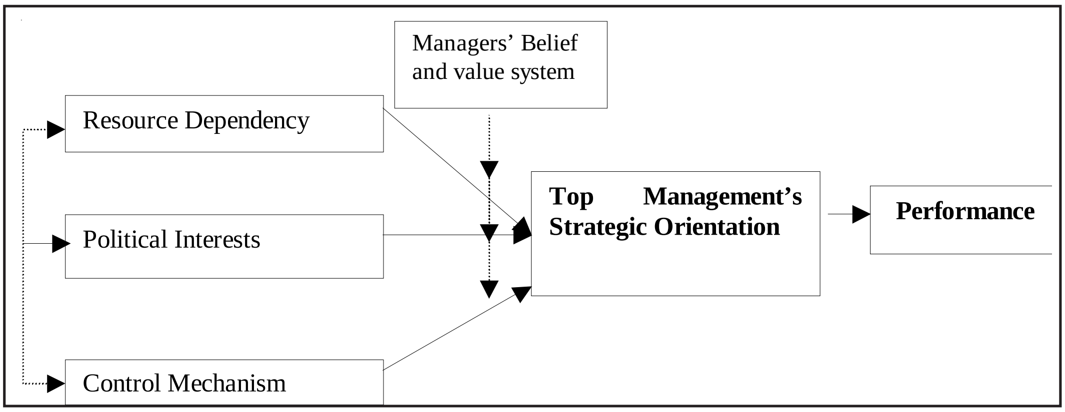

Figure 2: Framework for Strategic Orientation of Public Utilities

utilities, capital is the most critical resource and hence, the financial dependence is the most critical resource dependency. The financial dependence of the public utilities on the State arises due to the budgetary allocation from the State, guarantee of the State on the loans from the credit institutions and the subsidies for supplying cheaper power to certain categories of consumers. The markets, in the case of utilities are not that important, because they operate in a limited geographical area and all the consumers have to buy from that utility only. This results in financial dependency as the major resource dependency of the utility on external actors. The resource dependency of the utility on the State enables the Government to control the behavior of the organization. In this case, informal controls are preferred (Monsen & Walters, 1983) and the utility would be used more as a social instrument to achieve objectives of the ruling party, which would be to win the election next time also.

The public utilities are also dependent on DFIs for finances. In the developing countries, DFIs provide finances to the public utilities, either as a part of budget allocation, or directly. The DFIs are also influenced by the State and they have social obligations to fulfill. For instance, Rural Electrification Corporation (REC) in India provides loans mostly for the development of infrastructure for electricity in rural area. The DFIs will also need their loans to be returned back, though they can fall back on the Government, in case, the public utility is not able to return the loan. This shows that normally, DFIs will have both commercial and social objectives.

Other than these sources of finance, public utilities also get loans from the IFIs like the World Bank, Asian Development Bank and Multilateral Credit Agencies. These institutions provide loans on certain conditions. These conditions may be related to improvement in the commercial functioning of utilities, tariff hike to recover costs or even privatization. The IFIs are only interested in getting their money back and hence, they want public utilities to follow the commercial objectives. The World Bank and other IFIs are putting pressures on the public utilities to become commercial by going for tariff increase, reducing losses and improving collection. These conditions have been associated with the loans provided by these agencies in the developing countries.

The relative extent of financial dependency would be determined by the extent of funds provided by each agency to the total funds taken by the utility. The subsidies provided by the State Government should also be added to the loans provided by the State to determine the extent of financial dependency of the public utility on the State. The loans provided by the State come with certain earmark allocations for social sector development and utilities have less discretion in using those loans. The Governments provide subsidies for providing social services. Hence, to increase the revenue, utilities find it easier to be more socially oriented because now State becomes the consumer instead of large number of dispersed subsidized consumers. In case, if the utility has taken loan from IFIs and loan is critical and constitute a large portion of utility's needs, then utility would be governed by the diktats of the IFI. Based on the above, the following propositions are posited:

H1a: Higher the organization's financial dependency on the State, higher would be the social orientation of the top management

H1b: More the organization's financial dependency on the DFIs, the top management orientation would be a mix of commercial and social objectives

H1c: Higher the organization's financial dependency on the IFIs, higher would be the commercial orientation of the top management

Political Interests

The politicians often exercise informal controls to satisfy their own interests or to favor certain special constituencies. They can interfere directly without being held accountable for their interventions (Monsen & Walters, 1983). These interventions can distort the behavior of the management and nobody can be held accountable in the end. The utilities usually cite these interventions as an excuse for their inactions. For instance, public electric utilities mostly attribute poor performance on collection by them to interference in disconnection of certain consumers by the Government or political representatives. Similarly, non-performance by managers or difficulty in taking actions against non-performing mangers is attributed to the political interference in the operational matters of the utilities.

The political environment decides the nature and capability of political intervention in the working of the public utilities. The seminal work of Kramer (1971), which linked macroeconomic performance to incumbent electoral fortunes, suggests this relationship. It is assumed that politics (electoral politics) exert a significant influence on the choices, available with the ruling party for the public utilities. This is because politicians often find their self-interests at odds with the welfare of the public and this is reinforced by the inconsistency of social choices (Arrow, 1963). The political environment is determined by the ideology of the incumbent party, their strength in the political system and the timing of next election.

The party difference model based on ideologies of the party proposed by Hibbs (1977) suggests that coalitions favoring one party over another have distinct objectives, which they expect their preferred party to share. The parties should reflect their preferences through policies. Hibbs (1977, 87a & 87b) documents the expected differences of leftist and rightist parties. However, there are mixed evidence of the effect of ideology on the political actions. On one hand, a number of studies find that ideology does not explain the difference in policies of the governments (Wilenksky; Lackman), while there is a contrary evidence on the other hand, which suggests that ideology may be relevant for deciding policies (Castle; Davis et. al.). Sarangi (1990), in a cross-national empirical analysis, has found that ideology does not affect the change of policy.

The strength of political party is an important determinant of the policy of the Governments. If the incumbent ministers fear that party legislators and coalition partners will withdraw support over a policy issue, then that particular policy would not be followed because there is a risk that the incumbent party will loose the seat of power (Bernhard, 1998). The coalition and minority governments are more likely to fall over a policy dispute than a single party majority government.

The timing of election represents the political business or electoral cycle model on which the choice of policies depends. The electoral cycle model was first proposed by Nordhaus (1975) and was later extensively investigated by Tufte (1978). They suggested that by stimulating the economies before the elections, incumbents could tip the balance in their favor because voters favor growing economies.

In the case of pubic utilities, we consider ideology of the ruling party, nature of political system and the timing of elections as relevant variables of the political environment, which has influence on the strategic behavior of the utilities. We discuss the combined influence of these variables on the strategic behavior of the utilities.

The more fragmented is the political system, more would be the dependence of the ruling party on a number of coalitions and individuals, for support. In this case, the ideology of the party would be irrelevant because it can not impose its own choices on the coalition, which has diverse interests. This will provide individuals a chance to maximize their interests and interventions would be more because of the low power differential in the ruling coalition. This will also happen because the ruling party would not be in a position to restrict any politician, due to its precarious legislative strength. Powell (1978) has also predicted that in a minority government, the manipulations of economy would be less and hence, individual interests would be more visible.

In a unitary political system, where the strength of the ruling party is high, individuals have less power to intervene because the Government would act as a single entity and would not allow individual preferences, since the Government would be having a higher power. Thus, the ruling party ideology would determine the policy outcomes and allow the public utility to function commercially or socially as per its ideology. A rightist party is more likely to be concerned with efficiency and its policies will be directed towards this. The rightist governments are found to be more concerned with reduced budget deficit (Alt and Lowry, 1994). Whereas, left oriented ruling party will have policies of welfare. However, the electoral cycle will also influence this ideology and prior to the elections, the ruling party will follow those policies, which are likely to provide electoral benefits. Thus, the policy adopted by all kind of ruling parties would be welfare oriented only and they would try to be more populist.

However, if the strength of ruling party is anywhere between these two extremes of large majority and barely ruling, there will be differential pressures on the ruling party to maintain its ruling position. In this case, the ideology will not be a governing criteria for deciding the polices because there will always be a fear of rejection of policy by the backbenchers and the coalition partners. Hence, if the political system is of a balanced nature, due to low power differential among different interests groups, the common social interests are more likely to be followed. In this case, the ruling party would like to increase its strength in the next term and hence, the policies are more likely to be welfare oriented, through out the incumbency term. The strength of the ruling party can be determined by the members of the major ruling political party in the house. If this strength is low, then the political system is fragmented and if this is high, then the political system is unitary and exactly between these two stages, it would be balanced. Based on the above arguments, following hypotheses can be advanced:

H2a: The more fragmented the political system, more would be the exploitation and lower would be the emphasis of the top management on social and commercial orientation

H2b: The more unitary the political system with rightist ideology, higher would be the commercial orientation of the top management after the elections and higher would be the social orientation of the top management just before the elections (in search of ‘ populist’ measures)

H2c: The more unitary the political system with leftist ideology, higher would be the social orientation of the top management throughout the incumbency

H2d: The more unitary the political system with centrist ideology, the orientation of the top management would be a mix of commercial and social after the elections and more social before the elections (in search of ‘ populist’ measures)

H2e: The more balanced the political system, higher would be the social orientation of the top management

Control Mechanisms

The state is the legal owner of the public utilities and is responsible for the control of the organizations. The state exercises this control through a variety of systems and authorities. For this, there are a number of monitoring agencies. Figure 1.3

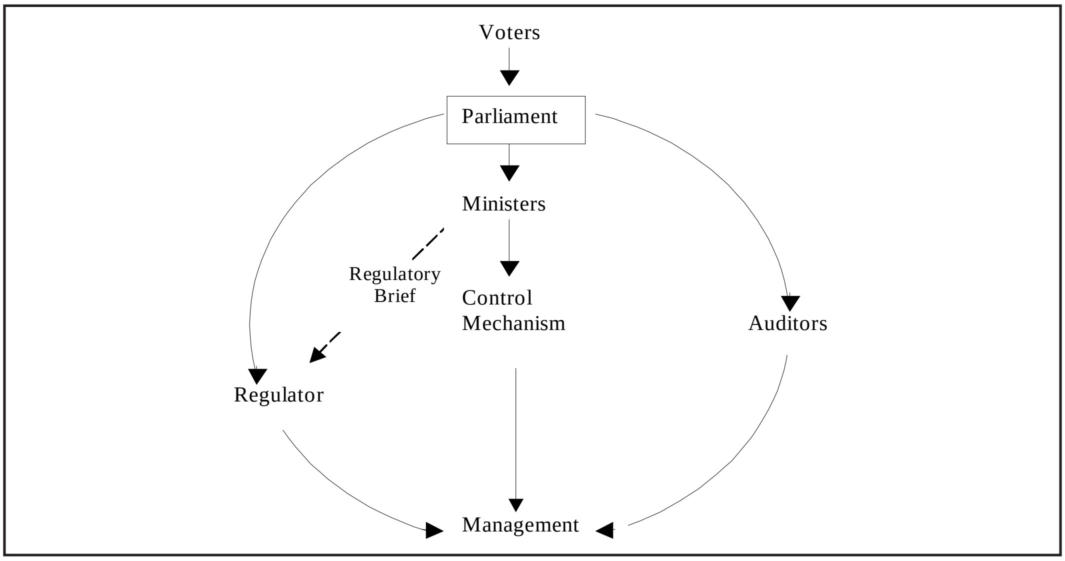

Figure 3: A Possible Public Sector Monitoring Hierarchy

provides the possible public sector monitoring hierarchy (Vickers & Yarrow, 1988). The control on the public sectors is exercised by the Parliament through a number of committees, like Public Accounts Committee. Audit and Vigilance authorities of the State also monitor the working of the public sectors. However, these agencies are not able to influence the strategic orientation of the top management, because they just monitor what is happening and it does not concern them whether that direction is correct or not. The State controls the public utilities through the concerned Ministry also, which decides on the objectives and monitors the performance of the public utilities. The nature of control mechanisms used by the Ministry would influence the strategic behavior of the top management.

The electric utilities are monopolies and hence, they require regulatory control. The regulatory control can be exercised directly by the State or indirectly through another authority (in India, regulatory commissions have been appointed in many States to regulate state electric utilities). The regulatory control would influence the strategic behavior of the top management because it sets the price.

The control process includes the setting of objectives and the evaluations of performance, which depends on the information required to evaluate the performance, the types of control used to evaluate the performance and the reward system to motivate the managers.

The clarity of the objectives set by the Ministry would provide less scope to the managers to manipulate the objectives of the organization. The ambiguity of goals passes on the advantage of a greater discretion to an SOE manager. This problem may be accentuated, if there is a large information gap between the agent and the principal. In the electric utility case, the managers can have high firm specific knowledge because of the technical nature of the industry. The managers can also adopt practices, which result in an inaccuracy of the information. In India, the State asks the public utilities to provide cheaper power to certain types of consumers, which makes the metering economically unviable. But, this system results in inaccurate information about losses in the system. Thus, it provides an incentive to the managers to book these losses (theft in collusion with agents) to un-metered categories of consumers to project a better performance.

The types of control used by the State to evaluate the performance would also influence the strategic behavior of the top management. The types of control could be either behavioral or outcome. Govindrajan and Fisher (1990), based on Ouchi's (1979) model of the ties between task characteristics and control strategy, and a key variable of agency theory, *behaviour's observability*, developed a model to predict the effectiveness of different controls. They predicted that output control would be more effective with high outcome observability, low behavior observability and imperfect task programmability. Therefore, effectiveness of types of control employed by the State would determine the behavior of the top management. In the case of public electric utilities, both the task programmability and behavior observability are low, but the outcomes are measurable. Hence, output control would be more effective.

The incentives to the managers in public sectors are often limited and hence, would not be a determining factor for the strategic behavior of the top management. However, the type of budget constraints, hard or soft, can influence the behavior of the organizations (Majumdar, 1994). In the pubic utility's case, this is more relevant because even if the utilities are not performing, the State can keep on providing funds to them in the form of subsidies or grants, thereby reducing their efforts to improve commercial performance. In India, the State Governments provide balancing subsidies, i.e., the subsidy is a residual amount to reach a fixed financial target. This post-facto balancing subsidy results in utilities not focusing on commercial objectives and moral hazard that the Government will bail them out. In view of these arguments, the following hypotheses can be proposed:

H3a: The higher the specificity of commercial objectives, higher would be commercial orientation of the top management and the higher the specificity of social objectives, higher would be social orientation of the top management

H3b: More the output control for commercial objectives, higher would be commercial orientation of the top management and more the output control for social objectives, higher would be social orientation of the top management

H3c: More the information asymmetry between the State and the public utility, lower would be the social and commercial orientation of the top management

H3d: The harder the budget constraints, higher would be the commercial orientation of the top management

Managers' Values and Belief

For determining the influence of the value system of the managers on the strategic orientation, we define the values of managers, based on the seminal work of Rokeach (1973), and Allport, Vernon and Lindzey (1960). Rokeach (1973) has defined human values as the instrumental and the terminal values. The terminal values are more tangible, while the instrumental values are intangible. The difference in these values will influence the managerial orientation differently. In a study on the managers of a large public utility, Regan, Roleach and Grube (1982) have identified the terminal and instrumental values of the managers. The managers ranked self respect, family security and sense of achievement as their top three terminal values and honest, responsible and capable were the top three instrumental values. Based on the nature of these values, we propose that the managers, who have more terminal values, are likely to be higher on the commercially orientation and the managers who have more instrumental values, are likely to be higher on the social orientation.

Allport, Vernon and Lindzey (1960) have defined six kind of values: theoretical, economic, aesthetic, social, political and religious. For our study, economic, social and political values are more important. Those managers, having high economic values, will have higher commercial orientation. The managers who have high social values would be more socially oriented. The managers who have high political values are more likely to be low on both social and commercial orientation and they would be manipulating the situation to their own advantage only.

Performance

The utility performance would be dependent on the strategic orientation of the top management. The public utility can perform well either on the commercial objectives or on the social objectives. It can also perform well on both type of objectives or on none of them. Figure 9.3 provides a simplistic classification of public utilities, based on their social and commercial performance. If public utility performs well on both social and commercial objectives, then it would be an “excellent” organization. If it performs well only on social objectives, then it would be a “responsive” organization and if it performs well on commercial objectives, then it would be “efficient”. If it does not perform well on either social or commercial objectives, then the organization would be a “deadwood”.

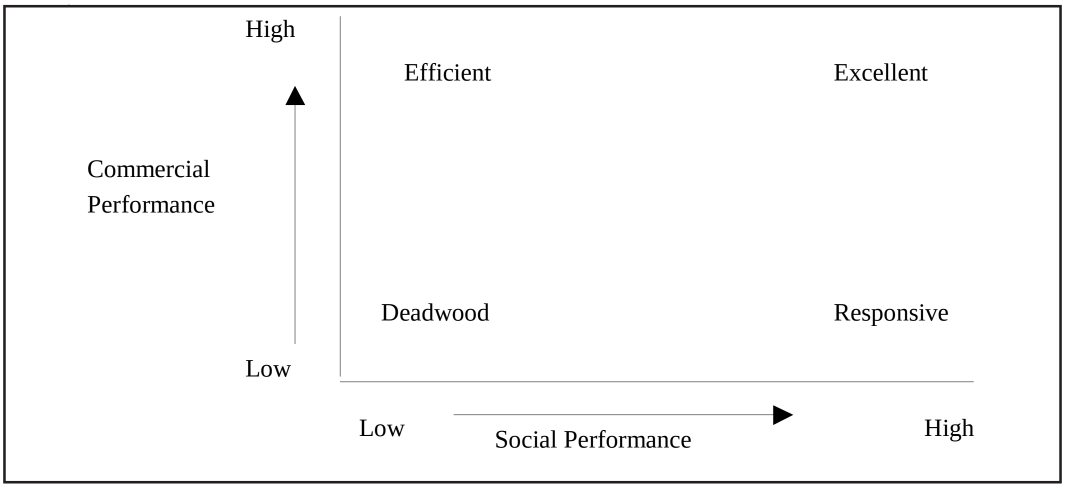

Figure 4: Performance of Public Utilities

If the top management has commercial strategic orientation, then the organization would be more professional and would be internally driven. This organization is likely to ignore the Government's preferences and the political agenda. It would be more concerned with the internal systems and is likely to follow the goal of efficiency. It would achieve higher commercial performance and would be efficient. If the top management has social orientation, then the organization is more likely to exploit its resource dependency on the State, by carving out a domain, in which it has an exclusive right to operate. It will try to satisfy the Government and to garner public support. In this case, the public utility would achieve a higher social performance. If top management's strategic orientation is high on both social and commercial dimensions, then the organization would be proactive. It would try to understand the needs of both the internal and external stakeholders. It will develop shared understandings of the needs of its constituents and will devise policies for action. This type of organization is more likely to follow the goals of both the efficiency and the growth. The goal of growth could not be followed without public support. If the strategic orientation of top management is low on both social and commercial orientations, then the priorities of the organization will keep on changing, depending on the needs of the interest groups. This will result in a lack of clear goals and the organization will focus more on political agendas of the individuals and the groups. The utility will be driven more by individual interests rather than organizational or societal interests. Based on these arguments, we can propose the following hypotheses:

H4a: The higher the commercial orientation of the top management, more efficient would be the public utility

H4b: The higher the social orientation of the top management, more responsive would be the public utility

H4c: The higher the commercial and social orientation of the top management, the public utility would be higher on excellence

H4d: The lower the commercial and social orientation of the top management, public utility would be higher on deadwoodness

In this framework, we have focused only on simple bivariate relationships so far. However, some of the independent variables could also be affected by other independent variables. For example, the resource dependency on the State can also have impact on the control mechanisms used by the State. Effective controls can also reduce the political interventions. The resource dependency on the IFIs can reduce the political interests and can also result in certain control mechanisms, which will influence the strategic orientation of top management towards more commercial orientation. These relationships would also be affected by the moderating variable taken in the framework. For instance, if the beliefs and values of the managers are only to maximize their interests, then even with resource dependency on the IFIs, the public utilities would not be efficient and they will only change the structures and the systems from outside and will decouple them from the actual activities. There are other factors, which we have not considered. For example, if the State is dependent on the IFIs for its own finances, then despite the political interest and resource dependency of the public utility on the State, the State would force the top management of the utility to have a commercial orientation.

Section III

In the first section, we have seen that there are differences in the strategies of the three organizations. PEA was following commercialization strategy; while for MSEB, it was a mix of commercial and social strategies; and in the case of UPSEB, the focus was missing. We have also seen that PEA was the best performer on commercial parameters, MSEB was average and UPSEB was poor. On social parameters, PEA and MSEB were both doing well, but even the UPSEB was doing relatively well. From the previous part, we have seen that if the top management's strategic orientation is high on both social and commercial dimensions, then the organization would be excellent; if it is high only on commercial, then the organization would be efficient; but if it is low on both, then the organization would be a dead wood. Now, we try to find out the difference in the top management' strategic orientation in response to the State pressures and the expectations in these organizations, based on the conceptual framework as proposed in the second section. For this, we analyze the differences in the role of the State for all the three organizations and how it influences the strategic orientation of the top management, based on our hypotheses, proposed in the previous section.

Resource Dependency

PEA is dependent on market and institutions for capital and there is not a single source for these resources. The government has provided equity capital for operations of PEA, along with loans for rural electrification and system improvement works. PEA is not getting any subsidy from the Government. MSEB is getting capital from both the state government and market sources. However, the World Bank provided a loan to MSEB in 1992 and some of current practices in MSEB were started at that time because the World Bank raised certain demands, to be fulfilled by the state government and the MSEB. These demands have resulted in state government allowing MSEB to earn a return of 4.5% by tariff or subsidy. Due to these demands, MSEB started focusing on improving revenue collection as the World Bank wanted MSEB to have only 75 days' receivables. MSEB is also dependent on the state government for subsidies during those years, when it is not able to earn the required return of 4.5%. UPSEB is getting capital resources mostly from the state government as part of annual plan funds. Some commercial lenders are also part of these plan funds. UPSEB finds it difficult to raise capital from the market due to its weak financial position. Recently, the World Bank has agreed to provide capital to UPSEB and has asked for the unbundling of UPSEB. UPSEB is trying to comply with these demands and unbundling have been done, while certain other things are in the process. The categories of resource providers and their average share in the resources provided to these utilities during the last five years are given in the Table 2.

Based on our hypotheses, we can say that strategic orientation of the top management would be high on commercial dimension in PEA, because its financial dependency is high on IFIs. The top management in MSEB would be high on social and medium on commercial dimension because the extent of financial dependency of MSEB on the State and

Table 2 : Resource Dependency of PEA, MSEB and UPSEB

Source	PEA	MSEB	UPSEB
% State	17.76	57.04	80.26
Subsidy (% Revenue)	0.00	3.42	26.82
% DFI	0.00	42.96	19.74
% IFI	82.23	0.00	0.00

DFIs is almost the same. The dependency on the State will result in higher social pressures, while due to involvement of DFIs, it will have medium commercial pressures. In UPSEB, the strategic orientation of the top management would be social because the financial dependency of UPSEB is very high on the State.

Political Interests

The political system during last many years in the state of Uttar Pradesh has been fragmented. The ruling party is not able to get majority since 1992 and it has been a coalition government of more than two parties. In the last few years, there have been even 4 to 5 parties. This results in social interests being subverted to political interests and hence, lot of political interference is felt in the working of UPSEB. Thus, the performance of UPSEB on social parameters is also not good, despite the State being a major resource provider. In the state of Maharastra, in the last few years, the Government has been a coalition of two parties. This would more likely result in social objectives being forced by the Government or the exploitation. Hence, the strategic orientation of the top management in MSEB would be less on commercial but high on social. The Government in Thailand has been stable and hence it will have a mix of social and commercial objectives. This would result in the strategic orientation of the top management in PEA being medium on both social and commercial dimensions.

Control Mechanisms

The commercial objectives are not clear for both the SEBs, but social objectives are clear and are monitored based on the outcomes. The Electricity Supply Act 1948 allows SEBs to decide the tariff to earn a return of minimum 3%, but this objective is not set by the Ministries monitoring SEBs. The specificity of social objectives and output-based control would make the strategic orientation of the top management social in both the SEBs. For PEA, the Government has made both objectives clear and these objectives are part of the corporate plan of PEA. The Government uses output-based control to monitor performance against these objectives. The specificity of commercial and social objectives and output based control for PEA means that the top management's strategic orientation would be high on both social and commercial dimensions.

The soft budget constraint in the form of providing post facto subsidy, either on agriculture consumption (UPSEB) or ROR (MSEB), does not force SEBs to be commercial because they know they will get the subsidy, even if they do not perform. The Government of Thailand is not providing any subsidy to PEA and hence, it is forced to perform well to survive. These factors would result in social orientation of the top management in SEBs and commercial orientation of the top management in PEA.

Due to un-metered supply for many consumers, there is a large information gap between the monitoring agencies and SEBs in India. This gap is more in UPSEB as compared to MSEB because more categories of consumers are un-metered in UPSEB. This provides more discretion to managers to maximize their self-interests in UPSEB, resulting in orientation of the top management low on commercial dimension as compared to MSEB. In PEA, all the consumption is metered and hence, the information gap is less. Due to this, the top management orientation would be high on commercial in PEA.

IV. CONCLUSIONS

In this study, we have seen that all the SOEs are not equally bad. The strategic behavior of the SOEs is dependent on the Government, in terms of resource dependency, control and incentive structure. The relationship between the government and the top management decides the strategic orientation of the top management. Depending upon this strategic orientation, internal system of the organizations will emerge. In the case of a public utility, the top management's strategic orientation could be commercial or social, which will have an impact on the performance of the utility. An organization could be efficient, responsive, excellent or deadwood, depending upon the combination of the commercial and social orientation of the top management. The implications of the study would seem to question the current fashion of dumping the publicly owned organizations ipso-facto as bad and non-performing. The study suggests that public ownership is not a homogeneous concept and good public ownership can significantly influence good performance. Just as the mere existence of stock market is not a guarantee for private sector performance, mere Government ownership without qualifying it, is not a source for its non-performance. Thus, the study makes a case for a relook at the concept of public ownership. The findings of this study also have implications for the Government, mangers of public utilities, and the body of theoretical literature.

The theoretical framework suggested in this study has not been validated and hence, could be validated in future research. The future research could also include other environmental variables and organizational factors, like organization culture. The theoretical framework can also include individual level variables, like perception about delegation of authority, satisfaction and so on. The same framework could also be validated for other public utilities like Water, Gas and Telecom. Most of the public utilities face a similar type of environment and hence, the applicability of this framework for public utilities will provide a generalizability to the framework.

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Organizational Citizenship Behavior : A Review of the Individual and Group Level Antecedents and Consequences*

Ranjeet Nambudiri[1]

Abstract

Organizational Citizenship Behavior (OCB) has been defined as extra-role behavior, which is not performed with the intent of reward and is not formally recognized by the organization and which benefits the organization by improving organizational effectiveness. This paper reviews the literature on OCB and identifies individual and group level antecedents and consequences of OCB. Managerial implications of the review are discussed.

I. INTRODUCTION

Organizations operating in today's highly competitive and uncertain environment are increasingly expecting members to perform beyond the call of their routine responsibility. Work behavior such as this is not measurable through traditional scales of performance, and yet enhances the organizational productivity enormously. Researchers have coined several terms for such behavior, primarily among them being Organization Citizenship Behavior (OCB; Graham, 1991; Organ, 1988), pro-social organizational behavior (Brief & Motowidlo, 1986), extra-role behavior (Van Dyne & Cummings, 1990; in Van Dyne et al., 1994) and organizational spontaneity (George & Brief, 1992). The common point in all these terms is their conceptualization as work behavior that goes beyond regular responsibility and ultimately enhances organizational effectiveness. Smith, Organ & Near (1983) cited Katz (1964), "An organization, which solely depends upon its blue-prints of prescribed behavior, is a very fragile social system." Katz & Kahn (1966; in D'Intino et al., 2002) extended.

Barnard's (1938; in D'Intino et al., 2002) notion of cooperation, into the concept of extra-role co-operative behavior stated that it is "the countless acts of cooperation" that enable the system to function without breaking down. According to Lepine & Van Dyne (2001)

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1. Fellowship (Doctoral) student, Indian Institute of Management, Ahmedabad.
e-mail: ranjeetn@iimahd.ernet.in

organizations rely heavily on employee initiative to be able to compete in the fast-paced and uncertain environment. These ideas were extended into the research of what is today termed as Organizational Citizenship Behavior (OCB).

This interest in extra-role behavior, initiated the research on Organizational Citizenship Behavior (OCB), and in the past 2 decades since Organ's (1977; in Organ, 1988) seminal work, several eminent academicians have investigated this construct.

Organizational citizenship behavior (OCB) has been defined as "discretionary, extra-role behavior, which is not formally rewarded or punished by the organization and which benefits the organization by improving organizational effectiveness" (Organ, 1988). Schnake & Dumler (2003) define OCB as " functional, extra-role and pro-social behavior directed at individuals, groups and the organization."

Smith, Organ & Near (1983), stated that OCBs were important because "they lubricated the social machinery of the organization." Citizenship behavior works like a buffer in situations of emergency or contingency, and fosters a sense of participation among the employees. Interdependence among employees, departments and functions is inevitable within an organization and citizenship behavior facilitates smooth functioning in such a situation through norms of reciprocity and cooperation.

Citizenship behavior cannot be induced by the same incentives that influence people to join and continue in an organization. It is also not enforceable through sanctions because it is largely discretionary and not defined by the formal role or responsibility. Also, most of the acts that are termed as citizenship behavior are governed by individual volition and hence extrinsic motivation is expected to have a negative impact on them. According to Tang & Ibrahim (1998), OCB and intrinsic motivation are similar, in that both are "spontaneous pro-social gestures" that are not generally influenced by organizational reward systems. Essentially, OCBs depend on individual volition and hence may be considered an indicator of the employee's intrinsic motivation level. Tang & Ibrahim (1998) also expect OCB to be impacted by dispositional and organizational work related variables in a manner similar to intrinsic motivation. OCB is posited to have several organizationally relevant outcomes, including enhancement of organizational, group and individual performance.

OCB has been studied through several theoretical foundations. The social exchange theory (Blau, 1964; in Wayne et al., 2002), has often been applied in the organizational context to provide an understanding of the feeling of obligation, reciprocity and pro-social behavior such as OCB. Bolino (1999), stated that OCBs arise from the motivational bases of attitudes and dispositions, and the social exchange theory accounts for most of the acts that can be termed as OCBs. This means that the employees engage in OCBs as a gesture of reciprocation to the organization and it is in the inherent nature of an individual to engage in OCBs. OCBs have also been studied in varied cultural contexts, because it is believed that national culture would have an impact on OCB. Yui-Tim Wong et al. (2002), suggested that Chinese have a stronger sense of obligation and responsibility towards their relationships and are more likely to display OCBs. These findings are interpreted through a different set of antecedents, the foundation of which lie in theories in commitment and loyalty.

Interest in OCB research has increased tremendously over the past few years. Podsakoff et al., (2000) showed that more than 122 studies have examined the concept of OCB during a 6-year period from 1993 to 1998. Most of these studies examined the antecedents and outcomes of OCB. The literature largely focuses on establishing relationships between OCB and other variables, like job satisfaction (Bateman & Organ, 1983), perceived equity or fairness (Farh et al., 1990), leadership (Farh et al., 1990) and organizational commitment (O'Reilly & Chatman, 1986), among other variables.

Another critical issue in the review of OCB literature is the level of analysis. OCB is posited to be a mixed-level phenomenon (Schnake & Dumler, 2003; Podsakoff et al., 2000). Kozlowski & Klien (2000; in Schnake & Dumler, 2003) clarify the issue about level of analysis in organizational behavior research by stating that "in organizational science research, micro phenomena are embedded in macro concepts and macro phenomena often emerge through the interaction and dynamics of lower level elements." This is amply evident in the literature on OCB research. OCB is impacted by certain micro-level variables like job satisfaction (Smith, Organ & Near, 1983), leader supportiveness (Smith Organ & Near, 1983; Wayne et al., 2002) and organizational commitment (O'Reilly & Chatman, 1986) and also group-level variables like work context (Karambayya, 1990; in Schnake & Dumler, 2003) and positive and negative affectivity at both the group and individual level (George, 1989; 1990; 1991). OCB is expected to have both individual and organizational level consequences (Podsakoff et al., 2000). It would hence seem useful to study the antecedents and consequences of Organizational Citizenship Behavior (OCB) at the individual, group and organizational level.

It is the modest attempt of this study to analyze and integrate these various streams of thought linking the antecedents and consequences of OCB at multiple levels. A basic categorization of these antecedents and consequences is also presented in this paper.

II. SCOPE OF THE PAPER AND STRUCTURE OF ANALYSIS

It has been proposed to review the literature on organizational citizenship behavior (OCB) and identify antecedents and consequences of OCB. The antecedents and consequences of OCB will be classified as follows,

- Individual level antecedents and consequences of OCB
- Group level antecedents and consequences of OCB

The paper will begin by understanding the conceptualization of OCB through its various definitions and a review of the theoretical foundations of which OCB research is based. This will be followed by an examination of the issues in OCB research, specifically understanding OCB as a multiple-level phenomenon. The literature is reviewed to initially identify individual and group level antecedents of OCB followed by a categorization of the antecedents. Similarly, outcomes or consequences of OCBs will be identified at the individual and group level. Demographic variables have not been considered in this review. The reason for this omission being that demographic variables are ubiquitous in an organizational setting and analyzing the effect of changes in demographic variables is beyond the scope of this review. It is however noted that demographic variables like age, educational level, position in the hierarchy and ordinal birth position do effect the probability of citizenship behavior. For instance, a review by Gregen et al. (1972; in Smith, Organ and Near, 1983), showed that educational level was positively correlated with general social responsibility, while Hansson et al. (1978; in Smith, Organ and Near, 1983) proved empirically that people from a rural background or from smaller towns were more likely to display citizenship behaviors. The managerial implications of these antecedents and consequences are discussed.

III. THEORETICAL FOUNDATIONS FOR OCB

Organizational citizenship behavior is rooted mainly in the social exchange perspective and its norms of reciprocity (Gouldner, 1960; in Smith, Organ & Near, 1983). Much of the altruism literature also leads to an understanding of citizenship behavior Theories of commitment and loyalty are also believed to have an impact on OCBs. D'Intino et al. (2002) has used the communitarian perspective (Rousseau, 1762; in D'Intino et al., 2002) to emphasize the criticality of community and collective priorities. This perspective favors sacrifice of individual priorities in the larger interest of the collective. Similarly, loyalty, which is a type of citizenship behavior is expected to be associated very strongly with the communitarian perspective. It would, hence be worthwhile to explore the different theoretical foundations on which OCB is based.

The Altruism Perspective

Most acts of citizenship are altruistic in nature and understanding the predictors of altruism would be beneficial while exploring OCBs. Smith, Organ & Near (1983) cite several studies (Berkowitz & Connor, 1966; Isen, 1970; Isen & Levin, 1972; Levin & Isen, 1975) to show that mood state impacts pro-social behavior. People were more likely to display altruistic behavior in a positive state of mind. It was proposed that since job satisfaction was an indicator of positive mood, it would determine the extent of citizenship behavior shown by the employee.

Social Exchange Theory

The social exchange perspective is one of the dominant theories used to explain OCB. According to this perspective OCB is a form of behavioral reciprocation the root of which lies in the concept of social exchange (Blau, 1964; in Wayne et al., 2002) and the norm of reciprocity (Gouldner, 1960; in Smith, Organ & Near, 1983). The key component of social exchange that affects citizenship behavior is the norm of reciprocity. Blau (1964; in Wayne et al., 2002) and Gouldner (1960; in Smith, Organ & Near, 1983), suggested that individuals who receive favors or help are obligated to repay the favor in a similar manner. This sense of indebtedness is a strong determinant of citizenship behaviors like organizational loyalty and helping behavior. The sense of indebtedness could be towards the supervisor or a peer member or towards the organization in general. Employees who perceive high levels of organizational support or who have excellent social exchange with the leader or supervisor, feel a sense of obligation and are more likely to reciprocate by displaying citizenship behaviors. Cropanzano et al. (2003) have also based their model of OCB on the social exchange perspective. According to this viewpoint social exchange relationships involve the transfer of social and emotional benefits and usually lead to intimate personal association. There is also evidence to show that individuals who are part of a social exchange relationship with the organization display higher on-the-job performance and more citizenship behavior (Hendrix et al., 1998). Also, social exchange relationships tend to increase the sense of identification with the organization and lead to a higher level of OCBs (Bishop & Scott, 2000). Stamper & Van Dyne (2001) extended the social exchange perspective in their study on the varying levels of OCB in part-time and full-time workers. There is evidence to show that part-time workers develop economic exchange relationships with the organization and not social exchange relationships. Part time workers were unlikely to get the same status, exposure, responsibility and training as full-time workers and hence would have a lower probability of displaying OCB. Moreover, organizational expectations from part-time workers tend to be lower than those from full-time workers and this led to lower contribution from the part-time workers (Tsui et al., 1995; in Stamper & Van Dyne, 2001).

In summary, the social exchange theory leads to the viewpoint that the employees who experience a favorable social exchange with the organization or its representatives are likely to reciprocate by displaying organizational citizenship behavior. Thus, explanations of citizenship behavior clearly rest on foundations of the social exchange perspective.

Commitment and Loyalty Perspectives

Organizational commitment has been found to impact workplace behavior and employee job performance (Becker, 1992; in Yui-Tim Wing et al., 2002). Becker et al. (1996; in Yui-Tim Wong et al., 2002), developed a scale of commitment to the supervisor based on identification and internalization. There was evidence to show that commitment to the supervisor had a positive impact on workplace behavior. However, commitment to the supervisor was more correlated with in-role behavior than organizational commitment. Nonetheless, this serves as a good starting point for researchers in OCB. Gregersen (1993; in Yui-Tim Wong et al., 2002) showed that commitment to the supervisor was also significantly correlated with extra-role behavior. These findings lead to the notion that commitment is positively correlated with OCBs.

Communitarian Beliefs

D'Intino et al. (2002) based the understanding of acts of loyalty, advocacy participation and social participation on the communitarian perspective. The communitarian perspective was founded in Rousseau's (1762 / 1987; in D'Intino et al., 2002) philosophy of emphasis on the collective priority over individual desires. It was proposed that employees who follow communitarian beliefs are more likely to display citizenship behaviors. The communitarian beliefs were contrasted with individualistic beliefs by measurement of "sources of self-fulfillment and normative roles for government welfare."

Thus, the theoretical foundations of OCB literature have several varying perspectives and this leads to the varying opinions about antecedents of OCB. The following sections will look at definitions of OCB, explore the issues of analysis in OCB literature, identify different antecedents of OCB and examine the research evidence supporting these antecedents. Consequences of OCB will be similarly reviewed.

IV. DEFINITION AND OPERATIONALIZATION OF ORGANIZATIONAL CITIZENSHIP BEHAVIOR (OCB)

Organizational citizenship behavior is defined as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization. By discretionary, it is meant that the behavior is not an enforceable requirement of the role or the job description, that is, the clearly specifiable terms of the person's employment contract with the organization; the behavior is rather a matter of personal choice, such that its omission is not generally understood as punishable"

(Organ, 1988). Later, Organ (1997) redefined OCB to exclude the clauses of OCB as being discretionary and non-rewarded. This redefinition however, has not been widely recognized and accepted. Most of the literature in OCB has been based on the original definition proposed by Organ (1988). Motowidlo (1999) considered the redefined version of OCB to be similar to what was termed as "contextual performance." OCB has also been described as "constructive or cooperative gestures that are neither mandatory in-role behaviors nor directly or contractually compensated by formal reward systems"(Organ & Konovsky, 1989). This review is based on the original definition proposed by Organ (1988).

Dimensions of OCB

OCB can be operationalized in several ways and includes workplace behavior that go beyond the realm of regular responsibility and are not dictated by organizational policy. Meyer & Allen (1997; in Yui-Tim Wong et al., 2002) state that OCB includes acts like providing extra help to co-workers, volunteering for special activities, being punctual, helping those who are new in the organization and participating in problem solving.

The OCB literature has identified 5 dimensions of OCBs, viz. Altruism, Conscientiousness, Civic virtue, Sportsmanship and Courtesy (Schnake & Dumler, 2003). Stamper & Van Dyne (2001) have also used the dimension of voice in analyzing the antecedents of OCB.

Altruism: This refers to the acts of helping others voluntarily. These acts are directed at a specific beneficiary and generally benefit the organization.

Conscientiousness: This dimension of OCB has also been referred to as "generalized compliance" (Smith, Organ & Near, 1983) and refers acts that are not directed at any specific beneficiary, but which benefit the organization as a whole. So while, helping out a colleague in meeting the deadline may be termed as an act of altruism, punctuality is an act of generalized compliance.

Civic Virtue: Civic virtue refers to the "responsible participation in organizational processes"(Schnake & Dumler, 2003). This would indicate acts of participation in organization-wide meetings and activities.

Sportsmanship: Sportsmanship is evident in employees who exhibit a higher degree of tolerance to inconveniences and hardships, because of a sense of identification with the organization. Typically, this would mean working late hours if required without complaining.

Courtesy: Acts of courtesy include information sharing and dissemination to facilitate smooth working for co-workers.

Voice: Most of the OCB literature uses the above five dimensions while examining the construct. Stamper & Van Dyne (2001) focused on the two behaviors of helping and voice because they contrasted each other. While helping behaviors were classified in a manner similar to the other literature (Organ, 1988), voice referred to change-oriented acts, which were constructive in nature.

Besides this D'Intino et al., (2002), has conceptualized OCB in terms of the dimensions of loyalty, advocacy participation and social participation. The dimension of loyalty has been already been clarified earlier. Advocacy participation refers to acts of "innovative action and maintaining high organizational challenges and voicing opinion". This dimension is quite similar to the dimension of voice proposed by Stamper & Van Dyne (2001). Social participation is similar to the dimension of civic virtue.

Types of OCB

Podsakoff et al., (2000), have identified 7 widely acknowledged types of OCB during their meta-analytic review of the construct. The 7 types of OCB identified are (1) Helping behavior, (2) Sportsmanship, (3) Organizational loyalty, (4) Organizational compliance, (5) Individual initiative, (6) Civic virtue and (7) Self-development.

Helping behavior: Helping behavior is almost universally accepted as an act of citizenship behavior. Voluntary acts aimed at helping others or overcoming workplace problems can be considered acts of citizenship. Helping behavior is analogous to the dimension of altruism, in that, it is a voluntary act targeted at a specific beneficiary. This has also been interpreted in several ways in the OCB literature. Helping behavior was classified as altruism by Organ (1988), interpersonal helping by Graham (1989; in Podsakoff et al., 2000), OCB-I by Williams & Anderson (1991), and interpersonal facilitation by Van Scotter & Motowidlo (1996; in Podsakoff et al., 2000). Factor analysis has shown that all these forms of helping behavior can be loaded onto a single factor (MacKenzie et al., 1993; in Podsakoff et al., 2000).

Sportsmanship: This refers to the OCB dimension of sportsmanship and research has shown this dimension to have a distinct set of antecedents (Podsakoff et al., 1996b; in Podsakoff et al., 2000).

Organizational Loyalty: These are essentially acts of loyalty towards the organization and may include acts like defending the organization repute and supporting the organizational objectives.

Organizational Compliance: This dimension of OCB essentially refers to the sense of identification that an employee has with the organization and would include acts like acceptance of the rules and regulations of the organization without monitoring.

Individual Initiative: Acts that benefit the organization and are performed by individual volition are generally classified as individual initiative. Creative problem solving is an appropriate illustration of individual initiative. This dimension is quite similar to the dimension of conscientiousness proposed by Organ (1988).

Civic Virtue: This dimension has already been proposed by Organ (1988) and refers to commitment to the organizational cause in general.

Self-development: Self-development is a relatively unknown dimension of OCB. George & Brief (1992) proposed this dimension and included acts aimed at enhancing one's own ability. Such acts are believed to have a favorable impact in enhancing organizational effectiveness. It has to be mentioned, though that empirical support for this dimension is still unavailable in the OCB literature.

Scales for measuring OCB

Several scales have been developed to measure OCB based on the operationalization of the construct, some of which have been discussed in this paper.

Most studies use variations of the scale developed by Smith, Organ & Near (1983). Schappe (1998) used one such variation that having three items each measuring altruism (e.g. "I help others who have heavy workload") and generalized compliance (e.g. "I do not take unnecessary time off work"). Responses were taken in a 5-point Likert type scale and indicated the respondent's extent of agreement with the statement. The scale had a reliability estimate of 0.69. A similar scale based on Smith, Organ & Near's (1983) scale was used by Shore et al. (1995), with 7 items measuring altruism (Cronbach a = 0.88), and 9 items measuring generalized compliance (Cronbach a = 0.87). Cropanzano et al. (2003) tested the effect of emotional exhaustion on OCB and used Williams & Anderson's (1991) scale to measure OCBO, or OCB towards the organization. OCBS or OCB towards the supervisor was measured by a 5-item scale developed by Malatesta (1995; in Cropanzano et al., 2003). Using these measures supervisors rated subordinates on OCBO, OCBS and job performance. D'Intino et al. (2002) measured the OCB dimensions of loyalty, advocacy participation and social participation using the scale developed by Van Dyne et al. (1994). This scale measured OCB towards organization through a 7-item scale (e.g. "I participate in activities that are not required but help the image of the organization").

It is then clear that most of the scales of OCB have been developed around the five dimensions of altruism, conscientiousness, civic virtue, sportsmanship and courtesy.

OCB as a multiple level phenomenon

It is evident from the literature that OCB is a multiple level phenomenon. While there are theories that have identified individual level antecedents of OCB like job satisfaction (Smith, Organ & Near, 1983), leader supportiveness (Smith, Organ & Near, 1983; Wayne et al., 2002) and organizational commitment (O'Reilly & Chatman, 1986) several others have identified group level variables like work context (Karambayya, 1990), positive and negative affectivity at both the group and individual level (George, 1989; 1990) and group level prosocial behavior and group cohesiveness (George & Bettenhausen, 1990; in Schnake & Dumler, 2003) as OCB antecedents. Xiao-Ping Chen et al., (2002), conceptualized group OCB (GOCB), as a "distinct group level phenomenon concerning the extent to which the work group as a whole engages in OCB." Kidwell et al. (1997) conducted a rare multiple level analysis where cohesiveness was taken at the group level while job satisfaction, organizational commitment and OCB were measured at the individual level. The finding proved conclusively that employees who were part of a cohesive group displayed more OCBs. Organ (1988) suggested that OCB impacts organizational effectiveness, an organizational-level phenomenon. The issue that needs to be tested is whether OCB as an individual level phenomenon affects organizational effectiveness or OCB as an "aggregate phenomenon" impacts organizational effectiveness.

OCB literature then, can be deemed an excellent case for a 'meso' level analysis (House et al., 1995; in Schnake & Dumler, 2003), which integrates micro and macro perspectives. Antecedents and consequences of OCB can be presented at three levels viz., individual level, group level and cross-level or mixed level. The final model, i.e. cross-level analysis would examine relationships between constructs at different level of analyses.

Some issues in OCB research

One of the key issues in mixed level research is that of the effects of time (Klein & Kozlowski, 2000; in Schnake & Dumler, 2003). While individual level phenomena tend to have an immediate impact on the dependent variable, higher level phenomena are seen to take a longer time in exerting influence. For instance, a leader's directive will take longer to be implemented by the group as a whole though individual followers will implement the same almost immediately. Van Dyne et al. (1995; in Podsakoff et al., 2000) have also observed that research in OCB has focused more on establishing relationships between OCB and other constructs, i.e. substantive validity, and not centered so much on understanding the construct itself. Moreover the proliferation of OCB literature focusing on substantive validity (Schwab 1980; in Podsakoff et al., 2000) means that it has become difficult to track developments in the area. While it is beyond the scope of this paper to address the issues in OCB research, it is hoped that future research would clarify some of these issues.

V. ANTECEDENTS OF ORGANIZATIONAL CITIZENSHIP BEHAVIOR (OCB)

Individual Level Antecedents of OCB

Smith, Organ & Near (1983) in one of the pioneering works on OCB had proposed workplace environment and personality variables predicted OCB through the effect of job satisfaction. Workplace environment included factors like leader supportiveness while personality variables referred to traits such as neuroticism. Subsequent literature has looked at perceived organizational support, POS (Wayne et al., 2002), organizational commitment (Wayne et al., 2002; Yui-Tim Wong et al., 2002; Alotaibi, 2001; Schappe, 1998; Podsakoff et al., 2000; Shore et al., 1995), perceptions of organizational justice (Wayne et al., 2002; Alotaibi, 2001; Schappe, 1998; Podsakoff et al., 2000), job congruence (Vigoda, 2000), personality variables like self-esteem (Tang & Ibrahim, 1998), agreeableness (Lepine & Van Dyne, 2001), leader behavior (Wayne et al., 2002; Podsakoff et al., 2000; Tang & Ibrahim, 1998) and job attitudes or workplace values (Van Dyne et al., 1994) as antecedents of OCB. In a critical meta-analytic review of OCB Podsakoff et al. (2000) have identified and categorized antecedents and consequences of OCB. Individual level antecedents are discussed in detail.

Job Satisfaction

Bateman & Organ (1982; in Smith, Organ & Near, 1983) showed that job satisfaction was correlated with citizenship behavior. However, the study was methodologically inadequate owing to the insignificant cross-lagged correlation. Smith, Organ & Near (1983) in their seminal work on OCB found job satisfaction to have a correlation of 0.31 with altruism. In another study, Organ & Konovsky (1989) propose that job satisfaction is among the strongest correlates of OCB. In a meta –analytic review Organ & Ryan (1995) showed that job satisfaction was a significant predictor of OCB. Schappe (1998) tested job satisfaction as a predictor of OCB. Job satisfaction was measured through the Minnesota Satisfaction Questionnaire (MSQ; Weiss et al., 1967; in Schappe, 1998), which measured the extent to which the work environment satisfied the individual's expectations. However, the results did not support the proposition that job satisfaction explained unique variance in OCB. Alotaibi (2001) in a study conducted with public personnel in Kuwait has proposed that the correlation between job satisfaction and OCB depends on the nature of job satisfaction measure. Cognitive satisfaction is expected to explain variance in more dimensions of OCB than affective satisfaction. Alotaibi (2001), developed a 19-item scale to measure job satisfaction and gave evidence that job satisfaction was significantly correlated with OCB. However, it was also seen that when procedural justice perceptions were held constant, job satisfaction was no longer a significant predictor of OCB. This result can also be attributed to the nature of job satisfaction measure, which looked more at affective satisfaction rather than cognitive satisfaction. It can be hence concluded that while job satisfaction is indeed a predictor of OCB, it often fails to explain unique variance in OCB and may not be as significant as other antecedents like commitment and procedural justice perceptions.

Organizational Justice perception

Organ & Konovsky (1989), note that when employees perceive fairness on part of the organization they are likely to reciprocate with citizenship behavior. Empirical evidence for the relationship between justice perceptions and OCB are available in the literature (Farh et al., 1990). Moorman (1991) found support for the relationship between procedural justice and 4 dimensions of OCB, viz., altruism, conscientiousness, courtesy and sportsmanship. Moorman et al. (1993; in Schappe, 1998) also reported similar results using a structural-equations model. Schappe (1998) examined procedural justice perceptions as a predictor of OCB, where procedural justice was measured using a 19-item 7-point Likert type scale. This study considered the three antecedents, job satisfaction, procedural justice perceptions and organizational commitment together and results showed that only organizational commitment emerged as a significant predictor of OCB. However, when considered in isolation, procedural justice perceptions were found to impact OCB significantly. Alotaibi (2001) tested the relationship between perceptions of procedural and distributive justice on OCBs and found that while both procedural and distributive justice perceptions correlate with OCB, procedural justice perceptions show the stronger correlation.

Organizational Commitment

Organizational Commitment, has often been posited to be among the dominant predictors of OCBs. Meyer & Allen (1997; in Yui-Time Wong et al., 2002) noted that employees with a strong affective commitment were more likely to display citizenship behaviors. Shore et al. (1995) developed a model testing the impact of OCB on manager-rated affective and continuance commitment. It was seen that OCB was significantly correlated with manager-rated affective commitment. Schappe (1998) has shown that organizational commitment explains unique variance in OCB even in the presence of job satisfaction and procedural justice perceptions. Alotaibi (2001) regressed organizational commitment, measured through a 15-item scale developed by Porter et al. (1974; in Alotaibi, 2001) with OCB and found that organizational commitment was correlated with OCB at the individual level. These findings support the dominant role of organizational commitment as an antecedent of OCB.

Personality variables

Tang & Ibrahim (1998) argued that employees join jobs with dispositions that do not change easily. Citing Staw et al. (1986) they note that variables like intrinsic job satisfaction are based on dispositions and are more or less stable in nature. OCBs are hence predicted through dispositional variables.

Negative affect / positive affect

George (1989) , showed that positive affect could influence attendance at work, which can be classified under the OCB dimension of generalized compliance or conscientiousness. Positive affect was also found to be positively correlated with altruism. Van Dyne et al. (1994) have also suggested that positive job attitudes have a significant impact on citizenship behavior. The three citizenship dimensions conceptualized for this study are loyalty, obedience and participation. Empirical evidence supported the role of positive workplace attitude in predicting loyalty and obedience, but not participation.

Agreeableness

Agreeableness is a Big 5 personality trait that describes “the extent to which individuals are trusting, straightforward, altruistic, complaint and tender-minded” (Costa et al., 1992; in Lepine & Van Dyne, 2001). Lepine & Van Dyne (2001) have used the attributional model to suggest that peer observers will feel higher levels of empathy for co-workers who have high agreeableness and this will lead to more acts of helping in case of low performance. This was a conceptual paper and the proposition needs to be tested empirically before it can be concluded that the personality trait of agreeableness could be a cause for OCB.

Extraversion and Neuroticism

Extraversion tends to be positively associated with pro-social behavior in most of the OCB literature. Krebs (1970), suggested that extraverts tend to be more comfortable with their social environment and this leads to more frequent acts of co-operation and helping. On the other hand, those prone to neuroticism tend to remain pre-occupied in their own problems and are seen to be emotionally unstable, thus are less likely to display OCBs. Smith, Organ & Near (1983) found results that suggested that neuroticism was only indirectly related to altruism through job satisfaction.

Self-esteem

Self-esteem (SE) has been defined as a “global evaluation of the self” (Norman, 1953; in Tang & Ibrahim, 1998) and is considered a stable disposition. Tang & Ibrahim (1998) posit that OCBs are performed beyond the call of regular duty and may be responsible for making one’s own job difficult. Hence, those with high SE are more likely to indulge in OCBs. In a study conducted with respondents from USA and the Middle East, Tang & Ibrahim (1998) found that SE was a predictor of altruism and generalized compliance in the Middle Eastern sample but not the American sample. This variance could be attributed to cultural differences in the two samples.

Organization-based self-esteem (OBSE)

OBSE has been defined as “the degree to which organizational members believe that they can satisfy their needs by participating in roles within the context of the organization.” (Pierce et al., 1989; in Tang & Ibrahim, 1998). Tang & Ibrahim (1998) found that OBSE was a strong predictor of both altruism and generalized compliance and this result was also evident across samples from USA and the Middle East. Since OBSE involves having a good image of oneself and the organization one works for, it is likely that this feeling enables employees to perform beyond regular role responsibility.

Need for Achievement n-ACH

Puffer (1987; in Tang & Ibrahim, 1998), stated that "achievement-oriented individuals appear to actualize their need to excel by performing tasks outside their focal tasks that benefit the organization. n-ACH, then seems to be a significant predictor of OCB. Tang & Ibrahim (1998) found that n-ACH was positively correlated to altruism.

Workplace values

Workplace values refer to values that are sanctioned by the organization and lead to identification with the organizational philosophy. Van Dyne et al. (1994) have proposed that perceptions of a socially desirable workplace will positively impact loyalty and obedience to the organization. This is also relatively unmapped terrain as far as OCB research is concerned and the operationalization of workplace values is also a little ambiguous and hence it does not seem appropriate to draw conclusions from a single study.

Communitarian belief

D'Intino et al. (2002) conducted a study to evaluate the impact of communitarian beliefs on OCB. Belief structures were measured using a new instrument called the individualist-communitarian beliefs preferences survey. Communitarian beliefs involve giving precedence to the larger cause over individual desires. It would seem natural to believe that people who prefer communitarian beliefs over individualist ones are more likely to exhibit OCB. The two dimensions of communitarian beliefs included fulfillment and orientation towards communitarian welfare. Results showed moderate support for the prediction of loyalty through communitarian beliefs. However, the OCB dimensions of advocacy participation and social participation were strongly associated with communitarian belief structures. Being a pioneering work, it has been suggested that the findings be validated through studies with a larger sample and across national cultures.

Job congruence

Vigoda (2000) studied the moderating effect of organizational politics on the relationship between job congruence and OCB. Job congruence has been defined as "the basic compatibility of an employee with the workplace and specific job" and comprises the two dimensions of (1) met expectations (ME) and (2) person-organization fit (POF). It is proposed that employees who have a better fit tend to develop positive perceptions towards the workplace and display more citizenship behavior. Job congruence is predicted through variables like workplace autonomy, advancement opportunity, and interaction with co-workers. This is a relatively unexplored proposition and may need further examination before unequivocal conclusions are made.

Job characteristics

Task interdependence

Task interdependence is believed to significantly affect citizenship behavior. Smith, Organ & Near (1983) note that employees who are part of work groups characterized by interdependent tasks are more likely to display citizenship behavior. The inevitable need to co-operate with others in such a work setting leads to OCBs. However, the empirical evidence showed that task interdependence was not correlated directly or indirectly through job satisfaction to either altruism or generalized compliance.

Job related stress and Emotional Exhaustion

These two variables are not direct predictors of OCB, but are correlated negatively with it. It is deemed important to discuss some of the literature available on this relationship. Tang & Ibrahim (1998) explored the predictive effect of job related stress on OCB, through a study conducted with respondents from USA and the Middle-East. As expected OCB was negatively correlated with work related stress. Since, the feeling of stress can also be associated with negative affect and neuroticism, this finding appears consistent with previous literature. Cropanzano et al. (2003) in a seminal work on the impact of emotional exhaustion on OCB, posited that emotional exhaustion would be negatively correlated with both OCBS (OCB towards the supervisor) and OCBO(OCB towards the organization). It is argued that jobs, which produce emotional exhaustion are likely to violate the conditions of social exchange and hence would have a negative effect on OCB. It was found that emotional exhaustion was predictive of OCBO beyond the effect of demographic variables like age and gender. However, the effect on OCBS was relatively insignificant. This can be explained through the impact of leader support.

Contingent employment and workplace status

Contingent employees are essentially limited by the contract duration and are not normally contracted for longer periods of time. This condition should then violate the social exchange perspective and hinder the emergence of a reciprocal relationship. Coyle-Shapiro & Kessler (2002) have proposed that contingent employees are less likely to exhibit OCBs. It was found that as expected contingent employees had a less favorable view of the social exchange and hence had less positive attitudes about the organization and this led them to bypass extra-role behavior. Stamper & Van Dyne (2001) examined the citizenship behaviors of part-time employees with full-time employees and found that part time employees exhibited lower levels of OCB. However, there were situations where individuals preferred part-time employment, for instance working mothers or students. In such situation the preferred status of part-time employment moderated the negative impact on OCB.

Perceived organizational support

Wayne et al. (2002) examined perceived organizational support (POS) as a predictor of OCB. There was evidence to show that POS was positively correlated to the OCB dimension of altruism. It is argued that since POS creates a feeling of obligation towards the organization, it is likely to be reciprocated through acts of altruism.

Fulfillment of psychological contract

It is believed that a significant proportion of employees experience a breach of psychological contract at some point in time. Psychological work contract has been explained by Levinson et al. (1962; in Coyle-Shapiro & Kessler, 2000) as "a series of mutual expectations of which the parties to the relationship may not themselves be dimly aware but which nonetheless govern their relationship to each other." This indicates that the psychological contract is more in the nature of spirit and is normally unwritten. It is proposed by Coyle-Shapiro & Kessler (2000) that fulfillment of psychological contract by the employer will impact the employees OCB positively. The three factors of psychological contract were transactional obligations, training obligations and relational obligations. Measures were developed to assess the fulfillment of contract and the discrepancy between fulfillment and breach. Empirical support was found for the role of psychological contract fulfillment as a predictor of OCB.

Leader behavior

Leader supportiveness is one variable that has often been investigated as an antecedent of citizenship behavior. Smith, Organ & Near (1983) state that "supervisor consideration itself is citizenship behavior, i.e. discretionary acts aimed at helping others." This means that the supervisor serves as a model for the employees, who in turn would try to emulate the supervisor's acts of helping. Moreover, the leader's support is often the origin of a social exchange relationship between the leader and follower. This relationship is manifested through citizenship behavior owing to norms of reciprocity. Smith, Organ & Near (1983) found evidence that leader supportiveness was indirectly correlated to the OCB dimension of altruism through job satisfaction, with the multiple correlation of 0.40. However, leader supportiveness was directly correlated to the OCB dimension of generalized compliance, with a multiple correlation of 0.36, without any mediational effects of job satisfaction. Tang & Ibrahim (1998) also examined the impact of leader support and found that supportive acts from the leader were responsible for citizenship behavior from the employees. Wayne et al. (2002) investigated the correlation between Leader-Member Exchange (LMX) and employee attitudes, specifically OCB. LMX was not found to be significantly correlated to altruism. However, it is believed that the dimension of sportsmanship is more likely to be impacted by LMX, since this dimension tests the identification with the organization and its representatives.

Group level and higher level antecedents of OCB

Xiao-Ping Chen et al., (2002) suggested that group organizational citizenship behavior (GOCB), was similar to other team models and is expected to increase coordination and cohesiveness among group members and promote performance of the group. GOCB, it is suggested, results from "inter-individual and inter-group". Antecedents of GOCB are now discussed.

Organizational Justice Climate

Xiao-Ping Chen et al., (2002) proposed that organizational justice climate influences GOCB positively. Organizational justice perceptions enhance trust in the organization and subsequently enhance the level of OCB within the group.

Personality Traits

Positive affectivity and negative affectivity at the group level

George (1989) tested the effect of positive affectivity at the group level, on OCB and found that positive affect had a positive correlation with both altruism and generalized compliance, at the group level. WABA analysis facilitated demonstration of individual as well as group level effects. Individual measures of positive and negative affectivity were aggregated while employee self-ratings of OCB were measured at the group level and aggregated for purpose of analysis. Xiao-Ping Chen et al. (2002) supplemented the above finding through a study conducted with respondents who had worked as members of groups.

Leader behavior

George & Bettenhausen (1990; in Schnake, 2003) measured leader's positive mood and analyzed it at the group level, by proposing that the leader's mood was representative of the group mood. The leader's mood had significant positive correlation with prosocial behavior. Xiao-Ping Chen et al. (2002) in one of the pioneering works on GOCB, suggested that group perception of leader support is positively related with GOCB. It is believed that supportive leaders are thought of as considerate and this perception allows them to gain the trust of members. This trust in turn leads the members to display citizenship behavior and loyalty to the leader. In the study administered with 71 part-time MBA students who had all been part of a team, evidence was found supporting the role of group perception of leader support as an antecedent of GOCB.

Group Cohesiveness

George & Bettenhausen (1990; in Schnake, 2003) also measured group cohesiveness and found it to be significantly positively correlated with OCB. Xiao-Pig Chen (2002) regressed group cohesiveness in GOCB and found support for the role of group cohesiveness as an antecedent of GOCB.

Commitment to the supervisor

Commitment to the supervisor itself is a manifestation of citizenship behavior. It is expected that this would impact the "aggregate OCB level" within the organization. Yui-Tim Wong et al. (2002) conducted a study with 295 employees and their immediate supervisors in the Chinese context. They gave evidence that employees with higher levels of commitment to the supervisor will positively influence the level of OCB in the organization.

VI. CONSEQUENCES OF ORGANIZATIONAL CITIZENSHIP BEHAVIOR (OCB)

Podsakoff et al., (2000) have identified outcomes of OCB, primary among them being, worker productivity, managerial productivity, organizational ability and stability of organizational performance or organizational effectiveness. The literature has been relatively quieter about the consequences of OCB as compared to the antecedents of OCB.

Performance rating

It is often hypothesized that the positive consequence of OCB is likely to benefit the individual displaying the behavior. Avila et al. (1988) conducted a study with computer sales-persons and found that 48% variance in performance evaluation was uniquely attributable to OCB. MacKenzie et al ., (1991) measured OCB and individual performance and found that OCBs predicted supervisor ratings of performance. Podsakoff et al. (2000) in their meta-analytic review showed that OCB uniquely contributed 42% of the variance in employee performance appraisal and together with objective performance, it explained 61% of the variance in performance ratings. Wayne et al (2002) also tested the impact of OCB on managerial ratings of employee performance and found that supervisors indeed value OCBs and tend to use them as a measure while evaluating employee performance.

Individual performance

Commitment to the supervisor is expected to be a strong predictor of in-role behavior. Tsui & Farh (1997; in Yui-Tim Wong et al., 2002) developed a 5-dimension, 17-item scale to measure loyalty to the supervisor in a Chinese context. It was seen that loyalty to the supervisor positively influenced the in-role performance of the employee. A similar study by Chen et al (1998) also showed loyalty to the supervisor to be strongly positively correlated with individual performance of the employee. Yui-Time Wing et al., (2002) followed up these studies with similar results.

Organizational performance or effectiveness

Podsakoff et al. (2000) cite Podsakoff & MacKenzie (1997) and suggest that OCBs contribute to organizational performance in the following manner,

- Enhancing co-worker productivity
- Enhancing managerial productivity
- Free resources for more productive use by the organization
- Reduce the need to devote scarce resources for maintenance functions
- Enhance the organizations ability to employ the best talent
- Improve the stability of organizational performance, and
- Improve the ability of the organization to tackle changes in the environment

Karambayya (1990; in Podsakoff et al., 2000) found that employees of high performance work units were categorized by higher level of OCBs. Schnake & Hogan (1995; in Schnake & Dumler, 2003) measured OCB and organizational effectiveness, where top executives were asked to rate the frequency of OCB seen and general organizational effectiveness. Financial performance of the firms was also taken as an objective benchmark of organizational performance. OCB was seen to have a definite impact on organizational performance, although the measures used are deemed to be slightly subjective. Walz & Nierhoff (1996) measured OCB through employee ratings and found several dimensions of OCB to be positively correlated with organizational effectiveness.

Group Level Consequences

Work Group Performance

Xiao-Ping Chen et al., (2002) studied GOCB as a distinct construct and shown that GOCB is positively correlated with group performance. This finding can be explained through the higher level of co-operation and trust within the group members. Bolino (1999) in his conceptual paper comparing OCB with impression management strategies, has referred to work group performance as one of the outcomes of OCB. It has been suggested that OCBs are positively related to both workgroup and organizational performance. Literature supports this perspective.

VII. SOME OTHER PERSPECTIVES ON OCB

Covenantal relationship with the organization

Van Dyne et al., (1994) studied the mediational effect of covenantal relationship with the organization on the relationship between OCB and its potential moderators like job attitudes, workplace values and demographic variables like tenure and position in the hierarchy. It was hypothesized that covenantal relationships will be positively correlated with OCB. This argument was also based on the norms of reciprocity. It is argued that covenantal relationships have an effect beyond traditional affective states like satisfaction and commitment. It is beyond the scope of this paper to examine this school of thought and it is suggested that avid followers of OCB literature may refer the reconceptualization of OCB proposed by

Van Dyne et al., (1994) in order to examine the mediational effect of covenantal relationships on OCBs.

Generalizability of findings across cultural contexts

Paine & Organ (2000) conducted a small survey across 26 countries to test the applicability of OCB literature across cultures. This is an important contribution because it has often been suggested that the context within which the individual and organization operate could significantly impact the occurrence of OCBs (George & Jones, 1997). Farh et al. (1997) used a Chinese sample and found that two of the five OCB dimensions were different from those observed in a sample of American employees. Historical and traditional practices are found to be embedded in workplace environment and influence on-the-job behavior of employees. Paine & Organ (2000) conducted the study using the two cultural dimensions of individualism-collectivism and power distance. Individualism-collectivism refers to the extent to which members within an organization are closely-knit. A collectivist culture would indicate close ties between organizational members. Power distance refers to the extent to which society accepts hierarchical differences in power. Paine & Organ (2000) proposed that both dimensions of culture were potential moderators of OCB through commitment and motivation. It is suggested that in individualistic cultures, OCB will be positively related to beliefs that OCB influences performance appraisal (through motivation) and in low power distance cultures, perceived fairness will be positively correlated with OCB (through commitment). Empirical support for these propositions is forthcoming and may be of interest to future researchers in the area.

VIII. SUMMARY OF RESULTS AND CATEGORIZATION OF OCB ANTECEDENTS AND CONSEQUENCES

It has been decided to follow the categorization adapted by Podsakoff et al. (2000) in the meta-analytic review of the OCB literature. Accordingly, 4 major categories of antecedents that emerge from the literature are,

- Individual or employee characteristics
- Task Characteristics
- Organizational Characteristics, and
- Leader behavior

Table 1 summarizes the individual level antecedents of OCB, categorized into the 4 categories. Table 2 captures the group-level antecedents of OCB. Since, these antecedents are analyzed at a higher level, it is not deemed necessary to categorize them separately. Table 3 lists the consequences of OCB at individual level and higher levels.

Table 1: Summary of results, establishing the antecedents of OCB at INDIVIDUAL level

Sr. No.	Category	Antecedent	Remarks
1	Individual Characteristic	Job Satisfaction	Partially supported in the literature, owing to different measures of satisfaction of affective and cognitive satisfaction
2	Individual Characteristic	Perceptions of organizational justice	Mixed support in the literature. Perceptions of procedural justice found to predict OCB more strongly than perceptions of distributive justice
3	Individual Characteristic	Organizational Commitment	Ample empirical evidence to suggest that organizational commitment is a dominant antecedent of OCB
4	Individual characteristic	Personality variables	[a] Positive affectivity (PA), positively correlated with OCB [b] Extraversion predicts OCB [c] Agreeableness: Literature suggests that employees with high agreeableness are beneficiaries of OCBs from co-workers [d] Self-Esteem and Organization based self-esteem are both predictors of OCB, with OBSE being a stronger antecedent of OCB. [e] Need for achievement (nACH) – Higher nACH employees tend to exhibit more OCBs.
5	Individual characteristic	Workplace values *	Values fostered by the organization tend to encourage citizenship behavior in employees
6	Individual Characteristic	Communitarian beliefs	Impact OCBs positively
7	Task Characteristic	Job congruence	Positively correlated with OCB

8	Task Characteristic	Task Inter dependence	If employees find themselves in situations of highly interdependent tasks, co-operation and cohesiveness are likely to increase
9	Task Characteristic	Work related stress or emotional exhaustion	Indirect predictor, has negative correlation with OCB
10	Task Characteristic	Contingent employment and work status	Contingent employees and part-time workers are less likely to exhibit OCBs. If part-time employment is the preferred work status, the negative impact on OCBs is moderated.
11	Organizational Characteristic	Perceived Organizational Support (POS)	Positively correlated with OCB
12	Organizational Characteristic	Fulfillment of psychological contract **	Employers / organizations that ensure fulfillment of contract are reciprocated by citizenship behavior from the employees
13	Leader Behavior	Leader supportive-ness	Adequate empirical evidence to suggest that supportive behaviors are more likely to induce OCB in members
14	Individual characteristic	Demographic variables	Empirical evidence suggests that rural background, first-born and higher level of education are factors that impact OCB. Examining the demographic variables is not in the scope of this paper

* Workplace values may be categorized in either organizational or individual characteristic, depending upon the level of analysis. If viewed as a dimension of organizational culture and encouraged specifically by organizational agents, this factor would be an organizational characteristic. However, if analyzed as individual perception of workplace value, this factor seems more to be in the realm of individual characteristic.

** Fulfillment of psychological contract could be a result of organizational policy or supervisor initiative, depending on which it can be categorized as either an organizational characteristic or leader behavior

Table 2: Summary of results, establishing the antecedents of OCB at GROUP level

Sr. No.	Group level antecedent of OCB	Remarks
1	Organizational Justice climate	Group level perceptions of fairness enhance OCB at both individual and group level
2	Personality trait of PA	PA aggregated at group level and analyzed using WABA analysis show that PA (positive affectivity) within the group tends to increase OCBs.
3	Leader Behavior	Literature supports the view that leader's mood reflects the mood of the group and increases cop-operation and OCBs within the group.
4	Group cohesiveness	Mixed views about group cohesiveness as an antecedent of OCB.
5	Commitment to the supervisor	Measured at an aggregate level. Commitment to the supervisor is expected to enhance OCB towards the group and organization.

Table 3: Summary of results, establishing the consequences of OCB at Individual and Group level

Sr. No.	Level	Outcome / consequence	Remarks
1	Individual level	Performance rating	Empirical evidence suggests that OCBs on part of the employees affect the performance ratings and appraisal by the supervisor
2	Individual	Job performance	Literature on OCB supports the view that OCBs enhance in-role performance
3	Group	Group level performance	OCBs at both the individual and group level positively impact the group performance and co-ordination
4	Organizational	Organizational Effectiveness	OCB "in the aggregate" as suggested by ORGAN, 1988 impacts organizational performance positively.

Implications for managers

The findings on OCB antecedents and consequences have significant implications for practicing managers. Some of the immediate ramifications are discussed in this section. It becomes apparent from the findings that reward contingencies go a long way in inducing the frequency of OCB. It is evident that when employees perceive leaders to have powers to rewards OCBs the frequency of such behavior increases resulting in beneficial consequences for the organization. The competitive scenario is increasingly pushing organizations into restructuring and downsizing exercises. In such situations, the existence of citizenship behavior, should mitigate the negative effects of organizational change. If employees perceive procedural justice during the intervention it is likely that the negative vibes that emerge during the intervention are buffered by a corresponding increase in OCB. It is then clear that managers need to be proactive to understand and manage the factors that contribute to an increase in frequency of OCB and thus contribute to overall organizational effectiveness.

In conclusion, it would be appropriate to state that research in OCB has contributed immensely not only to the understanding of an organizationally relevant phenomenon but also to enhanced workplace practices in organizations across the globe. This paper has tried to clarify some of the key issues in OCB research and it is hoped that the findings would be beneficial to researchers and practitioners alike.

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Hong Kong Ministerial Conference on WTO: A Critical Review*

Sridhar Panda [1]

Abstract

Contrary to official claims and pretensions of a Development Round on WTO at Hong Kong, there was hardly any progress on delivering on development concerns of developing and least developed countries. The paper analyses how developed countries have extracted more from their developing counterparts as in the past adding further to the latter's trade imbalance.

I. INTRODUCTION

The sixth Ministerial Conference (MC) on World Trade Organization (WTO) was held during December 13- 14, 2005 at Hong Kong against a background of rising discontent in developing countries against unfair trade practices, broken promises as well as manipulation of WTO rules by their developed counterparts. There is a large gap between the positions of the developed and developing world on every major issue. This has essentially happened because the developed world is blinded by its selfinterest and reverted to operating in a very aggressive, mercantilist mode of "take no prisoners"(Bajaj, 2005). The Doha Round was foisted on developing countries on the pretext of it being a Development Round. It was supposed to open up markets for developing countries; especially in agricultural products through removal of trade distorting export and domestic subsidies.

There are three main factors contributing to the strength of developed countries in the WTO process which enable them to have better bargaining power. Firstly, they are politically and economically strong and they use this strength to achieve their objectives in the WTO. Secondly, they almost always coordinate among themselves while preparing a proposal or response and their combined strength and clout are naturally formidable. Thirdly, the governments of these countries coordinate fully with their industry, trade and services sector and combine their political and strategic strength with the economic and technological muscle of the latter (Das, 2004). Even if there are differences among major developed countries on some issues, they often sink these differences or

* Received February 1, 2006.

1. Faculty, Fortune Institute of International Business, New Delhi , e-mail: spanda@fiibindia.com

accommodate each other and face the developing countries with their combined strength and common strategy. Also the goals and objectives of their governments on the one hand and of their industry, trade and services sector on the other converge to a great extent in economic matters relating to expanding their economic space in the developing countries. For example, the European Union (EU) and Japan were the main architects for including investment in the agenda while the United States (US) was not so enthusiastic. However, the latter supported the efforts of the EU and Japan on this proposal. Similarly, the EU and US adjusted their differences in the sensitive sector of agriculture and evolved a common frame which preserved their own subsidy and enabled them to extract significant commitments from developing countries (Das, 2004).

The ministerial meeting of WTO amounted to little more than an expensive experiment in sleep deprivation. For six days (and quite a few nights) trade ministers from 149 countries haggled, accompanied by almost 6,000 officials and watched by nearly 3,000 journalists and more than 1,000 people from non governmental organizations. Large parts of the host city were shut down as police were attacked by demonstrators, most prominently by the South Korean farmers who were furious at the prospect of freer trade in their markets (The Economist, 2006).

The meeting's most notable accomplishment was that it did not collapse as previous gatherings had in Seattle, USA (3rd MC) in 1999 and Cancun, Mexico (5th MC) in 2003. Contrary to the doom and gloom scenarios advanced by many, the conference concluded with some success towards completing Doha Round as Cancun failed. The questions being asked relate to whether the developing world has been able to achieve anything of consequence to their interests as it is more or less clear that the developed world has not sacrificed anything of importance as far as three critical areas of agriculture, non agricultural market access (NAMA) particularly industrial tariffs and services are concerned.

These areas are, of course, crucial because on them will depend the future health of the international economy. But there is another area which was not quite an issue before Hong Kong, which today has assumed a role that could act either as a welcome catalyst for change for the better or turn out to be the last nail in the coffin of multilateral cooperation to liberalize trade. This is the unity that was forged among the developing countries and the least developed countries (LDCs) which, at the conference led to the coalescing of around 110 developing countries, a grouping which, if it survives, will have greatest influence on the working of the 149 members of WTO (Choudhury, 2005).

II. BACKGROUND

The first rounds of multilateral negotiations under the General agreement on trade and tariffs (GATT) mainly witnessed tariff reduction by developed countries. But the eighth and last round lasting from 1986 to 1994 named as Uruguay Round signified a new phase in world trading history within a new era of neoliberal globalization. The Round attempted to eliminate export subsidies on agricultural products and textiles, dealt with non tariff barriers (NTBs) technical aspects of trade and trade related investment measures (TRIMs). The Round produced a particularly large number of new trade agreements such as phasing out quota in textiles, trade related intellectual property rights (TRIPs), services etc. It also changed the nature of GATT by transforming it to world trade organization (WTO) with MC being the apex decision making body. With WTO coming into existence, trade among the member countries became more rule based which is binding on the member countries. In fact,WTO fulfilled the dreams of those countries who tried hard to set up a regulatory body in the form of International Trade Organization (ITO) at Havana conference in mid 1940s in the post war period which never saw the light of the day. Though initial rounds helped some developing countries to have better market access into rich nations, due to tariff reduction, the Uruguay Round and its aftermath put intense pressure on developing countries to bring down tariffs substantially so as to provide better market access for products of rich nations. The inclusion of new areas in the WTO was basically to further the interests of developed countries in the markets of developing nations due to the competitive advantage of the former.

The WTO's declared objective is to help trade flow smoothly, freely, fairly and predictably. It claims to do this neutrally, by administering trade agreements, acting as a forum for trade negotiations, helping to settle trade disputes, reviewing national trade policies, providing assistance to developing countries in trade policy issues through technical assistance and training programmes and cooperating with other international organizations (Peet, 2003).

Here, the WTO says its objective is fair trade, as with non discrimination or ensuring that conditions for trade are stable, predictable and transparent. In other wards, the WTO interpretation of fairness is limited to the exact conditions under which free trade occurs that countries follow the rules, act in transparent ways and so on. With this narrow restriction, trade can operate 'fairly' under a system that more generally favours some interests while harming others. But a careful study of its performance in the last six decades since its birth shows that terms of trade has been biased in favour of developed countries. Though there is a lowering of tariff to a great extent allowing better market access, the growth of NTBs such as anti dumping and countervailing measures, quantitative restrictions in the form of quota, technical standards, sanitary and phytosanitary (SPS) standards etc. has come in the way of trade promotion of developing countries. The political economic balance of power swung against domestically oriented industries and in favour of trans national corporations (TNCs) especially the new fringe of high technology firms interested in trade related issues such as secure exports and the protection of intellechcal property sights (IPRs) which they thought could be protected only by international agreements (Peet, 2003) such as GATT/ WTO.

III. FROM SINGAPORE TO CANCUN: BIRTH OF DOHA DEVELOPMENT AGENDA

The first MC at Singapore in 1996 after the formation of WTO in 1995 was sought to bring in investment, competition policy, government procurement, environmental and labour issues as well as zero duty in e-commerce. Developed countries managed a formal agreement on these issues except 'Labour clause' through closed door meeting in 'green house', a term used in WTO for informal meetings of like minded countries. Due to opposition from developing countries, labour issue was referred to International Labour Organisation (ILO) as WTO is not the competent authority. But the conclusion of Singapore MC questioned the transparency principle of WTO as it remained hostage to the whims and fancies of developed countries. This was followed by Geneva MC which was not a substantive one as it celebrated the golden jubilee of GATT, the predecessor of WTO.

Since then, there is a paradigm shift in the nature and characteristics of MCs .There has been a greater degree of solidarity among developing countries to push their agenda forward. Even a good number of LDCs extend their support to developing countries as they have realized the business interests of Trans National Corporations (TNCs) in their markets. Besides this, the civic bodies such as media, NGOs etc. are playing a pivotal role in educating people against the interests of developed countries which has seen the terms of trade being distorted in favour of developed countries since GATT came into force in 1948.

As developing countries were dissatisfied with Singapore issues, it was put in the back burner by them. A much more ambitious round (third MC) was launched at Seattle, USA in 1999, but was aborted by concerted opposition in the streets by civic bodies such as NGOs, media etc. Besides, USA put forth its own agenda items instead of playing the role of a mediator being the 'host' country as practised . This was accentuated by unbridgeable differences between developed and developing countries as the latter had been well prepared with its agenda unlike Singapore MC. There was also public outcry against the 'profits over people' business policies of pharma TNCs in South Africa and other developing African Countries under the new patent regime of WTO and opposition by some developing countries of Asia and Latin America concerning

Singapore issues and trade distortion in agriculture by quad group i.e., USA, EU, Canada and Japan.

The fourth MC was launched at Doha, Qatar in 2001 against the backdrop of Seattle fiasco. Like earlier MCs, this round was struggling to capitalize on the wrath of developing countries . While one developing country after another was making bilateral deals with the US and EU , India with a few of the emerging economies stood firm to advocate the concerns of developing countries. Thus was born the Doha Development Round. Finally , it was realized that developing countries interests would become the fulcrum of WTO negotiations.

The Doha MC did produce an agreed work programme which is very heavy and ambitious. (Declaration of the Doha ministerial conference, 2001) Nearly all the major subjects of the Uruguay Round of Agreement (URA) under the auspices of GATT have been included in the work programme and some more have been added . Comprehensive negotiations are envisaged in areas of agriculture , services, subsides, anti-dumping , regional trading arrangements, dispute settlement, industrial tariffs and even some aspects of Intellectual Property Rights . Besides , there will be negotiations in the area of environment too. (Das, 2004) Intense work is also envisaged on new issues, viz, investment, competition policy, government procurement, trade facilitation and e-commerce, the so – called Singapore issues.

In the course of preparations for Seattle MC, the developing countries had identified a number of deficiencies and imbalances in the WTO agreements and had suggested correctives, otherwise called implementation issues. Instead of finding solutions to 'implementation issues', the Conference intensified the work in new areas which were of interest to the major developed countries. Hence, the Doha Work Programme was highly unbalanced. The irony is that the work programme has started to be called the 'Doha Development Agenda (DDA)', thereby conveying the impression that it is all in the interest of the developing countries. Actually, it is heavily weighted in favour of the major developed countries interests and does not have much content on the interests of the developing countries.

Subsequently, the fifth MC was launched at Cancun, Mexico in 2003 to negotiate further on Doha Work Programme.In this Round, developing countries led by Brazil and India argued their case powerfully and put pressure on developed bloc to take infamous Singapore issues off the table. Even African Caribbean Pacific(ACP) countries had revolted and the LDCs had rejected the Draft Ministerial Declaration (Mitra, 2005). Cancun MC collapsed due to differences between developed and developing countries on various issues. Like Seattle, this round also witnessed massive protest by civic bodies. The failure of Cancun brought strong solidarity among developing countries and gave birth to G-20 , the first ever grouping of 20 powerful developing countries led by India , Brazil and China .The single rallying point was the unfair trade regime in agriculture in the EU, US and Japan .Out of this emerged the General Council decision of July 2004 to drop the three controversial Singapore issues – investment, competition policy and government procurement . Despite the hegemony of neo-liberal ideology, the developing countries were relieved. Otherwise, they would have had to offer sectors for Foreign Direct Investment (FDI) on liberal terms and even move in the direction of what is called pre-establishment national treatment, where de facto screening process (for FDI) would have had to be substantially done away with . A signing of an agreement on competition policy would have meant having to follow the so called global norms related to providing information on the regulations on mergers and acquisitions. (D'mello, 2005). In the area of government procurement, developing nations would be required to fall in line with WTO compliance and reformulate their procurement policy in order to provide national treatment to foreign players . Even the government's support and spending for state run enterprises and small and medium enterprises would be scrutinized and reduced. Government procurement was initially excluded from the GATT, article III (national treatment) does not apply to procurement. The code bound only its signatories and most GATT/ WTO contracting parties did not join , making it plurilateral in nature. Therefore, membership remains limited mostly to organization for Economic Cooperation and Development (OECD) countries. (Evenett, 2002).

After Cancun debacle , the negotiations started again in March 2004 . The most significant outcome of these negotiations was emergence of 'July Package' 2004. This set the framework to continue with multilateral trade negotiations under 'Doha Development Agenda' (DDA). This framework is structured around three pillars of negotiations , namely export subsidies, domestic support and market access. Though this 'July Framework' was a landmark achievement in trade negotiations after a successive failure to reach the consensus on negotiating modalities, it was left for 6th MC, to be held at HongKong in December 2005, to decide the modalities.

IV. HONG KONG MINISTERIAL CONFERENCE

The Doha Round, launched in 2001 was meant to address the concerns of developing countries who were feeling like getting a raid deal in the Uruguay Round . Negotiations over the past four years have, however, confirmed that all talk of 'development' was just rhetoric aimed at bringing developing countries around to launch the Round. The Ministerial Declaration after the conclusion of Hong Kong Summit has not only failed to address substantially the concerns of developing countries but also has actually paved the way for an eventual trade deal by the end of 2006, which is going to be severely detrimental to their interests . The so called 'Development Round' based on 'July 2004 Framework Agreement' after Cancun disaster has been manipulated by developed countries, especially the US and the members of the EU to push for further trade liberalization in developing countries while they continue to protect their economies through high subsidies and non tariff barriers . The developing countries gave in on the key market access issues in services and non agricultural market access (NAMA) . In return they did not receive a significant gain in agriculture sector as the removal of subsidies by their developed counterparts was minimal. Hong Kong failed to deliver something substantial for developing countries on three main components, i.e., agriculture, NAMA and services of the so called 'development package'.

4.1 Agriculture: Export subsidies and Domestic support

At the heart of Hong Kong talks was the question of poor and developing countries' getting access to the agricultural markets of rich nations. Elimination of all export subsidies in the agricultural sectors by 2013 by rich nations such as the US, EU is misunderstood outcomes of the Hong Kong MC since most take it as removal of hundred of billion dollars worth of support the EU and US give to their farm sector ($112 billion for EU and $95 billion for US). All that Hong Kong referred to was the removal of export subsidies given by these countries and that in the case of EU for instance it was just around $2.5 billion and in the case of USA it was the elimination of $4 billion cotton subsidies to its cotton growers (Jain and Gupta, 2005). Subsidies under the EU's common agriculture policy (CAP) make it more difficult for farmers in developing countries to export their often efficiently-grown produce to the EU market which is the World's biggest market.

As the French economist Jacques Berthelot (2005) points out, the ending of direct export subsidies does not mean the end of subsidies to exported products as a large part of domestic subsidies enter into exported products and are thus export subsidies in disguise. According to him formal export subsidies to EU cereals were reduced from $2.7 billion in 1992 to $148 million in 2002. But domestic support in the form of direct payments that benefited exported cereals rose from $143 million in 1992 to $1.6 billion in 2002." As cereals exports have halved (from 36.4 to 18.4 million tonnes), the subsidy per exported tonne of cereals has increased by more than 20 percent per tonne i.e., from $ 76 to $92. In the same way, the EU subsidies to the animal feed consumed by the exported poultry or pork meat are larger than the export refunds which have been reduced significantly (Khor, 2005).

An EU plan to remove the subsidies by 2013, three years later than developing countries had wanted, was approved in Hong Kong after intense persuation. The 25-nation EU (15 members before May 2004) had insisted on the delay to give European farmers time to cope with tariffs scheduled to be implemented before that date. Although a minor achievement, it was nonetheless a compromise retaining a degree of credibility for the overall negotiations. Despite wealthy nation's promises to improve the lot of the world, they are obviously unwilling to give up all of their advantages. They bargained down a call by the 50 LDCs to allow duty free and quota free privileges to 99.9 percent of exports by 2008 to 97 percent (South China Morning Post, 2005).

West African cotton-producing nations seemingly won a victory by having wealthy countries, particularly the US agree to eliminate all export subsidies on cotton by end 2006. They have complained that US government subsidies to American cotton growers to keep prices low, has made it impossible for farmers elsewhere to compete. However, US law makers have to approve the deal which is not a certainty given the power of wealthy cotton farmers and their political clout in government as they fund political parties during the elections. Even the EU's trade commissioner, Peter Mandelson, rightly pointed that the six days of negotiations achieved by little which could not be termed as a success. He has also pointed out that EU will find out the modalities for reduction of export subsidies only when there is a parallel concession offered by other developed nations. Besides US, the EU has criticized the public procurement system existing in Australia and New Zealand which distort the trade in agriculture. It has also targeted some of the emerging developing countries like India, China for their aggregate minimum support (AMS) going beyond 10 percent in certain agri-commodities.

The Agreement on Agriculture was the result of a compromise between the US and the EU under Uruguay Round, which was included for the first time as part of trade negotiations. All NTBs were to be converted to tariff, which involved finding average tariff equivalents. Most of the developed countries, particularly the quad group resorted to very high tariff in the process of 'tariffication' of NTBs . Even special safeguard measures , a safety valve under WTO were instituted to provide protection to the agricultural sector of these countries.

The agricultural sector is being protected in developed countries through domestic support and export subsidies. Domectic support measures were classified on the basis of the extent to which they 'distort ' product markets , into amber box (e.g input subsidies and price support), blue box (e .g deficiency payment – an incentive not to produce , as a supply side management measure) and green box (e.g rural infrastructure services , environmental protection and decoupled income support) and targets to reduce the amber subsidies , resulted in subsidies being shifted from one box to the other.

However, the modalities to eliminate the export subsidies are to be finalized by July 2006. It is a matter of concern since developed countries resort to various tactics before they surrender their interests. There has, however, been an agreement that domestic subsidies will be cut, but by how much is subject to negotiations in 2006. The proposal is that there will be three bands in which various countries will be put into, depending upon their levels of 'trade distorting' domestic support to farmers. The EU will be in the top band where support levels are greater than $60 billion, US in the middle one where support levels are between $10-60 billion and a third one below $10 billion concerning some of the developing countries. The cuts in the top band could be between 70-80 percent, but the time frame for this has to be negotiated. It could be between 53-75 percent for the US and between 31-70 percent for the rest. There has also been agreement that developing countries are allowed to retain subsidies upto a value of 10 percent of the total value of output, otherwise known as AMS. Even developed countries have agreed to provide duty free and quota free market access for 97 percent of exports produced by world's poorest nations. However, all these commitments will be fructified if the modalities are established by July 2006 and in some cases by end 2006. This is going to be a stupendous task if we consider the past performance of WTO negotiations and strategies adopted by developed nations to secure their interests. Even these commitments may not bring much dividend for developing countries. The early indication shows that the commitments may not be respected while finalizing the modalities.

The past experience and strategies adopted by developed nations show that Hong Kong may not cut much ice in favour of developing nations in agri-business. The developed countries may not give up so easily at the time of finding modalities. Secondly, removal of export subsidies may not push the agri-export of developing world as it constitutes only two percent of total farm subsidies provided by quad group except some of the Latin American countries like Brazil and Argentina who are highly competitive. Thirdly, the products emanating from developing countries and LDCs may be discriminated in developed markets as they can protect three percent of their market. This means sensitive products such as cotton in case of US and rice in case of Japan may be protected as usual in their respective markets. Even some developed countries such as the US has made it clear that it may not extend duty free access to textiles exports from Bangladesh as there has become quite competitive. Fourthly, some Sub-Saharan African and West African countries are getting duty free and quota free market access to the US market for most of their farm products under the African Growth and Opportunity Act, 2001. Similarly, the EU extends concessions to some developing countries and LDCs under its Everything But Arms (EBA) initiative. Therefore, Hong Kong may not bring in much dividend for these countries. However, developing countries will be targeted to reduce their AMS below ten percent wherever it exists and go for liberalization by removing government controls. Whether the negotiations can be concluded by the deadline of end 2006, when US fast track legislation to avoid difficult senate approval expires, remain uncertain. The US budget reconciliation process and final vote in the congress are set to extend domestic support to agriculture and counter cyclical support to commodities up to around 2011.Even the EU's budget from 2007 to 2013 adopted recently ensures that nothing can be touched in the agriculture budget till at least 2013. The budget shows that out of $ 1036 billion, CAP and rural support account for 43.1 percent.

As a result of Uruguay Round, agriculture was largely brought under the main WTO disciplines. Import measures had to be eliminated or converted to tariffs (tariffied) and the tariffs were then subject to progressive reduction commitments, except for rice and some staples that were subject to maximum access commitments – that is tariff rate quotas TRQs. It was also agreed to reduce the level of domestic support, except for exempted 'green box' policies and deminimis amounts. Industrial countries were to reduce domestic support (the aggregate minimum of support or AMS) by 20 percent over 6 years , while developing countries were to reduce their domestic support by 13 percent over 10 years. The agreement also included reductions in outlays on export subsidies (for industrial countries, a reduction of 36 percent over 6 years and for developing countries, one of 24 percent over 10 years) and in the volume of subsidies exports (reductions of 21 percent over 6 years by industrial countries and 14 percent over 10 years by developing countries) (Laird, 2002). Instead of reducing the domestic support and export subsidies by the deadline of 2001, the industrial countries particularly the quad group, have changed the nature of their support by shifting some of the items from blue and amber box to green box which is permissible . Even the support level has increased over the years. It is worth mentioning here that industrial countries, viz Australia and New Zealand joined the developing countries in bringing agriculture under WTO discipline as they are quite competitive . In case of developing countries, there is not much of an impact as most of them provide less than 10 percent AMS to their agriculture sector , which is permissible. Amongst the industrial countries, the EU is the main culprit in providing and increasing the huge support to its farm sector.

The Hong Kong Declaration sets its seal of approval on the banding approach, suggested by the G-20, to the reduction of agricultural tariffs. According to this approach, agricultural tariffs have been put in four bands ranging from the lower to the higher level, with the provision that tariffs in the higher band will be subject to deeper cuts. This amounts to the acceptance of a non-linear approach to agriculture tariff reduction advocated by developed countries.

The extent of cut in each band is yet to be agreed upon, though there were various figures proposed during the negotiations prior to the Hong Kong conference. Deeper cuts in the higher bands will no doubt bring down appreciably the agricultural tariffs of developed countries, most of which took very high tariff bindings during the Uruguay Round of negotiations. But it will also involve substantial reductions in the tariff bindings of developing countries like India, which are also on the higher side. India's tariff bindings for major agricultural products are in the range of 100 to 150 per cent. This may require India to accept a cut of approximately 35 per cent. This is quite a drastic reduction, particularly when tariffs remain the only means of protection after India eliminated quantitative restrictions on all agricultural products by March 2001.

In the Hong Kong Declaration, the developing countries have been provided a few escape routes of an uncertain character. Firstly, they have been given the flexibility to self designate an appropriate number of tariff lines as special products (SPs). But the deal is by no means clinched. The self designation of SPs will be "guided by indicators based on the criteria of food security, livelihood security and rural development." Developed countries are likely to exercise their influence in the determination of the guidelines and in the process make life difficult for the developing countries. This was evident from the loopholes picked by them in the indicators proposed by Indonesia on behalf of G-33, the developing countries group, on SPs and related issues.

Secondly, developing countries members will also have the right to recourse towards a Special Safeguard Mechanism(SSM) based on the import quantities and price triggers ". The precise arrangements for the SSM are yet to be negotiated. Moreover, both these special dispensations for developing countries will come into operation only when other elements of the modalities for agricultural negotiations are put in place.

4.2 Non Agricultural Market Access (NAMA)

Developing countries have conceded their ground substantially in NAMA and services. The surrender of their well known positions on these issues was spearheaded by India and Brazil, which perceived their interests in NAMA and services differently from those of the majority of developing countries. Because of the competitive edge required by some of their manufacturing and service industries, India and Brazil are apparently interested in gaining greater access for their concessions. These countries, therefore, share the objective of developed nations to adopt a more ambitious approach towards their liberalisation in these sectors. In the negotiations preparatory to the Hong Kong conference, they took initiatives to advance proposals designed to put the negotiations in these areas on a faster track. These proposals found general acceptance in Hong Kong and were elevated to a higher legal status by virtue of being included in Hong Kong Declaration (Peet, 2003). This development brought some kind of friction in the solidarity of developing nations. Venezuela and Cuba categorically expressed their reservations on the texts on NAMA and services in the concluding session of Ministerial. India's complicity in pushing the final agreement along with Brazil, despite the unwillingness of several developing countries, reflects poorly on the ability of these two major players of the G-20 to provide leadership to developing countries.

On NAMA, the Swiss formula for tariff reduction has been accepted by member countries. This means deeper cuts on a line by line basis for countries levying higher tariffs. Since the tariff levels maintained by developing countries on industrial products are much higher than those of developed countries, the former will be offering larger tariff concessions and will not be able to protect particular tariff lines. For the first time in the multilateral trading system, developing countries will have to be subjected to a tariff reduction formula, 'that to' a harsh Swiss formula and worst of all, on a line by line basis (affecting all products). The flexibilities and exemptions are minimal and even these are under threat. The treatment of unbound tariffs- using applied rates as the basis, which has never been done before and should not be done, has been adopted by the ministers. These elements together spell a devastating effect on the industrial development prospects of developing countries. How deep will be the cuts will depend upon coefficients to be agreed. Here there are two proposals on the table, the first stipulating a limited number of co-efficients, may be one for developed and the other for developing countries and the other mooted by Argentina, Brazil and India (ABI), calling for multiple co-efficients, based essentially on the average bound tariff of each country. It is noteworthy to mention that LDCs may not be affected as they import most of the industrial products from developing and developed nations. Secondly, their consumption level of such products is very low. Therefore, they maintain a very low tariff level in most of the products.

Developing countries have been given special and differential treatment (S and DT) and less than full reciprocity for some of their products. But there is no agreement on how to apply them in concrete terms. There is, however, a proposal that for developing countries, a certain proportion of tariff lines may be subjected to cuts lower than that obtained by applying the Swiss formula and that a certain percentages of the tariff lines of these countries may be kept unbound.

There has for some time been under consideration a proposal advanced by the US on sectoral initiatives whereby tariffs on all products in selected sectors will be reduced to zero by all countries in a phased manner within a time bound framework, the phasing being different for developed and developing countries, except a few like India, which perceive themselves as competitive, and hence, prepared to consider the zero option in some of the suggested sectors. In the Geneva framework, this proposal was relegated to the background as one of the options which could be resurrected for consideration if other approaches failed to yield the desired results. But in Hong Kong the sectoral approach has been revived. A concession made to developing countries is that "participation should be on a non-mandatory basis". Indian industry by and large does not favour the sectoral approach. They are not confident that they can rush to zero tariffs in any of the sectors proposed unless they have a level playing field vis-à-vis foreign competitors, mainly in matters of infrastructure facilities and tax treatment.

The Hong Kong formulation on NTBs does not hold out any promise for the removal of these barriers in the near future. It is noteworthy to mention that developed countries resort to NTBs to disseminate against developing countries as their tariff level for industrial products is very low. Most of the NTBs are in the nature of SPS measures, technical barriers to trade (TBT) and anti-dumping and countervailing measures. The position of major developed countries has been that NTBs be considered within the frameworks of the respective agreements. As they are strongly opposed to any substantive amendment to these agreements, the most likely scenario is that the identified NBTs will countinue and multiply in the coming years.

Developed countries, particularly the EU, had made some movement in reductions in domestic subsidies conditional upon the developing countries sharing the former's high level of ambition for liberalization in industrial goods and services sectors. A formal linkage has been established between Non-Agricultural Market Access (NAMA) and access in agriculture. This implies that any movement in NAMA, the prospects for which have much improved as a result of the ground yielded by India and Brazil, both prior to and during the Hong Kong conference, will trigger commensurate movement in agricultural market access, leaving far behind, progress in achieving substantial cuts in domestic subsidies. This will ideally suit the interest of the developed countries and will represent a shift away from the battleground where the developing countries have since Cancun, proved most effective and convincing.

4.3 Services

The Hong Kong conference has imparted a new momentum to the negotiations on service. It has been decided to achieve "a progressively higher level of liberalization" and "intensify the negotiations" to that end. New datelines have been set for the submission of plurilateral requests, revised offers and drafts schedules of commitments. The adoption as a consensus document, of Annex C of the draft Declaration for the Hong Kong conference, is going to quicken the pace of the negotiations. The Annex C was unilaterally put forward by the chairperson of the Negotiating Group on Services, as a consensus document, despite the strong resistance of developing countries. The adoption of this contested document, with a few changes here and there, represents a huge concession by developing countries

The developing countries have also accepted the proposal of developed countries to adopt a plurilateral approach to the negotiations on services. This has, however, been qualified to take care of the concerns of developing countries. Firstly, this will be of a voluntary nature. Secondly, the results of the negotiations based on it "shall be extended on a MFN basis" to all member countries. Thirdly, such negotiations will be conducted in accordance with the principles of GATS s and the Guidelines and Procedures for the Negotiations on Trade in Services.

In spite of these qualifications, the adoption of the plurilateral approach will contribute substantially to the hastening of the pace of the negotiations in a sector where the vast majority of the developing countries would have preferred to move with circumspection and at a slower pace. The plurilateral approach would be used as a lever of pressure on developing countries to further liberalize their services sector. For, when a large number of major economic powers band together to make a demand, it is extremely difficult for the weaker negotiating partners not to move at least some distance towards conceding it.

The endorsement at the Hong Kong ministerial meeting of the "sectoral and modal approach" to negotiations brings in, through the back door, the concept of benchmarking and targets earlier advanced by developed countries and strenuously opposed by developing countries. According to this concept, members are required to undertake commitments in advance, as a part of the modalities, to open up a minimum number of sectors and agree on a minimum extent of opening across the sectors. This militates against the basic character of GATS, according to which developing countries are required to liberalize only in sectors and modes of supply of their choice and determine the extent of liberalisation in the selected sectors and modes. In the face of strong opposition by developing countries, the terms benchmarking and targets were deleted from Annex C of the draft Declaration. However, the Annex as now agreed, recognises that "the sectoral and modal objectives as identified by members may be considered". Though like the plurilateral approach, the adoption of the sectoral and modal approach is optional, there is no doubt that the text as adopted provides an opening to developed countries to bring back their proposal for benchmarking and targets (Dubey, 2005).

Though developing countries have been keen on emphasizing the opening up and more market access for its services according to mode 1 (which relates to cross border supply), that is activities that do not involve the cross border movement of either the supplier or consumer, but can be delivered through other means, such as IT enabled services) and mode 4 (which covers the movement of "natural persons", that is short term migration of people for the delivery of a specific service). The recent boom in software services and the expansion IT-enabled services, including off shore business process outsourcing such as BPO, RPO, C-value services etc. which have increased substantially in terms of both foreign exchange revenues and incomes generated from these activities, have been the source of great optimism for India and some of developing countries in South East and East Asia. But developed countries are reluctant to open up mode-4 due to security reasons and growth of unemployment in these economies. Due to a surge of terrorist activities and civil riots in US, France, Spain and the UK, developed nations may have a very tight emigration policy. Unless and until, GATS visa is put into force, Mode-4 will be restricted because emigration rules of different countries will not be applicable to it.

Thus far, developed countries have been keen on pushing for liberalization under Mode 3, which relates to allowing foreign commercial presence for the supply of services. They are especially keen on allowing their multinational companies to open subsidiaries or branches elsewhere so as to benefit from their competitive advantage in activities such as banking, insurance and other financial services, in retail trade, as well as in utilities such as water supply and electricity distribution. Most of their requests and offers thus far have essentially been in this mode. Some other interests of developed countries relate to Mode 2 (consumption abroad, which occurs when the consumer travels to partake the service delivery, as is the case in tourism or foreign travel for purposes of education or health services).

V. CONCLUSION

Though Hong Kong MC was based on a development agenda, it did not bring much gain for developing countries and LDCs. If modalities are formulated keeping in mind the interests of developing nations, it would bring some kind of balance in the already existing asymmetries of international trade against developing nations. Whether developing countries expectations of gaining reciprocal market access for its competitive goods and services in the developed markets are going to be fulfilled is yet to be seen. In the agricultural sector, developing countries will have modest gain if the developed nations do not play spoil sport while finding out the modalities and also in the implementation process.

The prospects of concluding Doha Round by the end of 2006 has brightened up due to the initiatives of some of developing countries, such as, India, Brazil and South Africa. However, the magnitude of problems still remaining unresolved should not be under-estimated. The timetable to settle the differences among the members is very short, i.e. only till July 2006, in many cases.

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Towards A New Vision of the World: Foundational Concepts for Holistic Development & Management (HDM)*

Subhash Sharma[1]

Abstract

Rooted in a new integration of three fundamental concepts, viz. Market, Society and Self, this paper outlines the contours of a new vision of the world through the metaphor of three colours viz. Green, Red and Saffron representing management thought, social discourse and spiritual concerns. This vision provides us a new foundational basis for Holistic Development & Management (HDM) for development of society as sacro-civic society. Paper also explores the linkages of this vision with the ethical foundations of organizations and suggests that horizons of management thought and thereby management education should be expanded to include social discourse and spiritual concerns.

I. INTRODUCTION

In the current era of globalization, the world needs a new vision to go beyond various isms. The new vision is captured by three fundamental colours of life viz. Green, Red and Saffron. Green denotes prosperity, Red denotes equity / equality and Saffron denotes spirituality. In 'GRS' vision, there is a balancing between prosperity, equity and spirituality. 'GRS' also corresponds to three fundamental ideas viz. Market, Society and Self / Spirituality. If we use the language of 'isms', then 'GRS' refers to a new blending of capitalism, socialism and spiritualism. For holistic development of the world, there is a need for balancing between prosperity, equity and spirituality reflected through competition, co-operation and connectivity approaches to organize human life and activities. This vision takes us beyond the existing isms and provides a direction for a new integration of various ideas about society and human life. 'GRS' vision is also linked with the following models of Holistic Development & Management (HDM) and Transcendental Management (TM):

3T Model

3T model refers to three approaches to life viz. Transactional (T1), Transformational (T2) and Transcendental (T3). Transactional approach is economistic and market focused. Transformational approach is humanistic and society

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1. Director, , Indian Institute of Plantation Management , Bangalore, e-mail : ssiipm@vsnl.net

focused. Transcendental approach is spiritualistic and cosmos focused. Green colour represents the T1, Red represents T2 and Saffron represents T3. In 'GRS', T1, T2 and T3 are balanced.

CCS

Competition, Cooperation and Symbiosis: Nature displays three levels of behaviour viz. competition, co-operation and symbiosis. In societies also we find a manifestation of these three aspects of nature in the form of individualism, collectivism and altruism as reflected through spiritual connectivity. These three aspects correspond to Green, Red and Saffron approaches to life. It may be indicated that Hoefestede (1980) in his study of societies classified the societies in terms of individualism and collectivism. He did not account for connectivity and altruism dimensions that exist in societies.

MMC

Matter, Mind and Consciousness: Matter, mind and consciousness are indicative of gross, subtle and very subtle dimensions of life and existence. They also refer to physical, mental and spiritual aspects of life. While green colour is indicative of gross, physical and matter dimensions, red is indicative of subtle aspect and saffron is indicative of very subtle or the spiritual dimension. In MMC integration we get the holistic view of life.

3Es Model

This model refers to 3Es in terms of Efficiency, Equity and Ethics and the inter-relationships between them. The 3Es are metaphorically represented by Adam Smith, Marx and Gandhi and in GRS vision we find their integration.

Triple Bottom Line

GRS vision also reflects the concept of triple bottom line captured through the concept of Profit, People and Planet. In GRS vision, Green is indicative of profit, Red is indicative of CSR and Saffron is indicative of good governance.

GRS Values

GRS values refer to three types of values viz. market values, social values and spiritual values. Market values are represented by pcs (profit, competition, self-interest) worldview. Social values are represented by jrd (justice, rights and duties) worldview and spiritual values are represented by lcd (love, compassion and devotion).

L1 L2 L3

Broadly in consonance with body, mind and spirit view of human beings, L1, L2, L3 model refers to three steps of self evolution represented by Lust (L1), Love (L2) and Light (L3) leading to the fourth step of Liberation. L1 (Lust) implies the mindset is 'Body' centric or materialistic, L2 (Love) implies mindset is humanistic and driven by heart and L3 (Light) implies mindset is cosmic and consciousness evolves from 'hans' to 'rajhans' to 'paramhans' levels represented by Cosmic Enlightenment and Awakening (CEA).

II. IMPLICATIONS OF GRS VISION

Following are some implications of GRS vision for individuals, organizations and society.

For Individuals

A balancing between W1 W2 W3 accounts, wherein W1, W2 and W3 are defined as follows:

W1: Wealth in terms of physical assets (Green)

W2: Wealth in terms of goodwill / social relationships / social capital (Red)

W3: Wealth in terms of spiritual capital (Saffron)

For Organizations

Green represents profit, red represents social responsibility and saffron represents good governance. GRS vision suggests profit ("Green") should be used for social benefit ("Red") and should be earned through good business practices i.e. ethical practices ("Saffron"). In essence, GRS should find its manifestations in organization's vision and mission.

For Society

GRS vision suggests a harmonic society that is just, humanistic and sacro-civic in nature. Thus, this vision provides foundational philosophy for future evolution of societies in terms of Sacro-Civic Society (SCS).

III. OPERATIONALIZING GRS VISION: HDM / TM IN ACTION

In order to operationalize GRS vision and various models of HDM and TM suggested above, we present following three fundamental principles and corresponding equations about a holistic view of life.

1) T Principle refers to Total view of life in terms of Transactional (T1), Transformational (T2) and Transcendental (T3) approaches to relationships of human beings with others including nature. This view of life is represented by the following equation:

   $T = T1 + T2 + T3$

2) C Principle refers to the complete view of nature in terms of Competition, Co-operation and Symbiosis. In social and organizational context it is represented by Competition (C1), Co-operation (C2) and Connectivity (C3) wherein the C3 represents the inter-connectivity of human beings with everything often captured through the concept of consciousness, particularly spiritual consciousness. Accordingly C equation is as follows:

   $C = C1 + C2 + C3$

3) P Principle refers to human personality which displays three components viz. lower self (P1), middle self (P2) and higher self (P3).

It is also displayed through three gunas viz. Tamas, Rajas and Sattava. The personality equation or the P equation is as follows:

P = P1 + P2 + P3

When these three TCP principles / equations are combined, we arrive at a comprehensive view of human beings, life and society. This view in a matrix format can be referred to as TCP matrix and is presented in Fig.1. This worldview is in consonance with GRS vision presented earlier and it provides an operational framework for translating HDM / TM into action.

T	C	P	
T3	C3	P3	T3 C3 P3 (Saffron)
T2	C2	P2	T2 C2 P2 (Red)
T1	C1	P1	T1 C1 P1 (Green)

Fig.1: A Holistic Worldview as a Foundation for A New Vision of HDM / TM

It may be indicated that T1 C1 P1 describes the situation in which every dimension of life is transactionalized, worldview is competitive and lower self finds its manifestation in terms of competition, greed and self-interest. Green colour represents T1 C1 P1 approach. T2 C2 P2 describes the situation in which humanism prevails, human relationships are in transformational mode. Co-operation prevails and the middle self moderates the lower self and transforms it into co-operative and transformational modes. Red colour represents T2 C2 P2 approach and is a symbol of social transformation. T3 C3 P3 describes the situation in which spiritualism prevails. Human relationships are in transcendental model. There is touch of altruism, harmony and connectivity. "Vasudhaiva Kutumbakam" is the foundational concept. Saffron represents T3 C3 P3 approach. When combined together they represent an integrative and holistic approach. Thus, GRS vision can be translated into reality through TCP mantra of HDM and TM leading us towards new social vision of Sacro-Civic Society (SCS).

During recent years many management thinkers have stressed the need for an integrative view of society. For example, Gupta (1994) suggests the concept of 'management by consciousness'. Chakraborty (2003) suggests the need for sacro-secular symbiosis. Athreya (2002) highlights the need for incorporating the 'Indian dimension' i.e. self-development dimension in management thought. Shastri (2002) also suggests the need to incorporate 'Indian Management' as a part of the holistic view of management thought. These ideas take us in the direction of sacro-civic vision of the society facilitated through the TCP matrix.

IV. NEW SOCIAL VISION & ETHICAL FOUNDATIONS OF ORGANIZATIONS

Towards GRS Model of Business Ethics

GRS vision presented above also leads us to an understanding of the ethical foundations of organizations. Three streams / principles of ethical approaches that take us beyond the traditional "Commandment approach" are as follows:

1) Teleological;

2) Deontological;

3) Virtue Ethics

These approaches are now part of the 'received knowledge' in the field of ethics. For example, Hartman (2002) provides a discussion on these perspectives in business ethics.

While 'commandment approach' was rooted in theology, the above three approaches are part of 'ethicotarian' worldview. Thus, in the field of ethics, there is a transition from 'theology' to 'ethicotarian' view, wherein focus is on 'scientific' approach to ethics and values. This is also reflected in transition from 'church' i.e. organized religion to 'inner search' i.e. inner exploration of human values.

The three approaches to ethics broadly correspond to the GRS vision and TCP matrix. T1 C1 P1 corresponds to teleological worldview and T2 C2 P2 corresponds to deontological worldview, T3 C3 P3 corresponds to virtue ethics worldview. Thus, in TCP matrix, all the three approaches to ethical decision making find an appropriate place. These approaches are also reflected through three colours of ethics, viz. Green, Red and Saffron (GRS). Ethics in its green colour represent the teleological / calculative / utilitarian approach. Ethics in red colour represent the deontological / dharma / responsibilities and obligations / ecotarian approach. Ethics in saffron colour represent the virtue ethics / cosmotarian / ethicotarian approach. These colours also represent a model of moral self-development wherein an individual evolves from green (Teleological level) to red (Deontological level) to saffron (Virtue-ethics level) in his / her journey of self-development. In Kohlberg's framework, these could broadly correspond to pre-conventional, conventional and post-conventional stages of moral development.

We can represent the above discussion through E (Ethics) diagram as presented in Fig. 2.

This diagram also represents a framework of 'typology of ethics' in terms of market values, social values and spiritual values. In language of "isms" (idea-spirit and its manifestations), capitalism is teleological, socialism is deontological and spiritualism represents virtue ethics. This diagram also has implications for the corporates. While deontological view provides a rationale for corporate social responsibility, virtue-ethics provides philosophical foundations for good corporate governance. Thus, E-diagram represents the essence of the new corporate model, wherein corporates are

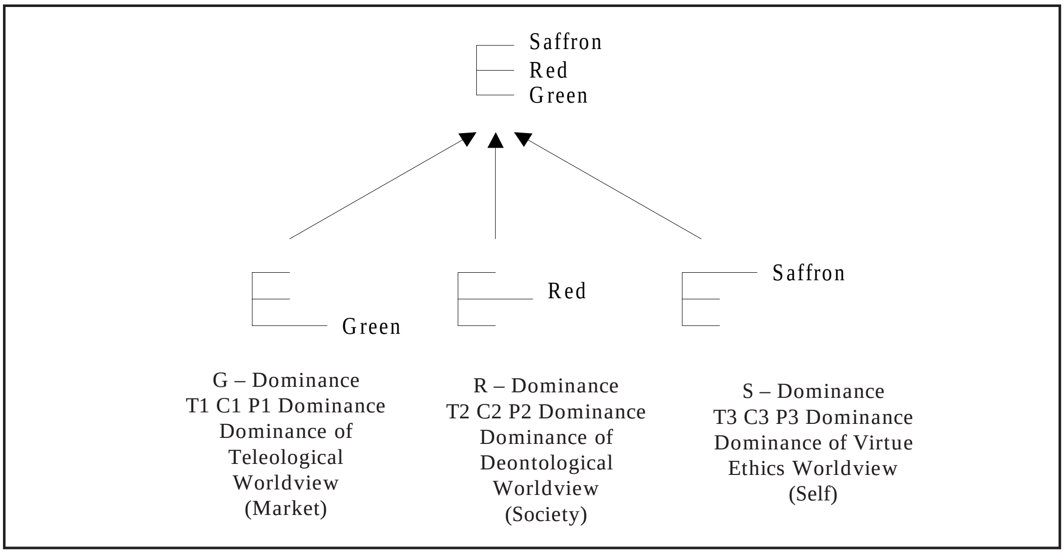

Fig.2: E-Diagram as a Balancing Approach for a New Vision of the World

concerned not only with teleological view i.e. profit maximization but are also concerned with corporate social responsibility i.e. deontological worldview and good governance i.e. virtue ethics worldview.

Sadri et.al., (1999) suggested the 'praxis' approach to ethics, wherein ethics are viewed in terms of decision making approach, "If the decision maker can discuss his / her decision openly and freely within his / her peer group then the decision is deemed to be an ethical one" and a 'practical axis' view. The praxis ("practical-axis") approach can also be viewed in terms of a combination of teleological, deontological and virtue ethics approaches. We can extend this idea further and refer to it as 'grounded praxis' approach to ethics, wherein the aim is to reduce the gap between ideal (virtue ethics) and real (teleological approach) through moderating influence of deontological approach. This grounded praxis approach could also be referred to as wisdom approach to ethics, wherein three approaches viz. teleological, deontological and virtue-ethics are used depending upon the situational context and the T-A (Thought-Action) mindset or the 'mode of thinking' of an individual / decision maker / manager / leader. This approach can be presented in a matrix format, wherein one side of the matrix defines T-A mode of an individual in terms of teleological, deontological and virtue-ethics and the other side of the matrix indicates the situational requirement. Fig. 3 an ethics grid, indicating situations in which a manager faces ethical dilemmas.

		Situational Requirement		
		Teleological	Deontological	Virtue-ethics
T-A Mode	Virtue-ethics	Ethical Dilemma	Ethical Dilemma	Ethical Matching
	Deontological	Ethical Dilemma	Ethical Matching	Ethical Dilemma
	Teleological	Ethical Matching	Ethical Dilemma	Ethical Dilemma

Fig.3: Ethics-Grid Reflecting T-A Mode and Situational Requirements

It may be indicated that Guna theory includes all the ethical approaches e.g. Sattava (S) corresponds to 'virtue-ethics' and Rajas (R) corresponds to deontological approach and Rajas-Tamas (R-T) corresponds to teleological approach. Further, Indian scriptures also provide an insight on E-diagram and other frameworks suggested here. For example, focus of Ramayana is essentially on 'virtue-ethics'. Amartya Sen (2005) considers Gita essentially a deontological document though others may differ from this conclusion because in Gita we find all the three approaches. In *'yada yada hi dharmsya…'*, we find the echo of 'arrival of the best to lead the rest'. Thus, we hear the resonance of virtue ethics approach. Kautilaya's Arthasastra is teleological though deontological and virtue ethics also find a place. Charvaka tradition being a purely materialistic approach largely belongs to teleological worldview. Amartya Sen also belongs to this tradition. It may be indicated that in different time contexts, ("yugas") different approaches acquire dominance. Further, different types of organizations / institutions are driven by different T-A modes. For example in the construct of nation, a deontological view on the part of citizens is given greater importance.

The discussion on new social vision and its relationship with ethics can also be explained through the acronym ETHICS and corresponding six ETHICS equations. This is presented in Table 1.

Six 'ETHICS' equations presented above also represent six HDM and TM equations and constitute the integrative core of management thought, social discourse and spiritual concerns.

In general, management thought and thereby management education is primarily rooted in the teleological worldview. For holistic development of management professionals, it is necessary to expand the horizons of management thought and management education beyond the teleological worldview. Herein lies the relevance of GRS vision

Table 1: New Social Vision of Sacro-Civic Society & The Framework of ETHICS Equations

Components of New Social Vision / ETHICS Equations	**Teleological**	**Deontological**	**Virtue Ethics**
E = E1+E2+E3	Efficiency (E1)	Equity (E2)	Ethics (E3)
T = T1+T2+T3	Transactional (T1)	Transformational (T2)	Transcendental (T3)
H = H1+H2+H3	"Harvard" (H1) Hedonism (H1)	"Haridwar" (H2) Helping others (H2)	"Himalaya" (H3) Harmony (H3)
I = I1+I2+I3	Indulgence (I1)	Idealism (I2)	Integrity (I3)
C = C1+C2+C3	Competition (C1)	Co-operation (C2)	Consciousness / Connectivity (C3)
S = S1+S2+S3	Self-interest (S1)	Sacrifice (S2)	Symbiosis (S3)
Colour	Green	Red	Saffron
Philosophical Roots	Utilitarian	Ecotarian	Ethicotarian
Key Note	Survival of the fittest	Empowerment of the weakest and duty of the fittest	Arrival of the best to lead the rest
Key Phrase	Management Thought	Social Discourse	Spiritual Concerns

and six 'ETHICS' equations for management education.

V. CONCLUSION

To conclude, it may be indicated that GRS vision, TCP matrix, E-diagram and other related frameworks presented in this paper could be viewed as a foundational basis for operationalizing the concept of Holistic Development and Management (HDM) and Transcendental Management (TM) to take us in the direction of a new social vision of Sacro-Civic Society (SCS). The aim is to achieve a balancing between three fundamental colours of life viz. Green, Red and Saffron. The other frameworks suggested in this paper are also in consonance with ancient Indian wisdom reflected through balancing of four objects of life viz. dharma, artha, kama and moksha. Hence, we can refer to the E-diagram and other frameworks as yantras of Transcendental Management, because three TCP forces represented by three mindsets of T1 C1 P1, T2 C2 P2 and T3 C3 P3 find a convergence and balancing in these frameworks.

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Product & Process Improvement Capabilities in Small & Medium Enterprises*

Dillip Swain[1], P. Mishra[2], B. Mohanty[3]

Abstract

A large industrial unit can have resources to invest in R & D and can acquire product and process development capabilities. Small and medium enterprises cannot do that due to their limited resources. In this study, an attempt was made to find out the variables that lead to product and process improvement capabilities in small and medium enterprises. Using regression analysis the factors influencing product improvement capability and process improvement capability were separately found. The study shows that the product improvement capabilities were influenced by specialist in R & D and external linkage and whereas process improvement capabilities were influenced by entrepreneur's education, external linkages and specialists in R & D. Contrary to the general understanding, access to finance, expenditure on R & D and qualified persons in the organization did not have much of effect on product and process improvement capabilities. Factor analysis showed that three factors, namely, technological alertness and effort, external linkage and technical qualification of the entrepreneurs explained significant percentage (67%) of the variation. The study was based on the experience of thirty-two small and medium scale organizations.

I. INTRODUCTION

Achieving and sustaining competitive edge for any enterprise depends on various factors and one of the key factors is the extent to which research and development activities are successfully undertaken in such enterprises. While such research and development may stretch from basic research to application engineering, for small and medium enterprises, basic research may be difficult in view of their limited resources. These enterprises, however, in their own way can develop new products and new processes which give them the competitive edge (Burgelman, 1995). Such product and process development may require the existence of product and process improvement capabilities with the enterprise (Carolis, 2003).

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1. Lecturer, Institute of Hotel Management, Catering Technology and Applied Nutrition, Bhubaneswar, e-mail: researcherdillip@yahoo.com
2. Professor of Economics, Xavier Institute of Management, Bhubaneswar, pmishra@ximb.ac.in.
3. Professor of General Management, Xavier Institute of Management, Bhubaneswar, e-mail : brajaraj@ximb.ac.in.

Product improvement refers to development of a new product or improvement in an existing product. Product improvement may involve the examination of products in order to identify opportunities for improvement for customer satisfaction and profit. Product improvement includes the modification of existing products in response to identified opportunities and emerging trends. The purpose of product development is to provide popular and high quality products in the changing markets and thereby ensure that such products offer the best value, provide the optimum choice, attract customers and guarantee delight. Effective product improvement is based on knowledge of current product strengths, weaknesses and customer needs (trends) supported by development in technology and systems (Keith Waller, 1996). Product improvement may be defined as providing a product with new features or same features with better quality. It may involve improved performance features, structural change in the product, change in packaging, variable size and quantity and also the range of product (Paul Trott, 1998).

Process improvement may be defined as increasing the process efficiency through simplification, backward and forward integration, process controls, automation, choice of appropriate combination of man and machine, wastage recovery and recycling and by-product manufacturing, which eventually reduce investment, time and cost of production or increase productivity (Khalil, 2000; Archibugi et.al, 1994). Improving an existing process is an important aspect of incremental change (Berner and Tushman, 2003).

II. PRODUCT AND PROCESS IMPROVEMENT CAPABILITIES

A capability is the capacity for a set of resources to interactively perform a task or an activity (Hitt, 2001). For large organizations, product and process improvement capabilities involve investing in R & D, patenting process, protecting the outcome of their research, using advanced technology or acquisition of new and advanced machinery (Lee and O'Neill, 2003). These capabilities enable the organizations to handle technologies and cope with technological changes with respect to products and processes and to undertake various technology-related activities (Lall, 1992; Albu, 1997, Lampert, et.al, 2001).

In sharp contrast, product and process improvement capability of small and medium enterprises is determined not by high investment in basic R & D, or in technology and machineries but by the combination of intangible factors (Hitt, 2001) concerning various learning processes, the technical qualification of the entrepreneur, R & D expenditure of the company, tie-up with other research institutions, technologically strong parent company, strong government support for such technology, strong technological collaboration as seen from technological agreement, alertness through attending refresher advanced training programmes related to technology; existence of R & D specialists in the company, number of qualified persons in the company and access to finance. However, the relative impact of these factors may be different for product improvement and process improvement.

III. OBJECTIVES OF THIS STUDY

The general perception and the findings of some studies that product and process improvement capabilities could be different in small and medium enterprises (or SMEs) from large units, were the triggers for the present study. The objectives of the present study, accordingly, were to

1. find out, from amongst the various methods of product and process improvement, those methods, which are mostly used by small and medium enterprises and the relative frequency of use of such methods.
2. find out the variables which contributed to product improvement and separately to process improvement and the magnitude of their contribution
3. identify groups of variables which significantly explained the variation in the process of product and process improvement.

For the purpose of the first objective, based on the survey of literature eleven different methods were identified and finally six were chosen. Entrepreneurs were asked to identify and indicate the methods, which they used. Based on the frequency of response, the inferences were drawn on the relative use of those methods.

To achieve the second objective, two dependent variables, namely, product improvement capability and process improvement capability were analysed with respect to six explanatory variables. With regard to the third objective, all the eleven methods which were mentioned earlier for assessing the extent of use, were also used to identify the groups of variables which significantly contributed to the product and process improvement capability.

IV. METHODS OF STUDY

1. Measurement of variables

Product improvement was measured through the exact number of such improvements made by the enterprise over a five-year period. Similarly, number of process improvement made by the enterprise was also counted. These improvements were further broken up into major and minor improvements. Every major change was given a weightage of 2 and minor change 1. Thus, the overall scores were arrived at for each enterprise for the two variables. These two variables were the dependent variables in the study.

The major independent variables, which were expected to affect or influence the product and process improvement capabilities, were identified and these are:

1. Access to adequate finance
2. Number of specialists in R & D in the organizations
3. Extent of external links
4. Number of qualified persons in the organizations
5. Educational level of the entrepreneur
6. Expenditure on R & D

With regard to access to finance, the entrepreneurs were asked to state whether they have access to adequate level of funds to carry out the product and process improvement programmes. The answers were in the form of 'Yes' or 'No' which were given scores of 1 or 0 respectively.

For specialist in R & D, the actual number of technical persons engaged in product design and development and industrial engineers engaged in process improvement was counted. The scores for this variable was the exact number of such persons available in the organization multiplied by due weights. The weights were 3:2:1 for engineers, other technical persons and science graduates respectively.

External linkage was measured on the basis of

1. Whether the firm monitored the product and process changes elsewhere.
2. Whether the firm has identified the sources for product and process improvement information, and
3. Whether the firm was a member of research association or laboratories.

Answers received to these questions were added to obtain an overall score on external linkage.

On the variable qualified number of persons in the organization, the exact number of qualified person at executive level was counted.

With regard to qualification of entrepreneur, technically fully qualified persons were given a score of 4. These people included mostly engineers. A person with an MBA degree was given a score of 3 and similarly B.Sc. degree holders 2 and general graduates and others 1. Thus, the score in this case varied between 1 and 4.

With regard to expenditure on R & D, the actual expenditures on such head for 3 years were taken and average was considered. In collecting data on such expenditure, the figures provided in their financial statements were considered and duly adjusted for variation in classification after detailed interview of the executives of the concerned companies.

About the second objective, the study used the multivariate relationship but using scores of the above variables.

With regard to the third objective, i.e., finding out groups of variables which may explain product and process improvement capabilities (through factors), eleven questions on the following aspects were asked:

1. Technical qualification of the entrepreneurs
2. Technically competent people
3. Government support
4. Technical collaboration
5. Technical consultants
6. Prior technical experience
7. Affiliation with other technical associations
8. Attending refresher course or training programmes
9. Visit to other plants
10. Existence of technical library or annual budget for technical journals.
11. Continuous monitoring of quality.

The questions were asked in the form of statements. The respondents were asked to give a score on a 5-point scale on each question based on their perception of relative importance. These were used to identify the factors contributing to product and process improvement capabilities.

2. Statistical methods used

For the first objective, i.e. on relative frequency of use of product and process improvement methods, tabular analysis was used to draw inferences. For the second objective multiple regression was used separately for product improvement and process improvement. Finally for identifying clusters of variables factor analysis was used. SPSS version 11.0 version was used for multiple regression and factor analysis.

3. Sampling & Data Collection

Study involved a combination of case studies using a fairly comprehensive interview guide and a survey based on a questionnaire. This combination of methods seemed to be appropriate for the study of small and medium enterprises since it permitted not only the collection of relevant statistical data, but also qualitative data both in the form of interviews with owners or managers and employees and useful anecdotal information from informal worksite observations, which provided a boarder context, for the interpretation of the survey data. This type of contextual evidence was particularly valuable since the actual behaviour and practice of small and medium scale enterprises are very much dependent on the personal attitudes and philosophies of founders, owners or managers. The survey provided a statistical picture of the industries under study, adding detail to the initial case studies. In this paper however, a part of the statistical part is being presented. The study is concentrated on a limited number of sectors. The choice of these sectors was determined by two general criteria:

1. The role of small and medium scale enterprises within the sector. That is, if the small enterprises played a key role in the sector, then such sector was selected.
2. The level of product and process improvement capabilities within the small enterprises. That is, enterprises were chosen in such a way that they were having different level of product and process improvement capabilities.

In so far as the enterprises were concerned, only those enterprises which had 10-150 employees and had been in existence for at least five years were chosen for the sample. Enterprises with fewer than ten staff were not included in the study on the grounds that very small enterprises have different structures, modes of operation and problems that are not comparable to those of general small and medium scale enterprises of a relatively larger size.

4. Number of samples selected and responses received

A total of 32 enterprises were selected based on the above criteria. These were in the following industry groups:

Food Processing	10	Consumer Products	2
Chemical	4	Consumer Durables	5
Industrial Products	5	Accessories	6
		Total	32

V FINDINGS & DISCUSSIONS

The objective on the first part was to find the exact practice relating to the variables (there were six such variables) affecting separately the product and process improvement capabilities. The responses are tabulated in Table –1 below:

Only in case of the variable 1 the responses were in dichotomous form. In rest of the cases the exact number was available.

Table 1: Responses on Variables determining Product and Process Improvement Capabilities

1	Access to finance	Yes: 22	No: 10	
2	Number of specialists in R & D	Max: 20	Min: 0	Average 5
3	External linkage with number of sources	Max: 7	Min: 2	Average 5
4	Number of qualified persons in the organization	Max: 40	Min: 1	Average 9
5	Education level of entrepreneurs	Engineering: 7	MBA: 3	Gen.Graduate 15 Sc. Graduate - 7
6	Expenditure on R & D	Max: Rs. 10 lakh	Min: Rs.0	Average 2.14 lakh

With regard to actual product improvement and actual process improvement the responses were as shown in Table – 2.

Table 2: Number of Product & Process Improvements made by Enterprises

	Product Improvement	Process Improvement
Major Changes		
Maximum	4	5
Minimum	0	0
Average	1.31	1.0
Minor Changes		
Maximum	9	4
Minimum	0	0
Average	1.84	1.4

Though the tables are self-explanatory, a few features are noteworthy. These small and medium enterprises had an average of five persons as specialists in R & D cell and used on an average five sources to collect product and process development information. In so far as number of qualified persons in organizations is concerned, as observed from the value of average, which is 9, it is to some extent skewed towards the lower number of qualified persons. There were roughly 50% entrepreneurs who were general graduates. Expenditure on R & D per year on an average was Rs. 2.14 lakh. There was no organization which did not implement any product and process improvement. There was sufficient variability in the data (though this is not shown here), which prima-facie indicated that there could be certain statistical relationships.

To achieve the second objective of the study, the six independent variables mentioned earlier were regressed on product improvement capability and process improvement capability separately.

A step-wise regression was used to check the changes in the explanatory power in the equation. Attempt was made by dropping collinear variables to see whether there were changes in the coefficient of determination. It may be mentioned here that the multi-co linearity is not at all severe in both the equations. Therefore, dropping variables as a remedial measure did not lead to any significant improvement in the result. The results of the regression equations are given in Table – 3 for product improvement and Table – 4 for process improvement capabilities.

Table 3: Regression results with Product Improvement Capability as Dependent Variable

Model Variables	Unstandardized Coefficients β	Std. Error	Standardized Coefficients Beta	t	Sig.	R^2
1 (Constant)	-8.007	2.374		-3.373	.002	0.70
Expenditure on R & D	-6.344E-06	.000	-.460	-2.455	.021	
Entrepreneur's Education	-3.120E-02	.384	-.011	-.081	.936	
Qualified persons in the Orgn.	4.688E-02	.053	.106	.882	.386	
External Links	.760	.180	.473	4.213	.000	
Specialists in R & D	.330	.064	.902	5.161	.000	
Access to finance	-.265	.960	-.035	-.276	.784	

Table 4: Regression results with Process Improvement Capability as Dependent Variable

Model Variables	Unstandardized Coefficients β	Std. Error	Standardized Coefficients Beta	t	Sig.	R^2
1 (Constant)	-3.851	2.738		-1.407	.172	0.42
Expenditure on R & D	-1.564E-06	.000	-.143	-.623	.539	
Entrepreneur's Education	1.058	.456	.457	2.322	.029	
Qualified persons in . the Orgn.	-7.348E-03	.062	-.020	-.119	.906	
External Links	.408	.210	.305	1.942	.064	
Specialists in R & D	8.176E-02	.067	.261	1.220	.234	
Access to finance	-2.905	1.117	-.454	-2.601	.015	

(i) Product improvement capabilities

As mentioned earlier product improvement capability was used as dependent variable and the above mentioned six independent variables were used as explanatory variables. As may be observed from the said Table-3 two variables namely, external linkage and specialists in R&D are highly significant at 0.00 level of significance. The variable, namely, expenditure on R&D is also significant at 0.02 level of significance. But it has a negative sign with the slope coefficient indicating an inverse relationship between the product improvement capability and expenses on R&D. However, looking at the absolute value of the slope coefficient relating to the said variable it is observed that the elasticity associated with this will be highly insignificant. Further, the standardized coefficient which suggests the relative importance of the independent variable reveals that specialists in R & D and external linkage are the most important variables explaining the variability in the dependent variable. The slope coefficient relating to variables like educational level of entrepreneur, qualified persons in organization and access to finance are not statistically significant. Moreover, the standardized b coefficient are also very less relating to these variables.

Therefore, it is evident that no conclusion can be made about the influence of these independent variables on the product improvement capability.

(ii) Process improvement capability

The above mentioned six independent variables were used as explanatory variables to explain the variability of process improvement capabilities. The output relation to the regression equation has been summarized in Table - 4. The statistics presented in the said table suggests that the independent variables, namely, external linkage and entrepreneur's education are statistically significant. Although the variable, specialists in R&D is having a positive relationship with process improvement capability, it is significant at a very low significance level. Access to finance is statistically significant, but has a negative sign suggesting an inverse relationship with the dependent variable.

This appears to be an unusual finding since access to finance should have a positive relationship. It may be mentioned that sometimes, such change in direction in relationship occurs due to presence of multi-co-linearity, but it is observed that in this case the extent of multi-co-linearity is relatively less. However, since the co-efficient is relatively very small, it is unlikely to affect the predictive efficiency.

The slopes of the variables like expenditure on R&D and qualified persons with organization were observed to be not statistically significant. Therefore, no conclusion can be made about their impact on process improvement capability. The standardized coefficient (Beta) suggests that entrepreneur's education, external linkages and specialists in R&D are relatively more important in explaining the variability in the dependent variable.

To achieve the third objective of the study, the principal component method of factor analysis was used and efforts were made to carve out combinations of variables, which explain the important features for product and process improvement.

Table 5 : Rotated Component Matrix[a]

	Component		
	1	2	3
VAR00001	.381	.140	.583
VAR00002	.827	5.956E-02	-.212
VAR00003	.668	.413	.172
VAR00004	.856	.175	-5.844E-02
VAR00005	.282	.786	-.160
VAR00006	-7.500E-02	.795	.177
VAR00007	.690	.512	.112
VAR00008	.382	.638	4.208E-02
VAR00009	.264	.643	1.288E-02
VAR00010	.632	.462	.405
VAR00011	.334	7.837E-02	-.825

Extraction method : Principal Component Analysis.
Rotation Method : Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations

The factor loading of variables significantly explaining the factor have been identified and their respective factor loadings have been mentioned. Eigen values for the factors have also been mentioned under each factor. A cut off point of 0.33 has been taken in identifying the variable (s) under each factor. As mentioned in the table we have carved out three factors, which mostly explain the product and process improvement capabilities. The output of the factor analysis is summarized in Table – 5 and Table - 6.

The results of factor analysis suggest that technological alertness and efforts represented by Factor-1 is the most important one explaining about 30% of the variation. Factor 2 can be termed as external links and this factor explains about 25%. Factor 3 is constituted of only

Table – 6 **: Results of Factor Analysis**

	Factor - 1	
4.	Strong technological collaboration	(0.85)
2.	Number of technically competent people	(0.83)
7.	Affiliation with technical association	(0.69)
10.	Existence of technical library in the company	(0.63)
3.	Govt. support for technology	(0.67)
	EV 4.86 P.V. 30%	
	Factor - II	
5.	Hiring of technical consultancy	(0.76)
6.	Technical people with experience in other organization	(0.79)
8.	Attending refresher course and training programme	(0.63)
9.	Frequent visit to other plants and industrial units	(0.64)
	EV 1.46 PV 25%	
	Factor - III	
	Tech qualification of the entrepreneur	(0.59)
	EV 1.08 PV 12.00	
	Total P.V. 67%	

one variable viz., technical qualification of the entrepreneur with a percent variation of 12%. Thus, the three above factors explain about 67% of variation, which is quite satisfactory.

VI CONCLUSION

On the basis of the above findings and discussions, it is found that amongst the small and medium scale enterprises the efforts put on variable, to achieve product and process improvement capabilities vary widely. Similarly, the small and medium enterprises also vary widely in terms of their product and process improvement capabilities. The relationship shown by the multiple regression analysis sufficiently point at the two variables viz., number of specialists and the extent of external links as the most important determinants of product and process improvement. Besides, in case of process improvement the entrepreneur's qualification also has come out as an important determinant. The results of factor analysis also corroborates the above finding. The factor analysis shows that two factors viz., technological alertness and efforts and external linkages significantly explain the variability in product and process improvement. These two different analyses essentially emphasize the importance of skilled manpower and external technological alertness.

In general, literature on product and process improvement indicates a large number of variables responsible for product and process improvement capabilities in the small and medium sectors. However, this study to a great extent establishes that significant explanation can be given to product and process improvement by primarily two variables. In planning of product and process improvement programme this finding can be of significant value to the entrepreneurs as well as to the policy makers.

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Performance & Integration of Global Factoring Services - An Empirical Analysis*

N.P. Tripathy[1]

Abstract

The dynamics of globalization is now a major force in shaping development of nations. The International Capital Market facilitated cross country financial flows which contribute to a more efficient allocation of resources. Financial integration depends upon the flow of funds from one market to another and one country to another. Factoring Services have created a new energy to the financial market world wide. It is universally accepted as vital to the financial needs of particularly small and medium sized business. It plays an important role in developing and emerging countries. Factoring is growing in significance, especially in the context of the globalization of trade and finance. The world economics have now become market oriented in approach. So keeping this in view, the present study analyses the relationship between world domestic and international factoring in the framework of risk and return characteristics. The study used single factor regression model to determine the significance of the difference of variance in domestic and international factoring to tap the world market with greater confidence and resource strength.

I. INTRODUCTION

The process of economic liberalization in general has opened up new vistas for the growth of the financial service sector. The factoring services have been introduced to ease the problems of collection of debts and delayed payments from the debtors. Factoring is a global industry with vast turnover. It offers various advantages like consistent cash flow, lower administration costs, reduced credit risks and more time for core activates. Both the domestic and international factoring are gaining popularity at an impressive rate. It is now accepted universally as vital to the financial needs of particularly small and medium sized business. Factoring has become well established in developing countries as well as in the highly industrialized countries. The factoring growth is 66 percent from 1998 to 2003. The top three countries in 2003 were the united kingdom (195 billion USD), Italy (160 billion USD) and the united states (98 billion USD). The volume of factoring is very high in Europe (about 663 billion USD), showing a growth of 84 percent from 1998 to 2003, while in America it is 126 billion USD, a growth of 14 percent. The volume of factoring in Asia is 107

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1. Associate Professor, ICFAI Business School, Bhubaneswar e-mail: nalini_prava@yahoo.co.in

billion USD of which the share of Japan is 73.4 billion USD and that of Taiwan is 19.3 billion USD. The share of India is a mere 12 percent of the world volume but its growth over the last five years is in the tune of 828.2 percent. The factoring is relatively very popular in USA as compared to Canada, Brazil and others. The USA accounts for 77 percent of total factoring in American continent, while Brazil is 11% and Mexico and Canada mere 4 percent and 3 percent respectively in 2003. The volume of turnover by product group is exhibited in the table-I

Table-I Turnover By Product Group (in millions of EUR)

	1999	2000	2001	2002	2003
Invoice Discounting	40,263	55,787	67,759	74,815	77,516
Recourse factoring	52116	58605	60925	6383	73169
Non Recourse Factoring Collections	116491	144208	152738	15651	177173
Total	16402	16028	10318	1564	12836
Domestic Factoring FCI	225,273	274628	29174	310796	340694
Export Factoring	12915	15906	1331	14649	21606
Import Factoring	6432	7447	7853	8069	8915
Total International Factoring FCI	19347	23353	21163	22718	30521
Grand Total FCI	**244620**	**297981**	**312902**	**333514**	**371215**
World Domestic Factoring	523485	578994	644659	681281	712657
World International Factoring	33392	44843	41023	42916	47735
World Total	**556877**	**62384**	**685682**	**724197**	**760392**

Sources: Factors Chain International

In the various Asian countries, the growth of factoring has been dramatic while in Latin America, financial institutions continue to join the industry. Similar growth has occurred in central Europe, the Baltics and the middle East. International factoring provides a simple method of financing regardless of whether the exporter is a small organization or major corporation. A factor can provide exp0rtess with 100 percent protection against the importer's inability to pay. One advantage of export factoring has proved to be very attractive to international traders. It is now seen as an excellent alternative to other forms of trade finance. Factoring services have become available in well over 50 countries, including many developing nations. Currently FCI network counts 180 factors in 54 countries, actively engaged in more than half of the world's cross- border factoring volume. 2003 shows an 11percent growth for world international factoring, according to the latest euro denominated figures for the industry. countries. In US dollar terms, the growth was an even more impressive 32 percent. In view of the impressive growth of factoring in a number of regions for many years, it is desirable to examine the trend and performance of factoring services in the Global context.

II. LITERATURE SURVEY

Factoring has played a major role in the commercial and economic development of countries.

Moore (1959) has mentioned that extension of credit by factors provides a tremendous source of necessary working capital for manufacturers of various kind of goods. He has added that the modern function of a factor grows in response to the needs of commerce in a field so specialized that the needs cannot be adequately provided by ordinary lending institutions. He has concluded that the remarkable growth of factoring in modern times is a testimony to its demand.

Shayetal (1968) found three reasons for growth of factoring business. First this business is relatively stable, second the rate of return is higher, and third, the factored accounts receivable provides a source of future bank customers for loans or deposits.

Maberly (1979) observed that the factoring services has great value to growing companies.

Kohnstamm (1999) mentioned several reasons for the success of factoring business: opportunity to get a consistent cash flow, lower that in most an activities administration cost, reduced credit risk, offering service to a variety of companies and simplification of the products etc.

Kalyansundaram committee (1998) in India in its report, that factoring services can serve the cause of effecting fast economic development in the developing economics as well . International factoring survey (1998) has also reached the same conclusion.

III. OBJECTIVE OF THE STUDY

The national financial systems of various countries get increasingly integrated across the borders and hence influence other markets. The national financial markets of major industrial countries are fast integrating globally and there is considerable weakening of the distinction between world domestic factoring and international factoring. Hence the present study has the objective of finding out the necessary facts underlying the world domestic and International factoring. This paper also evaluates the performance and integration of world domestic and International factoring in the framework of risk and return characteristics.

IV. TESTING OF HYPOTHESIS

The study tests the following hypothesis in respect of integration, performance of the world domestic and international factoring business.

- In each continent, factoring business is earning significantly higher return than world factoring business.
- The world domestic factoring business is significantly earning higher return than world international factoring business.
- The volatility of each continent factoring business is significantly higher than world factoring business.
- Each continent factoring business is significantly interrelated with world factoring business.
- The movement of each continent factoring and world factoring business are in the same direction.
- Factoring business is concentrated in a few countries only.

V. METHODOLOGY

For the purpose of study, the time series data on world total factoring turnover, continent wise, world total factoring companies, world domestic factoring and international factoring have been taken from the year 1998 to 2004. The required date have been collected from the Factors Chain international.

The return are calculated in two ways:

i) The continuously compounded return is measured as log(Pt / Pt-1) where Pt stands for the closing price on day t. This is referred to as the 'Price Series'.

ii) The simple return in the log scale are constructed as

$$\frac{\log(P_t) - \log(P_{t-1})}{\log(P_{t-1})}$$

This is referred to as the 'Return Series'.

To measures the performance of global factoring, regression model has been used. Statistical tools like skewness and kurtosis have been used to determine the behaviour of global domestic and international factoring. Further, correlation has been determined to find the presence of higher explanatory power for domestic and international factoring. A statistical software SPSS is used for the purpose of testing.

VI. EMPIRICAL ANALYSIS

The Table-2 presents the five year growth of return of Europe, America Africa, Asia, Australia and world's factoring companies. It is evident from the table that the mean return of Europe, Asia and Australia is higher than the world return. So it suggests that the performance of these continents is higher than other continent. It is also observed from the table that the standard deviation of all continents is higher than the world. So it is evident that the variability of the entire continent is higher than the world. That the higher volatility leads to higher return is noticed in only Europe, Asia and Australia. So some times volatility does not lead to high return. The normality of

Table-2 Five year Growth of Return of five continent and world factoring companies.

	Mean	S.D	Skewness	Kurtosis
Europe	13.20	5.72	-.767	.241
America	3.57	14.98	.856	.039
Africa	7.46	13.59	1.550	3.118
Asia	8.91	18.70	-.016	-2.93
Australia	32.86	16.26	-.334	-1.82
World	10.90	6.85	1.301	1.67

distribution is measured by co-efficient of skewness and kurtosis. If the distribution is normal, the co-efficient of skewness will be equal to '0' and that of Kurtosis 3. But it is found from the table that there is lack of normality of all five continents with world factoring companies by examining the co- efficient of skewness and Kurtosis.

The co-efficient of correlation measures the degree of relationship among the various countries. It is also identifies, how change in one variable effects the change in other variable. The table-3 depicts the correlation co-efficient of five continents and world factoring. It is found from the table that America and Africa

Table –3 Correlation of five continents with world factoring

	World	Europe	America	Africa	Asia	Australia
World	1.00					
Europe	.827	1.00				
America	.974**	.803	1.00			
Africa	.898*	.794	.798	1.00		
Asia	.322	-.263	.320	.267	1.00	
Australia	.594	.292	.675	.470	.453	1.00

** Significant at 1% level (2tailed)
*Significant at 5% level (2 tailed)

exhibit a significant correlation of 0.979 and 0.898 with world factoring. But some of the major continents show no correlation at all. So it is inferred from the table that factoring business is not growing significantly in the context of the globalization of trade and finance.

The test of integration is measured by regression model. The table-4 presents the single- factor regression of five continents with world factoring business. The observed `F' value is higher than the theoretical `F' value only in America and Africa. So the regression is not significant.

Table 4 : Single factor Regression of five continents with world factoring

	R^2	$AdjR^2$	Inter cept	Beta Coefficient	F Value	T Value
Europe	.684	.578	-2.17	.827	6.489	2.547
America	.958	.944	9.30	.979	67.932**	8.242**
Africa	.807	.743	7.52	.898	12.541	3.541
Asia	.103	-.195	9.85	.322	.346	.588
Australia	.352	.136	2.68	.594	1.632	1.277

** Significant at 4%

The world factoring is not a significant explanatory factor of the variation in all the continent except America and Africa.

The table-5 presents the return of world domestic and international factoring in continent wise. It is inferred from the table-5 that the mean return and variation of Europe is higher than America, Africa, Asia and Australia in domestic factoring. Similarly, the mean return and variation of Europe is higher than in other continent in international factoring. It is also apparent from the table that the return and variation of all the continents of domestic factoring is higher than the international factoring. So the return in domestic factoring is accompanied by higher levels of volatility as compared to international factoring companies. So it suggest that the performance of domestic factoring is better than international factoring.

The time varying shifts of mean and volatility of domestic and international factoring of five continents is exhibited in the table-6. It is found from the table that the domestic and international factoring returns are not normally distributed. So it may be necessary to run a more rigorous test of normality. The table-7 shows the correlation of world domestic factoring. It is observed from the analysis that

Table-5 Return of world Domestic and international factoring

	Domestic factoring		International factoring	
	Mean	S.D	Mean	S.D
Europe	18257.78	37898.03	1275.60	2181.33
America	9989.70	24006.62	464.50	1010.99
Africa	1880.00	3005.14	66.66	47.25
Asia	5124.75	14911.70	443.75	1078.50
Australia	6953.00	9479.47	36.5	33.23

Table 6 Co-efficient of skew ness and Kurtosis for world domestic and International factoring

	Domestic factoring		International factoring	
	Skewness	Kurtosis	Skewness	Kurtosis
Europe	2.928	8.285	2.42	5.33
America	3.03	9.34	2.69	7.43
Africa	1.73	0	1.39	0
Asia	3.77	14.58	3.46	12.63
Australia	0	0	0	0

Table 7 Correlation of world domestic factoring

	Europe	Africa	Asia	Australia	America
Europe	1.00				
Africa	.296	1.00			
Asia	.0.30	.354	1.00		
Australia	-1.00**	-1.00**	1.00**	1.00	
America	-.129	.988	-.155	-1.00**	1.00

** Significant at 1% level (2-tailed)

Australia is negatively correlated with Europe and Africa. It is also interred from the table that all the continent are not correlated with each other. So the above analysis shows that the direction of movement of world domestic factoring has been inconsistent.

The table-8 shows the correlation of world international factoring. It exhibits that Asia is positively correlated with Europe

Table 8 Correlation of world International Factoring.

	America	Europe	Africa	Asia	Australia
America	1.00				
Europe	.093	1.00			
Africa	-.277	.938	1.00		
Asia	-.272	.566*	.923	1.00	
Australia	-1.00**	-1.00**	-1.00**	-1.00**	1.00

*Significant at 5% level (2 tailed)

* * Significant at 1% level (2 tailed)

at 5% level of significance. Australia is negatively correlated with America, Europe. Africa and Asia. It also shows that some of the continents show no correlation at all in case of international factoring. The table 9 shows that in Europe, America and Australia domestic factoring shows significant correlation with international factoring at 1% level. So it suggests that the direction of movement has been consistent only in these three continents.

The table 10 presents the single factor regression of world domestic and international factoring. The observed `F' value is higher than the theoretical `F' at 1% level of significance only in Europe and America. So domestic factoring is not a significantly explanatory factor of the variation in factoring business except in Europe and America.

Table 9 Correlation between world domestic and International factoring

		Domestic	International
Europe	Domestic	1.00	
		International	.635** 1.00
America	Domestic	1.00	
		International	.940** 1.00
Africa	Domestic	1.00	
		International	.940** 1.00
Africa	Domestic	1.00	
		International	.978 1.00
Asia	Domestic	1.00	
		International	.211 1.00
Australia	Domestic	1.00	
		International	1.00** 1.00

**Significant at 1% level (2 tailed)

Table 10 Single- factor Regression of world Domestic and International factoring

	R^2	Adj r	F Value	Intercept	Beta coefficient	T value
Europe	.403	.380	17.575*	4183.02	.635	4.192*
America	.884	.869	60.925*	-380.370	.940	7.805*
Africa	.957	.915	22.40	2267.76	-.978	4.733
Asia	.045	-.024	.655	3827.559	.211	.809
Australia	.964	.928	26.630	-2555.64	.982	5.160

* Significant at 1% level

The table -11 depicts the return of ten largest factoring turnover countries. The return of France is highest among all the countries followed by Switzerland, Italy.

The table-12 shows the correlation of ten largest factoring countries. It exhibits that Swaziland is significantly correlated with Germany and Italy at 5% level of

Table 11 Return of Ten Largest factoring turnover countries

Countries	Mean	S.D	Skew ness	Kurtosis
Finland	.65	94.30	1.45	2.21
France	53.26	54.22	.77	1.69
Germany	-21.95	39.02	1.26	1.41
Italy	41.17	80.92	-.29	-3.981
News Zealand	2.18	23.75	-.24	-3.97
Spain	20.92	99.71	1.50	2.74
Sweden	-8.31	87.07	1.97	3.93
UK	-.74	18.16	.02	-5.78
USA	19.31	11.11	.22	-3.58
Switzerland	44.70	93.65	-.82	-1.28
World	20.79	8.96	-.76	-1.63

Table 11 Correlation of Ten Largest Factoring countries

	World	Finland	France	Germany	Italy	News land	Spain	Sweden	UK	USA	Swazi
land											
World	1.00										
Finland	-.791	1.00									
France	.111	-.443	1.00								
Germany	.556	-.796	.878	1.00							
Italy	-.410	.829	-.838	-.939	1.00						
News Zealand	-.520	.384	.656	.244	-.156	1.00					
Spain	-.932	.845	.049	-.433	.404	.747	1.00				
Sweden	.577	-.042	-.695	-.343	.500	-.718	-.562	1.00			
UK	.890	-.533	.226	.545	-.273	-.170	-.667	.542	1.00		
USA	.071	-.227	-.603	-.367	.113	-.841	-.418	.285	-.350	1.00	
Swaziland	-.343	.721	-.937	-.965*	.975*	-.354	.264	.567	-.309	.330	1.00

* Significant at 5%level.

significance. So the findings support that the factoring business is concentrated only these two countries. It is apparent from the analysis that most of the countries are negatively correlated with each other. So it suggest that inspite of globalization of trade and finance factoring services is not able to bring fast economic development in the global context.

VII. CONCLUSION

This paper has examined and ascertained the characteristics of world factoring business. The empirical results reported here do not lend support to the hypotheses considered in the study. The evidences exhibit that, except a few, there is no correlation between factoring services in some of the continents. The direction of movement of world domestic factoring and international factoring has been inconsistent. Domestic factoring dominates the market share in the total factoring business, but the factoring business is not growing significantly in the context of the global trade and finance.

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Foreign Direct Investment: A Review of Literature*

Amar KJR Nayak[1]

Abstract

The focus of this paper has been to compile and classify the various research studies on foreign direct investment with a special reference to developing economies. This paper aims to provide a critical analysis of the various streams of research studies on foreign direct investment and outlines the potential areas for future research. In its analysis, this study identifies four major areas of research in Foreign Direct Investment, viz., (a) determinants of direct investment by foreign firms, (b) policies on foreign direct investment by the host countries, (c) impact of foreign direct investment on host countries, (d) strategies and performance of foreign firms in host country. In the final analysis, the paper identifies potential areas for research that will add to the epistemology of International Business with reference to operations of multinational enterprises in developing countries.

I. INTRODUCTION

International trade and investment have been of significance to the growth and development of the world economy. The developed countries and the developing countries have been debating and negotiating on trade and investment policies since the Bretton Woods Conference in 1944. In the last two decades, the issue has been of much interest to policy makers at the government level as well as at the firm level. Within international trade and investments, Foreign Direct Investments (FDI) has been a major area of study. Given its importance to the Global economy, FDI has been an issue of interest to researchers of several fields of studies like international business, development economics, international trade, economic and business history and multinational enterprises.

Foreign Direct Investment (FDI) depends upon two key agents, viz., a firm desirous to invest in another country, i.e. investing foreign firm and a country open to foreign investment i.e. host country. The interplay between these two agents determines the factors that effect flow of FDI and

* Received November 9, 2005.

1 Assistant Professor, General Management, Xavier Institute of Management, Bhubaneswar. Email: amar@ximb.ac.in

subsequent relationship between these two agents generates varied outcomes for each. Most of the available literature on FDI can accordingly be classified into four major areas of studies, viz., (a) determinants or motivations of FDI for investing firm, (b) host country policies to attract FDI, (c) impact of FDI on host economy, and (d) performance of investing firm in host country (Please refer to Table 1). This simple classification, however, does not include all studies from the vast literature on FDI, international business and multinational enterprises as they are beyond the scope of the present study.

Table 1: Classification of FDI Studies

	Determinants of / Policies for FDI	Strategy/Performance of FDI
Foreign Firm	1 Resource Seeking Market Seeking Efficiency Seeking OLI Paradigm	4 New Area of Research
Host Country	2 Liberalization Privatization Globalization	3 Heterogeneous Impact

A brief discussion of these four major research areas will provide a backdrop to the questions that have been raised in this study and will also bring to fore the relevance of potential areas suggested in this paper for further research in the future.

II. DETERMINANTS OF FDI FOR INVESTING FOREIGN FIRM

Literature on the factors that motivate foreign firms to invest in host countries, especially industrially developing countries is expansive. The motivational factors identified in these studies have been discussed with reference to the country of origin of the investing firm, which in most cases are from the industrially developed countries of America, Europe, and Japan and the host countries, which are usually from developing countries. Foreign firms have been motivated to invest in the developing host countries primarily on account of availability of resources and markets in the host countries. Foreign firms have also been motivated by lower factor costs for production in the developing countries. Further, locational advantage and ownership advantage have been key driving factors for foreign firms to invest in host countries.

Dunning (1988) has aptly summarized the key determinants of FDI for foreign companies. The 'Ownership-Location-Internalization' an eclectic paradigm of Dunning (1988) includes the motivations of resource seeking, market seeking, efficiency seeking, and strategic asset seeking. Later Dunning (1998) reasoned that multinational enterprises (MNEs) invested in a host country only when they found both ownership advantage and location advantage. He has advanced his argument that location advantage as an increasingly important determinant. Indeed many of the previous studies have used Dunning's framework to explain factors that have motivated firms to undertake FDI.

While some have contended that internalization is the cornerstone of the OLI paradigm and hence the OLI paradigm is an extension of internalization as expounded by Williamson (1985). However, Dunning (1998) counterargued that internalization of Williamson (1985) only explains the existence and growth of multi-activity firms and not the character of MNEs. However, MNEs internalize cross-border markets based on the comparative cost and benefit between the two locations i.e., in the home economy and the host economy of the MNE.

To seek resources in the host countries has been a major driving force behind FDI in the late 19th and early 20th century. In a study on the history of FDI, Jones (1996) finds that towards the beginning of the twentieth century, the initial motivation for firms to engage in FDI was to seek resources in the foreign markets, and he notes that by the end of the Second World War many of the world's natural resources were in the hands of large multinational enterprises. Dunning (1998) and Rugman and Verbeke (2001) also identify 'resource seeking' among many other factors as a motivation of firms to go outside their home markets. Recent studies of Chandprapalert (2000) and Park (2003) with reference to FDI from USA in Thailand and FDI from Japan in USA respectively provide empirical evidence to resource-seeking factor behind FDI.

Large unexplored markets have been another factor for FDI by foreign firms in the developing countries. Vernon's (1966) discussion of international product life cycle highlighted this phenomenon. Foreign firms had to go out of their home markets that had matured to new markets in the less developed and developing countries to sell their products. Milner and Pentecost (2001) discussed the American firms investing directly in UK owing to the large market size in UK. Similarly, studies of Chaudhury and Das (2001) and Park and Lee (2003) show that the American firms invested in China to take advantage of the potential market in China. Anand and Delios (1996) show that the Japanese firms were motivated to seek markets in India.

Yet another motivation for firms to engage in FDI has been to take advantage of the low cost of production in the host countries. Vernon's (1966) explained FDI of American firms in UK and Canada on this basis. Increased FDI in developing countries in Asia in the last two decades have been largely explained from this point of view. Vertical integration of US MNEs in a host country as per Tang (2002) was induced by the comparatively low labor cost in the host economy. Similarly, Walkenhorst (2004) argues that FDI in Poland was determined by lower capital cost in Poland. Yong, et al (2000) found that favorable interest rates and wage rates influenced foreign companies to invest in Australia.

Some have also argued that host country's path and pace of structural reforms and openness to trade have influenced firms on FDI decisions. Resmini (2000) finds that the path and pace of structural reforms was a crucial factor in attracting FDI in the Central and Eastern European countries (CEEC). Galego, et al, (2004) imply that potential market demand, openness to world trade, and lower relative labor compensation levels were responsible for the flow of FDI into CEEC. Chakrabarti (2001) in his sensitivity cross-country regressions, finds that a host country's openness to trade has a better correlation with its inward flow of FDI than with other variables like tax, wage, exchange rate, tariff, growth rate of GDP or trade balance.

Political instability, low intra-regional trade and small size of national markets in the Balkans region have been cited as reasons for low FDI in the region by Slaveski and Nedanovski (2002). Ok (2004) provides a similar explanation to the lower amounts of FDI in Turkey. In another case Zhao and Levary (2002) found that flow of FDI in the retail industry was dependent upon the risk and uncertainty in the economic and political climate in a host country. Sara & Newhouse (2001) interpreted openness in trade and business as a part of efficiency seeking measures of foreign firms. They asserted that firms seek locations that economize bounded rationality and minimize losses from opportunism. While a fair legal system and friendly Government policies in the host country can economize bounded rationality, a stable and unambiguous commercial code to protect against dishonest local agents minimizes losses from opportunism.

Gaining ownership of strategic assets and location advantage has been shown to be other key factors for foreign firms while deciding on whether or not to invest in a host country. Cieslik & Ryan (2002) show that FDI from Japanese firms in East European countries has been largely motivated by scopes for greater ownership in the host country. It is observed that more of the Japanese firms chose wholly owned subsidiaries over minority-owned joint ventures while entering the East European host countries.

On a similar argument, Choe (2000) discussed Japanese FDI in the Electrical Machinery and Appliances industry in the United States. He argued that Japanese firms were motivated to invest in USA because of ownership advantage over knowledge-based assets and locational advantage of agglomeration economies and skilled labor in the host economy. Anand and Delios (1996) show that Japanese firms were motivated by location specific productive resources to enter China.

Ellis and Fausten (2002) also indicate in their comparative study of Japanese, Korean and American firms that ownership structure has significant implications for luring initial FDI. Rajib, *et al* (2003) also indicate that many foreign firms in India moved from efficiency seeking to ownership seeking in the recent years after 1991. A summary of these studies is shown in Exhibit 1.

The approach of this strand of research seem to explain a general business behavior and tries to provide theoretical explanation to the motivation of MNEs to invest directly outside their home economies. All the studies relating to determinants of FDI have been looked at from the perspective of firms seeking direct investments in foreign countries. It is assumed that once FDI is parked in a host country, the host country will invariably benefit, and therefore the determinants of FDI is sacrosanct to the growth of FDI world-wide.

The determinants of FDI for multinational enterprises are seen from a global perspective of the enterprises operation and not in terms of MNEs business unit in the host country. In other words, MNEs headquarters seem to look at the overall performance of its global operation than performance of individual business units in respective host countries. All the major determinants like those of resource seeking, market seeking or efficiency seeking has been seen from the interest of multinational enterprises. In other words, multinational investments have been seen as a one-way process and has ignored that direct investment in a foreign host country is very different from making investments in the domestic market of the multinational enterprise.

III. POLICIES ON FDI BY THE HOST COUNTRIES

Host countries have invited FDI with the hope that it would bring along with it an increase in industrial productivity, growth in trade and commerce, and overall economic development. Much research has been done on the policies of the host countries that help attract FDI. Most of these researches suggest that the host economies in the developing countries should liberalize their economy, privatize business and globalize in order to get the share of FDI into their respective countries.

In order to invite FDI, less developed nations have been advised to provide unique, non-replicable and created assets to MNEs interested in investing in their

Exhibit 1: Determinants of FDI

Focus of Study	Author [Year]
1. Resource seeking	Dunning [1988], Jones [1996], Dunning [1998], Rugman & Verbeke [2001], Chandrapalert [2000], Park [2003]
2. Market Seeking	Vernon [1966], Milner & Pentecost [2001], Park & Lee [2003], Anand & Delios [1996]
3. Efficiency Seeking	
a. Low Production Cost	Vernon [1966]
b. Low Labor Cost.	Tang [2002]
c. Lower Capital Cost.	Walken Horst [2004]
d. Favorable interest rates and wage rates.	Yong, et al [2000]
e. Path & Pace of Structural Reform in Central and Eastern European countries (CEEC).	Resmini [2000]
f. Market demand, openness to world trade, and lower relative labor compensation levels in CEEC.	Galego, et al [2004]
g. Host country's openness to trade.	Chakravarti [2001]
h. Political stability, intra-regional trade and size of market with regard to Balkan region & Turkey.	Slaveski & Nedanovski [2002] & Ok [2004]
i. Risk and uncertainty in the economic and political climate.	Zhao & Levary [2002]
j. Openness in trade and business	Sara & New house [2002],
k. Gaining ownership of strategic assets & location: Japanese firms in East European countries.	Cieslik & Ryan [2002]
l. Japanese FDI n the electrical machinery & appliances industry in USA.	Choe [2000]
m. Location specific productive resources: Japanese firm in China.	Anand & Delios [1996]
n. Ownership structure.	Ellis & Fausten [2002]
o. Move from efficiency to ownership.	Rajib, et al [2003]

economics. Host Governments that provide complementary created asset-based location-specific advantages are considered to be successful in attracting FDI. Further the host countries have to provide good governance along with the right kind of immobile assets and allow mobile investments to be locked into these assets as in Narula and Dunning (2000).

Brewer (1992) claimed that Government policies are integral to the internalization theory of FDI. Wage subsidies, training grants, relaxation of industrial relations laws, direct subsidy, sales tax exemption, subsidized building, subsidized transportation, subsidized loans, subsidized equity, and guarantee against expropriation attract FDI. Similarly, Pradhan (2002) proposed that incentives like direct tax grants, employment grants and training allowances, subsidies on land and building purchase, interest subsidies, tariff protection, exemption from imports and exports duties, exemption from income tax, dividend and capital gains, guarantee for currency conversion, guarantee for profits and capital repatriation can attract FDI.

It has also been suggested that host countries can be successful in seeking FDI if they provide investment support package to the MNEs. Host countries are to first target the appropriate MNEs and then tailor-make an appropriate package of incentives for those MNEs as in Mudambi (1999). Host countries should pay attention to the political system, the quality of democracy and rule of law to make themselves desirable to MNEs as in Oliva and Batiz (2002). There has been a proliferation of incentives offered by competing host countries to allure MNEs to invest in their economics. Rolfe, *et al* (1992) showed that fifty-one different types of incentives were being offered by the developing countries to attract FDI.

The policy prescriptions to developing countries for attracting FDI looks like the wish list of MNEs to reduce cost and increase profits. What appears from the above two stands of FDI research is that if the policies of the host country can reduce the cost of investment, then FDI can be easily attracted. A major problem with these studies is that policies suggested to host countries for attracting FDI have been derived from factors that motivate MNEs to engage in FDI. While this may look logical, the efficacy of such measures can be evaluated only after looking at the outcome of FDI on both the host country and the investing foreign firms in a host country. There are indeed a number of studies that argue that the government of the host country have to be alert to the liberal polices for free global trade and investments (Trivedi, 2004). A summary of these studies is shown in Exhibit 2.

The studies in this strand of research seem to emanate from the arguments placed in the previous stream of study, viz., determinants of FDI. These studies look like a campaign to facilitate the firms in

Exhibit 2: Policies of Host Country

Focus of Study	Author (Year)
1. Good governance along with the right kind of immobile assets and allow mobile assets to be locked into these assets.	Narula & Dunning [2000]
2. Wage subsidies, training grants, relaxation of industrial relations laws, direct subsidy, sales tax exemption, subsidy building, subsidized transportation, subsidized loans, subsidized equity, & guarantee against expropriation.	Brewer [1992]
3. Incentives like direct tax grants, employment grants and training allowances, subsidy on land and building purchase, interest subsidies tariff protection, exemption from import and export duties, exemption from income tax, dividend from capital gains, guarantee for currency conversion, guarantee for profits and capital repatriation.	Pradhan [2002]
4. Tailor-made investment support package of incentives for MNEs.	Mudambi [1999]
5. Improve the political system, the quality of democracy and rule of law.	Oliva & Batiz [2002]
6. Identified 51 different types of incentives that one being offered by host countries.	Rolfe, et al [1992]
7. Host countries need to be alert to the liberal policies for free global trade and investments.	Trivedi [2004]

the saturated markets to make investments in the developing countries. The differences in the market structures in the developed, developing and poor countries have not been considered. Further, the concerns of the developing countries in terms of employment generation or enhancing productivity in their respective local economy have been ignored. The policy prescriptions have been visualized only in terms of those factors that will motivate foreign firms to invest in a developing host country.

IV. IMPACT OF FDI ON HOST COUNTRIES

Literature on the impact of FDI on the host country highlights that FDI has had heterogeneous effect on host countries over time and across the world. Wilkins (1994) brought this out very clearly in her study. She argued that FDI had different outcomes in different host country depending on the host country conditions. While some studies show that FDI has benefited a host country, many other studies show that they have had negative impact or no impact on a host country.

Zhang's (2000) study asserted that FDI promoted income growth in the coastal regions of China. Ng and Tuan (2002) also suggested that the upsurge of FDI in China has made a profound contribution to the country's income and asset formation. Ramirez's (2000) study on impact of FDI in Mexico points out that increase in lagged foreign investments have had a positive and significant effect on the rate of labor productivity growth. Ericsson and Irandoust (2001) found that FDI has had a positive impact on economic growth in Norway.

There are several works that argue for the positive impact of FDI in India. Johri (1983) by studying the business strategies of foreign multinational companies in the drug and pharmaceutical industry showed that domestic companies greatly benefited by the investments of foreign pharmaceutical companies in India. Kumar (1990) shows that Indian companies have benefited from the operations of multinational companies in India. Similarly, Kumar (1996) projected that domestic companies benefited from FDI in India. Myneni (1990) & Debroy (1996) argued that free flow of investments and trade are good for the country.

On the contrary, a number of highly compelling studies show that FDI has not been beneficial to host countries. Reichert and Weinhold (2001) study the impact of FDI over twenty-four countries in different stages of development and found that FDI has had a heterogeneous impact. Country specific analyses of host countries show that FDI has not helped them in meeting their national objectives. Trevino, *et al* (2002) argued that FDI inflows by trade liberalization and privatization have not helped to optimize the economic goals of Argentina, Brazil, Chile, Mexico, Peru, and Venezeula. These countries together draw 85% of FDI in

Latin America. A similar observation has been made with respect to FDI in some Scandinavian countries. Ericsson and Irandoust (2001) reported that a relationship between increasing FDI inflow and economic growth could not be established in the case of Finland and Norway.

Host countries have looked for transfer of technology from foreign companies to domestic companies by inviting FDI. Some studies show that even though FDI has had a positive impact, on economic growth it has not been able to bring about a technological spillover on the host country. Technological joint ventures too have not generated spill over effects in most cases. Malairaja and Zawdie (2004) show that FDI with technology transfer constituted a very small portion of total FDI in Malaysia. The local partners in such cases were relegated to activities that hardly involved the challenge of innovation. Deolalikar and Evenson (1989) however have found that purchasable foreign technology has brought about greater adaptive research and development in India.

With respect to impact of FDI on India, Kidron (1965) and Kurian (1966) asserted that FDI had a severe negative impact on the Indian economy. Lall (1999) argued that the nature of exportable items from India were low technology and low valued products and hence not competitive in the world market. The exports and import composition of India is rather deplorable as it can be observed in Principal Exports from India and Principal Imports of India. The trends of foreign exchange reserves of India have also fluctuated severely as can be seen in database of the Reserve Bank of India (2003). Sharma (2000) showed that the growth in exports during 1970-98 from India was not because of increased FDI to India but because of a favorable rupee-dollar exchange rate. Kumar (2003) shows that the large Indian companies have failed to generate enough foreign exchange despite the imports of foreign technology.

Chakraborty and Basu (2001) inferred that trade liberalization policy of the Indian Government did have a positive impact in the short run but on the whole FDI in India tends to displace labor. Sahoo and Mathiyazhagan (2003) showed that FDI had a lesser positive elasticity coefficient than exports when compared with GDP and Industrial productivity. Nayak (2003) showed that while FDI had positive degree of association with exports and import substitution during the 1955-1965, FDI had negative impact on import substitution in the period after 1979 to 2000. Nayak (2002, 2004, 2005) highlighted that FDI on the whole in India has neither been effective for India nor for the foreign companies in India.

Despite growing FDI across the world, there have been severe doubts on the impact of FDI on host countries. Vernon (1972) feared that foreign companies could be the conduits for exercising control over the host country by foreign governments. Chang (2003) criticized developed countries for imposing policy of free trade and investment on developing countries. He argued that developed countries themselves adopted protective measures in the past when they were in developing stage. Similarly, Stiglitz (2002) remonstrated that globalization as pursued by USA and other developed countries have led to a wider global discontent as it failed to deliver what it promised. Yaffe (2003) sees globalization as pursued by the industrially advanced countries as a guest for a new world-order of imperialism. Vernon (1971) explained how sovereignty of nations was at risk with the expansion of multinational companies.

While the studies on determinants of FDI for foreign firms clearly identified the factors that motivate foreign firms to invest in a host country, the studies on policies of developing host countries to FDI showed various incentives that can attract FDI. Despite such understanding FDI in general has had a mixed impact on host countries. Although, Wilkins (1994) points out that the difference in impact is because of the host country, it leaves out the role of foreign firms in the success or failure of both host country and foreign firm due to FDI. The current literature on FDI has focused itself on the above three strands of research on FDI. However, unless equal focus is given on the conduct and performance of foreign firms in host country situation, it is difficult to get a clear picture of the dynamics of FDI in general. A summary of these studies is shown in Exhibit 3.

The impact of FDI across the world has appeared to be heterogeneous in nature. In some countries the impact have been positive and some countries the impact have been negative. Some studies have been carried over a specific period of time or for a specific aspect or for a small economy. Interpretations based on such studies are hard to make. Correlation coefficients in some of the studies have been seen as cause and effect phenomena vis-a-vis the degree of association.

V. STRATEGIES AND PERFORMANCE OF FOREIGN FIRMS IN HOST COUNTRY

There have been a number of studies with reference to the characteristics and structures of multinational enterprises. Birkinshaw and Morrison (1995), Birkinshaw and Hood (2000), Barlett and Ghosal (2002), and Hennart (2000) have focused on the characteristics and structures of multinational enterprises. Vernon (1966) explained the process by which large American firms expanded their operations in Europe and less developed countries. However, research on factors that determine good performance of foreign firms in a host country is still in nascent stage. The determinants of success and failure of firms in host country situation as a fundamental issue in business strategy has been highlighted by Rumelt, et al,

Exhibit 3: Impact of FDI on Host Countries

Focus of Study	Zhang [2001]
1. FDI promoted income growth in the coastal regions of China.	Zhang [2001]
2. FDI has had profound contribution to the country's income & asset formation.	Ng & Tuan [2002]
3. FDI had a positive & significant effect on the rate of labor productivity.	Ramirez [2000]
4. FDI had a positive impact on economic growth.	Ericsson & Irandoust [2001]
5. FDI has had positive impact.	Johri. [1983]
6. Indian companies have benefited from the operation of MNEs in India.	Kumar [1990] & Kumar [1996]
7. Free flow of investment & trade are good for the host country.	Myneni [1990] & Debroy [1996]
8. Purchasable foreign technology has brought about greater adaptive research and development.	Deolalikar & Evenson [1989]
9. Heterogeneous outcomes depending on the host country.	Wilkins [1994]
10. FDI has had a heterogeneous impact.	Reichert & Weinhold [2001]
11. FDI inflows by trade liberalization and privatization have not helped to optimize the economic goals of host countries.	Trevino, et al [2002]
12. Relationship between increasing FDI inflows and economic growth could not be established.	Ericsson & Irandoust [2001]
13. Technology transfer constituted a very small portion of total FDI.	Malairaja & Zawdie [2004]
14. FDI has had a severe negative impact.	Kidron [1965]& Kurian [1966]
15. Nature of exportable items from India were of low technology and low value	Lall [1999]
16. Growth in exports has not been because of FDI but because of favorable rupee-dollar exchange rate.	Sharma [2000]

17. Large Indian companies have failed to generate enough foreign exchange despite imports of foreign technology.	Kumar [2003]
18. Trade liberalization policy led to displace labor.	Chakravorty & Basu [2001]
19. FDI had a lesser positive elasticity coefficient than exports when compared with GDP and Industrial productivity.	Sahoo & Mathiyazhagan [2003]
20. FDI has had in different time periods. Positive impact in a regulatory regime of the host country & had negative impact in the de-regulated period.	Nayak [2003]
21. FDI on the whole has neither been effective for the host country on the investing foreign subsidiary.	Nayak [2002, 2004, 2005]
22. Foreign companies could be conduits of foreign governments exercising control over the host country.	Vernon [1972]
23. Developed countries generally impose policy of free trade & investment on developing countries.	Chang [2003]
24. Globalization as pursued by USA and other developed countries have led to a wider global discontent.	Stiglitz [2002]
25. Sovereignty of nations was at risk with the expansion of multinational companies.	Vernon [1971]

(1994) and more recently by Rangan and Drummond (2004). And, the study of Nayak (2005) with regard to the investment strategy and success of Suzuki Motor Corporation in India highlights the need for a holistic investment strategy especially in an emerging economy.

Success of foreign firms in a host country situation has been attributed to factors like timing of entry, length of operation, distance of foreign firm from a host country, host government policies, technological intensity, and a combined factor of host local partner and conduct of foreign firms and host government.

Rivoli and Salori (1996) argued that timing of investment has been critical for success of foreign firms in host country. Using the concept of timing, Luo (1998) exhibited that early entrants outperformed late movers in terms of local market expansion and asset turnover. Early entrants of FDI achieve superior asset efficiency but are inferior in terms of the accounting performance in the first three years.

Length of operation of a foreign firm in a host country has been contended as a factor for success of foreign firms in the host countries. Carlsson, *et al* (2005) through their survey research, showed that length of operation has been crucial to the performance of Scandinavian firms in China.

Distance of foreign firm from host country has been explained as an important determinant of entry as well as a factor of success of foreign firms in a host country. Ghemawat (2001) argued that different kinds of distances such as; cultural distance, administrative distance, geographic distance, and economic distance between the investing company and the host country affected the performance of foreign firms in a host country.

Patronage from the host Government has been identified as another key to success of foreign firms in host country. In his historical study of private investments in India during 1900s-1939, Bagchi (1972) pointed that the strong political patronage helped the British companies flourish and grow in India. Encarnation (1989) demonstrated that multinational companies fell victim to the process of obsolescing bargain in 1970s by the alliance of local firms, state financial institutions, and regulatory authorities in India. Bjorkman and Osland (1998) attributed the success of foreign companies in China to managing good relationship with the Chinese Government.

Poynter (1986) proposed that success of an MNE depended on the appropriate defense strategy, political strategy and staffing in the host country. He suggested that a global firm may have state of the art technology, exports, and intra-MNE sourcing as its defense strategy. Giving lower priority to the host country may be its political strategy. And, short term technologically oriented staffing may be its staffing strategy. A multi domestic MNE may introduce new products as a defense strategy. High local political knowledge and interaction can be its political strategy and can have long term staffing strategy to be successful in the host country.

The traditional ideas that the success of a foreign firm depends on successfully managing the host government have been concurred by some. Moon and Lado (2000) suggested that the bargaining power of a multinational enterprise lay in its technological intensity, advertising intensity, intra-MNC sourcing, export intensity, staffing policy, and product diversity. They argued that the performance of the MNE will depend on exercising these bargain powers.

Taking the success of foreign firms in India as internal to competence of the British firms, Tomlinson (1989) displayed that the short-term structures created by British expatriates and multinationals to generate immediate success limited their options for future evolution after 1950s.

Andersson *et* al (2001) observed through their survey research of Swedish firms in the US market that technology embeddedness was critical for success. Taggart (1999) through another survey research showed that active involvement of the subsidiary in the local host improved performance of the subsidiary. Chen (1999) through another survey research showed that international performance of multinational firms depended on firm specific assets and the type of ownership with which the multinational entered the host country. On the contrary, Li, *et al* (2000) have showed that capital and technology intensiveness helped in higher performance and not the firm's location or ownership in China.

Franko (2001) observed that the US companies accepted minority ownership in the host countries. Often the 'second rank oligopolists' adopted this strategy. He reasoned that success of these MNEs depended on variety of factors like the kind of local partner, MNE conduct and host government. A summary of these studies is shown in Exhibit 4.

In the above stand of research, several issues like timing, length of operation, ownership by investing firm, asset specificity of foreign firm, distance of investing firm from the host economy, political patronage of the host government toward the investing firm have been identified to be factors for success of a foreign firm in a host country. While each of these factors may be critical to a particular company in a specific host country situation, the study by Nayak (2005) presents a holistic investment pattern for success of foreign firms in a developing host country situation. However, more number of country-

Exhibit 4: Strategy of FDI

Focus of Study	Author [Year]
1. Highlight the importance of studying the determinants of success and failure of firms in host country situation.	Rumelt, *et al* [1994], & Rangan & Drummond [2004]
2. Foreign firms in a developing host country situation can of foreign succeed by adopting a holistic investment pattern.	Nayak [2005]
3. Timing of investment has been critical for success firms in host country.	Rivoli & Salori [1996]
4. Early entrants outperformed late entrants in terms of local market expansion and asset turnover.	Luo [1998]
5. Length of operation of foreign firms in a host country is critical for its success in the host country.	Carlsson, *et al* [2005]
6. Distances in terms of culture, administrative, geographic, economic between investing company and host country affect performance of investing firms.	Ghemawat [2001]
7. Patronage from host Government has been crucial for high performance of foreign firms in host country.	Bagchi [1972] & Encarnation [1989]
8. Managing good relationship with the Chinese . Government	Bjorkman & Osland [1998]
9. Appropriate defense strategy, political strategy and staffing in host country.	Poynter [1986]
10. Multinational enterprise manages the host Government better using its bargaining power of advanced product technology, advertising intensity, export intensity, staffing policy and product diversity.	Moon and Lado [2000]
11. Short-term structures of British firms resulted in their limited success in India.	Tomlinson [1989]
12. Technological embedded ness was critical for success of Swedish firms in the US market.	Andersson, *et al* [2001]
13. International performance of multinational firms depended on firm specific assets and the type of ownership.	Chen [1999]
14. Capital and technology intensiveness helped in higher performance and not the firms location or ownership.	Li, *et al* [2000]
15. Factors like the kind of local partner, MNE conduct and host Government were critical for success of second rank US oligopolies.	Franko [2001]

specific studies especially with regard to various industries needs to be studied to enrich the understanding of success of foreign firms in a host economy.

VI. SUMMARY OF PROBLEMS & GAPS IN THE PAST RESEARCH

From the above study of the existing literature on FDI, there are many potential areas for research in the above category of research studies on FDI. However, there are a few aspects in the above literature on strategy and performance of foreign companies that needs to be looked into. First, the factors like early entry, longer stay, specific asset advantage, distance, and good rapport with host country can give an edge to a foreign firm in a host country. However, whether these conditions by themselves are sufficient for success of a foreign firm remains to be examined. Further, whether the above factors per se or the processes by which a foreign firm implements its strategy hold the key to success, need examination.

Second, many of the past studies have adopted survey research in their analyses. Given the complexities that abounds research on strategy and success of foreign firms in a host country, whether survey methods will capture the realities of the situation needs to be looked into. Buckley and Casson (2001) have expressed similar concern on methods of research used in international business and have suggested researchers to seek new methods of research.

In the developing country framework, most of the industries have been in a nascent stage while some have been in the emerging stage. Each host country may have some characteristics that may be different from the other host countries. The nature of economy, industry, and infrastructure will be specific to a host country. Within the same host country, some industries may be in a nascent stage while some others may be in an emerging stage and some others may be in developed stage. FDI strategy for success will therefore be highly contextual. Hence research studies relating to FDI strategy have to be sensitive to the methodology of research.

Third, though there have been a number of case studies on performance of multinational enterprise, these cases studies have been based on convenient sampling. Comparison of the cases across industries has not been done. Hence, whether the findings of these studies can be deduced to understand strategic pattern of investment for success in host country situation is a point of concern.

More studies in the above research strand, viz., strategies and performance of foreign firms in a host country context is a need of the hour as these will refresh the existing literature in the other three stands of FDI research as pointed out earlier. An interaction of ideas of these various strands will help understand the complex issues involved with FDI and its success for both the host country and investing foreign firms. In the present circumstance, there are a number of issues to be explored in several contexts of foreign firm and host country.

VII. SOME GUIDELINES FOR FUTURE RESEARCH

From the analysis of the four major research areas in FDI, there seems to be a huge scope to understand and explain issues related to the determinants of successful FDI strategy especially with reference to the developing economies. There are at least five research areas in FDI that could be potential areas of research among many others. First, exploring the FDI strategy of successful foreign firms in the developing economies. Second, examining the investment strategy of foreign firms that failed in some of the host economies. Third, investigating whether the holistic FDI strategy (Nayak 2005) suggested with reference to a developing country like India holds true for the success of foreign firms in industrially developed countries. Fourth, finding out whether successful FDI strategy in the manufacturing industry differs from that in the non-manufacturing industry. Fifth, studying the impact of an individual successful foreign firm on a host economy.

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Discrete Event Simulation Model of A Container Terminal *

K.C. James[1] and M Bhasi[2]

Abstract

According to estimates by the World Bank and others, world sea borne trade is expected to increase at the rate of 4% a year over the next decade, almost doubling current volumes by the year 2010. Container transport is growing beyond the most optimistic expectations in recent years. For the better terminal management different aspects of container flows at different times must be considered. The role of simulation in evaluating alternative system design and operation management policies is well established. In this paper we present the development of a simulation model of the operations of the container terminal in a South Indian Port and demonstrate its use for taking decisions regarding system design and operational policies. The model computes ship turnaround time and determines resource utilization at a high level of detail. This helps planners ti view the performance of the system much before implementation. The model allows planners to see operational constraints and bottlenecks through statistical reports, graphs and charts.

I. INTRODUCTION

Shipping is an expanding, global business that carries most of the world's traded goods. It is relatively free of capacity constraints, and less harmful to the environment than other modes transport. The future offers substantial opportunities for the shipping industry, bringing with them the potential for significant inward investment and wider economic benefits for India. Efficient shipping is vital to our economic well-being. In general above 80% of external trade by weight moves by water. The competitiveness in global trade requires that international shipping markets are open and not unnecessarily expensive.

Container transport is a complex multi-modal chain, the importance of which is growing beyond the most optimistic expectations in recent years. Some salient features of containerized traffic are:

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1 Reader, Department of Statistics, Cochin University of Science and Technology (CUSAT) Kochi-682 022, e-mail: -jamesmech@cusat.ac.in

2 Reader, School of Management Studies, Cochin University of Science and Technology (CUSAT) Kochi-682 022, e-mail: - mbhasi@cusat.ac.in

- Longest distances are traveled by large container ships, along transoceanic routes linking the different continents
- Other modes of transport (mainly road, railway and inland navigation when possible) cover the remaining legs to effect a door-to-door service.

The number of containers handled in ports worldwide was well over 200 million TEUs in the year 2000 and it is predicted that by 2005 this figure will top 300 million TEUs, and further reaching 500 million TEUs by 2015.

For faster movement of material, operators search to cut times, puts ports near the shortest route at an advantage, even if this is countable only in terms of hours. Obviously this only applies to those ports that prove to be competitive in a market that is currently demand driven. A little difference in the quality of service can influence ship owners' choices to an extent that was unimaginable in the past. Regardless of how it is achieved, the users' point of view only takes into account the external (or gross) productivity, by measuring parameters such as the turnaround time of ships in ports. On the other hand, terminal operators have to cope with the internal efficiency of their systems; hence the need to measure a set of parameters considering the efficiency and utilization of the resources employed. As the cargo volumes continue to grow, planners and engineers are working on solutions to move cargo more efficiently. This push is prompted by: (a) The ever-decreasing inventory which manufacturers and retailers keep on hand to supply assembly lines and customers (b) Increasing congestion around traditional maritime centers due to truck traffic and train service (c) Increasing competition for waterfront property for non-industrial uses, such as tourist and shopping centers, business parks and condominiums.

Literature in the field has provided a great amount of works, both from the external and the internal point of view, in which various techniques have been used to analyze the productivity, sometimes of the terminal as a whole, sometimes of a specific part of it (Ottjes et.al., 1994; Veeke and Ottjes, 2002; Ryan, 1998). Simulation has been used as tool for studying various aspects of port operation. In the next section we present a brief introduction of simulation and situations where it can be used for modeling port operations especially in container terminals

II. OVERVIEW OF SIMULATION

Simulation is considered as one of the most powerful tools available to decision-makers responsible for the design and operation of complex processes and systems. It makes possible the study, analysis and evaluation of situations that would not be otherwise possible. In an increasingly competitive world, simulation has become an indispensable problem solving methodology for engineers, designers and managers.

Simulation has a number of advantages over analytical or mathematical models for analyzing systems. First of all, the basic concepts of simulation are easy to understand and hence often easier to justify to management or customers than some of the analytical models. In addition, a simulation model may be more credible as its behavior can be compared to that of the real system or because it requires fewer simplifying assumptions and hence captures more of the true characteristics of the system under study. We can test new designs, layouts, etc. without committing resources to their implementation. It can be used to explore new staffing policies, operating procedures, decision rules, organizational structures, information flows, etc. without disrupting the ongoing operations. Simulation allows us to identify bottlenecks in information, material and product flows and test options for increasing the flow rates. Simulation allows us to control time. Thus we can operate the system for several months or years of experience in a matter of seconds allowing us to quickly look at long time horizons or we can slow down phenomena for study. Simulation's great strength is its ability to let us experiment with new and unfamiliar situations and to answer "what if" questions.

Simulation of port operations: Simulation is allowing experimentation in infrastructure, technology and operations without the money spent in actual construction. In addition, with the high level of competition in the industry, which decides not only the mode of transport but also the choice of specific carriers, ports, railroads and trucking companies, simulation allows for experimentation without the potential penalty of lost productivity and customer share.

In order to improve terminal management, parameters like patterns of container flows at different time scales, times durations of activities, such as queues are important. The terminal operators use historical data to produce reliable forecasts of container flows, according to the ship schedules and the terminal characteristics. In recent years, simulation has become an important tool to improve terminal operations. A detailed discussion on this can be obtained Steenken et al(2004) in which simulation has been applied for strategic, operational and tactical aspects of terminal management. Ottjes et al(1994) presents the use of a simulation model of the container terminal service in the port of Rotterdam. Ryan(1998) discusses computer simulation for two major concepts in handling the future cargo volumes: big ships and fast ships. Veeke and Ottjes(2002) presents a generic simulation model for systems of container terminals for global studies. Gambardella et al(1998) focus on the optimization of the allocation process and for the simulation of the terminal. The former is based on integer linear programming; the latter is a discrete event simulation tool, based on the process-oriented paradigm.

III. OBJECTIVES OF THE STUDY

It is proposed to develop a simulation model of Rajiv Gandhi Container Terminal(RGCT) at Cochin Port with the following objectives.

- To develop a simulation model that computes throughput capability and determines resource utilization at a high level of detail.
- Capability to allow planners to see operational constraints and bottlenecks, as opposed to inferring operational limitations through reviewing the statistical reports, graphs and charts.
- To study the effect of inter-arrival distribution change
- To be able to determine the number of vehicles, cranes etc to employ, given the layout of the terminal and its required throughput
- To evaluate the flexibility of a system chosen
- De-bottlenecking a given system

V. METHODOLOGY

The application of simulation involves specific steps. Regardless of the type of problem and the objective of the study, the process by which the simulation is performed remains almost same. Law and Kelton(1990) discusses the steps for a simulation study. We have followed similar methodology for our simulation study consisting of the following steps.

1. After the system study related to the operations at RGCT to obtain operational flow charts and time data in respect of operation times, maintenance times and resource requirement are found out. The statistical distributions for these data also were found out.
2. A modeling platform was selected and a model was made to get sufficient representation of the actual operations. The model developed was verified and validated.
3. Experiments were done on the model by changing inter-arrival rates of the ships and its effect on the inter-arrival time, utilization of equipments and resources were studied.
4. The effect of equipment breakdowns was incorporated in the model and corresponding effects were also studied.

The following section presents an overview of the operations of the container terminal at RGCT.

V. THE OPERATION OF CONTAINER TERMINAL

Containers are large boxes that are used to transport goods from one point to another. The use of standardized containers helped in inter-modalism of international trade, and the movement of cargo from an origin in one country to a destination in another by more than one transport mode became commercially feasible. A container terminal interfaces with the sea and land operations of container movement. Various functions at the terminal include planning and performing orderly loading and unloading of ships and storage, handling and delivery of containers in the terminal, while collecting all necessary information regarding ship's schedules, booking position, land transportation situation, progress of jobs in the container yard, container freight station (CFS), demand and supply of container, delivery schedules, etc to organize smooth flow of containers through all segments. This study is related to the operations at the Rajiv Gandhi Container Terminal (RGCT) at Cochin Port. In 2003-04 the Port handled 169965 containers (TEU's), the total volume of container cargo being 21.25 lakhs tonnes.

The Discrete Event (DE) model developed hereis primarily based on the operations in the RGCT with respect to the use of the following equipment.

Transfer Cranes(TC) : these cranes operate at import yard and export yard to load or unload the containers to and from trailers.

Quay gantry cranes (QC): These cranes operate at the shipside for lifting containers from the ship and load them in trailers. QC's are also used to load ship by lifting the containers from the trucks to the ship.

Trailers/trucks: Trailers are used to carry the containers inside the yard. They usually operate inside the terminal. Trucks carry imported containers to respective position in the storage yard. Trucks that carry the containers from storage space to a position near ship for loading the containers to the ship. Containers are taken to or sent out of the terminal gate by trucks operated by private parties.

Broadly there are two types of operations being carried out in the container yard i.e. import operations and export operations. When ship arrives at the port it waits in the outer sea for berthing permission. When the berth is free it is berthed. Usually ships coming to Cochin port will be unloaded first and then loaded. If sufficient QC's are available both operations are done simultaneously. QC positions unloaded containers on the trailers. This will be moved to a pre-assigned space the temporary storage area. From here TC's will load the imported containers to the trucks of concerned operators. These trucks leave out through the yard gate to destinations. Trucks from outside with containers for export enter through the yard gate into the yard and TC's unload them to a pre-assigned space in the storage yard. TC's load the trailers operating inside the yard with the demanded containers for the outgoing ship and these trailers are taken to a position near the ship. QC's unload them to the ship for export.

VI. THE MODEL OF CONTAINER TERMINAL

A model of the operations at the container terminal was developed to study the operational performance and to identify bottlenecks under varied conditions. When developing the model the actual working of the terminal was kept in mind rather than the ideal situations. Sufficient data regarding activities times, inter-arrival times, etc were collected. These times were modeled by using a triangular distribution.

The model logic can be divided into following sections:

(a) Modeling ship arrival (b) Modeling Import side operations (c) Modeling export side operations (d) Modeling the departure of ships

Information Blocks: Plotters for the changes in buffer size is useful for visualizing how the import and export buffers are consumed. Statistics blocks gets collective information regarding the utilization of each activity blocks, average length, maximum length, average wait and maximum wait in each queue, utilization of each resource required etc

Maintenance Consideration: For most of machines/equipments the model gives the flexibility to add maintenance and repair times. The model has 178 blocks in total. The model contained the following types of blocks.

- Executive - Needed in every discrete event model to handle events
- Activities - Processing items

Besides the above blocks the model contains numerous blocks for

- Routing - Moving items to the correct place
- Batching - Joining and dividing items
- Information - Getting information about items
- Arrays - Storing, accessing global data
- Decisions - Routing or deciding which value to use
- Holding -Accumulating or storing values
- Input/Output - Reading and writing files, or generating values
- Math - calculating values
- Statistics - Calculating Mean, Variance

Some Features of the model are:

- Many of pre-defined information blocks and plotters
- Easily changeable parameters for a simulation study
- Can be modified easily to incorporate additional resources of same type
- Statistical distributions or empirical data can be used.
- Can easily be adapted to multiple ship processing
- Flexibility to add maintenance or repair times as per statistical distributions

Assumptions: considering operational realities, following assumptions were made in the model

1. Berthing permission is given to only one ship at a time.
2. First operation on the berthed ships is import. Once it is completed export operations and loading of containers into the ship starts.
3. Only one QC is available at time.
4. The number of TCs available at a time is four.
5. The operation times, inter-arrival times etc follows triangular distribution
6. The role of manpower as a direct recourse is ignored. Instead this is indirectly included in the operation times of machines and equipments and in repair times.
7. The difference in stacking time due to height in positioning of containers in the storage yard is not considered.
8. There is no restriction on the availability of manpower.

VII. SIMULATION RUN RESULTS AND THEIR INTERPRETATION

Finding ship turnaround time: The model developed collects information about ship turnaround time, which is the average time; a ship spends in the system from its arrival to departure from berth. This performance measure depends on several factors. The important factors identified includes the inter arrival time of ships, and the number of containers carried by the ship.

The model was subjected to different experimental conditions and the steady state behavior is noted. Figure 1 show the

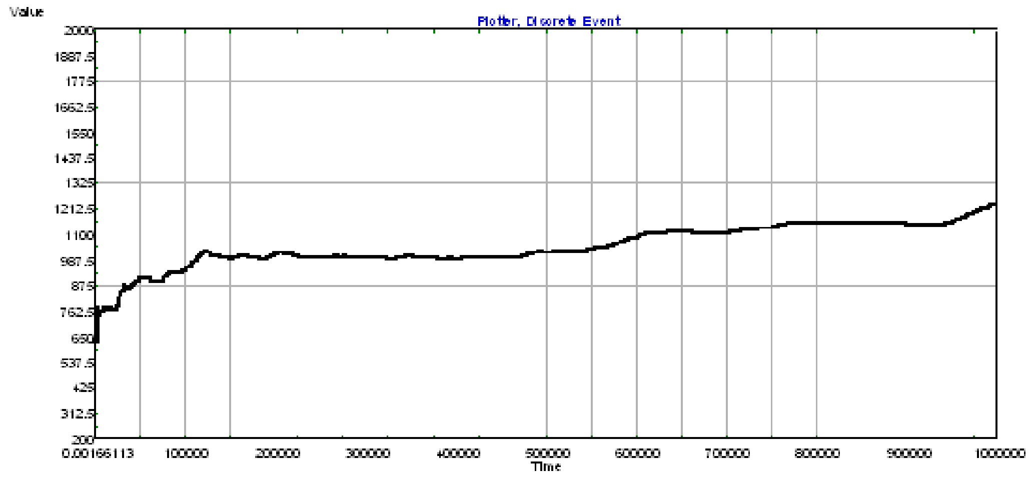

Figure-1: plot of ship turnaround time when simulated for 1000000 minutes at an arrival rate of 1440 minutes

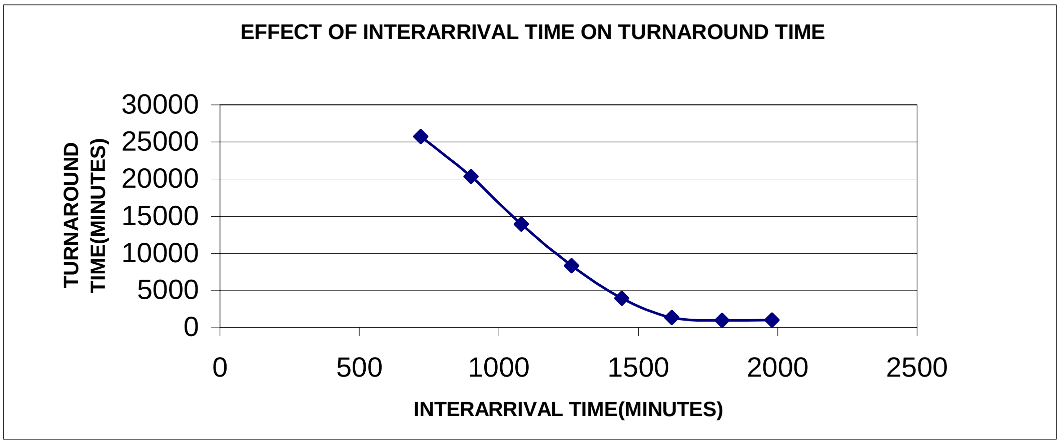

Figure-2: plot of interarrival time vs. utilisation

average turnaround time of the ship when simulated for 1000000 minutes at an arrival rate of 1440 minutes (ie one ship a day). It shows a steady behavior after a simulation time of over 1million minutes.

The effect of inter-arrival time on ship turnaround time is depicted by figure 2. It clearly indicates the possibility of exponential increase in ship turnaround time with decrease in inter-arrival time

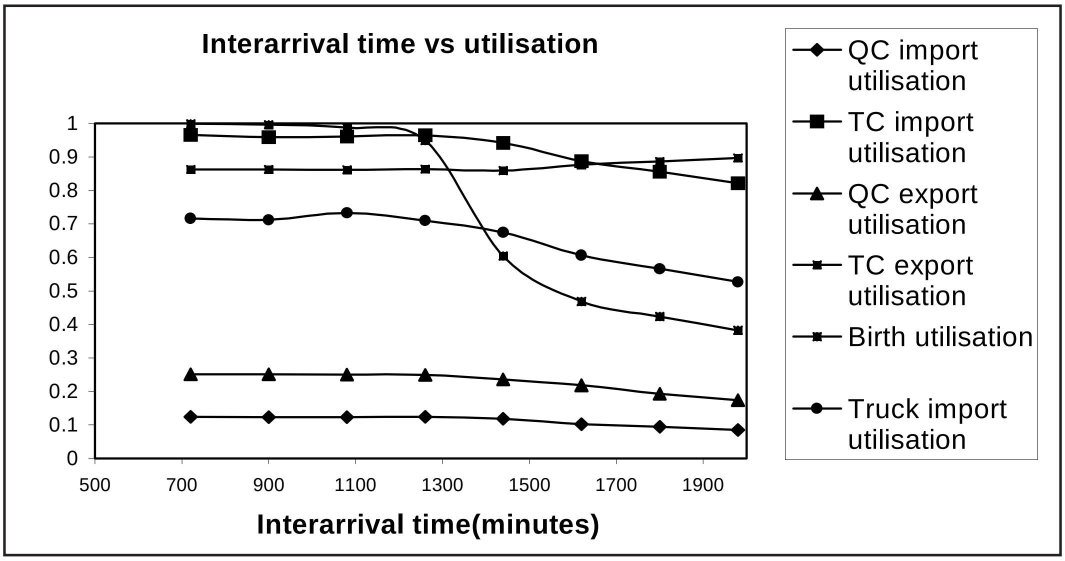

Figure-3: plot of interarrival time vs. utilisation from 1980 minutes to 720 minutes. This shows that it will become almost unmanageable if frequency of arrival is just doubled.

Resource utilization : The model allows experimentation to see the utilization of each resource used. In particular the effect of interarrival time on the utilization of transfer cranes, quay cranes, trailers and berth are considered. Figure 3 indicates that with increased arrival rates resources will be driven to extreme utilization level which is not desirable. Notice the high utilization requirements of TCs for export operation. The berth utilization is also very high. Thus this study clearly indicates that

1. If more ships arrive, the turnaround time may become very high and almost unmanageable with present resource levels if inter-arrival time is halved.
2. The utilization rates of TCs put at export is very high. This in turn will become a bottleneck if inter-arrival time decreases from the present levels.

VIII. CONCLUSION

The face of the transportation industry continues to change. Propelled by the dynamic growth of international trade, shipping lines and other factors, transportation providers will have to formulate potential advances in infrastructure, information technology and operations. This paper considered the modeling aspects of the operations of a container terminal in a strategically located port in South India. It was found that with the present available facilities the port will be grossly inadequate with an increase in container arrivals.

This study is a part of an ongoing work on modeling of container terminal operations. Future work will be based on the design and experimentation of an elaborate model considering the scope of more number of berths and equipments available and finding de-bottlenecking strategies in the situation.

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The Game of the Name – A Key Factor in Brand Building*

M. N. Tripathi[1]

Abstract

Brand Managers have always felt on thin ice whenever there is an issue of naming a new brand. The success of a brand is important to a marketing manager as it might mean climbing up the organizational hierarchy as a reward for its success or getting jettisoned out, in case of failure. The naming exercise for most new brands is fraught with great risk. This paper attempts to explore the issues that go into making a name into a great brand. It deals with the complexities and pluralities of this important exercise of branding. There is no foolproof formula for a great brand name. Yet, experience and knowledge has served marketers to navigate the rough waters and know what not to do, in this uncertain exercise. Many of the views, opinions and examples are taken from the long years of experience of the author in industry and the corporate sector.

I. INTRODUCTION

"A rose by any other name would smell as sweet". Though we have heard this many times before, yet, in our lives, a name assumes importance as soon as it is mentioned. It conjures up images, experiences, episodes and brings a smile or a frown to the face, depending on the interaction. We cannot imagine any of us without a name as it creates for us an identity and the manner in which we are addressed. Misra Productions No.2 or Sharma's untitled venture are how untitled films are called in Bollywood, but even they need to be christened, before they are released.

II. NAMES DO MATTER

In most families, the arrival of a baby in the family is an occasion of great joy. Parents, relatives, grandparents, friends go to great lengths in suggesting and insisting on suitable names. Numerologists, astrologists, pundits are consulted by anxious parents wishing the best for their child, in trying to select the best suitable name. Others, not so inclined, but nevertheless, modern in outlook discard the otherwise suitable 'Ratikanta' for the more contemporary 'Rahul', if it is a boy, and reject 'Mrinalini' for the modern 'Mona', when it is a girl. Almost everyone who is close to the

* Received December 29, 2005.
[1] Associate Professor, Xavier Institute of Management, Bhubaneswar, mnt@ximb.ac.in

family would have a view on what should be the name.

There was a study carried out to prove that names do matter in our lives. A group of ten men in their early twenties were gathered to decide which of two beautiful ladies was prettier. They were circulated the photographs of these ladies and asked to mention individually, which of them was prettier of the two. When the verdict came, it was a tie. Five rated one as more beautiful and the other five mentioned the other lady to be more beautiful. Then the same test was carried out again with a different group, but with one additional input. The names of the ladies were mentioned. One was Abhilasha and the other was Malleswari. The verdict was 8: 2, in favour of Abhilasha. Therefore, names ***do*** matter.

Marketers think that with the right product with the right price is the mantra for success in the market. Innovation alone is never enough. Along with innovation, a company needs the right marketing to ensure the brand's survival and success. The heart of a good marketing programme is a great brand name (Ries & Ries, 2004).

III. FIRST STEP TO BRAND BUILDING

Naming brands is the first step of the brand building process (Grimaldi, 2004). If you are not selling brands, you are in the business of selling commodities. Great branding helps to add value to your product, build preference, retains customers and brings in new customers. Great brands sell and sell repeatedly. However, it is easy to lose focus and several well known brands in the past, such as Murphy, Dalda, Ovaltine and Brown and Polson have withered and faded out since the focus got dissipated. It is focus that creates successful brands and helps businesses grow not only by increasing sustainable sales and price premia, but also attracting and retaining the best talent and facilitating relations with all stakeholders.

Great brands are more than the sum of their parts (Grimaldi, 2001). Coca-cola is more than water, syrup and bubbles. When the memory is gone, the emotion remains. It is deeply rooted in psycho-sociology. People who buy the brand or would possibly want to buy in the future, (out of the entire population who could afford the brand and therefore comprise - the *economic target*,) comprise the *marketing target*. The goal is to rally that economic target to identify with your marketing target. Marlboro smokers buy that cigarette because it makes them feel independent and free like a cowboy, not because they are cowboys!

A name can make or break a business (Grimaldi, 2003). In the last two decades of the twentieth century, Andersen Consulting had accumulated extraordinary brand equity, largely emanating from its founder Arthur Andersen. It was the result of lengthy litigations between the consulting and accounting arms that eventually pushed Andersen Consulting to abandon its name in 2001. Today, the renamed consulting firm, Accenture enjoys a level of independence that largely shielded it from the collapse of Arthur Andersen.

Successful product and company names may appear to have been created by magic, but it is possible to develop names that are dynamic and effective and which can fully leverage a brand's potential if you have the right process in place. Such processes that are clear, insightful, logical and focused will lead to names that are powerful components of your brand strategy and that pave the way for buy-in throughout the organization (Javed, 2003).

Great names create a powerful force in the branding, marketing and advertising campaigns of the companies they work for. They differentiate you from competitors, make an emotional connection with your audience and help to build a brand that ignites the passion of your customers. Therefore good naming companies are strategically focused, fluent in emotional shorthand and are more than a creative powerhouse. For most consumers, the first interaction with the brand is the name.

IV. FUNCTIONS AND FEATURES OF A GOOD BRAND NAME

The first function of any name is to give the named, an identity – an identification. But that is not the end of the story. There are several other functions that a name has to accomplish before it can be thought of as a great name and what it can contribute to the brand.

The above figure allows us to think of the various dimensions a brand name contributes to the brand

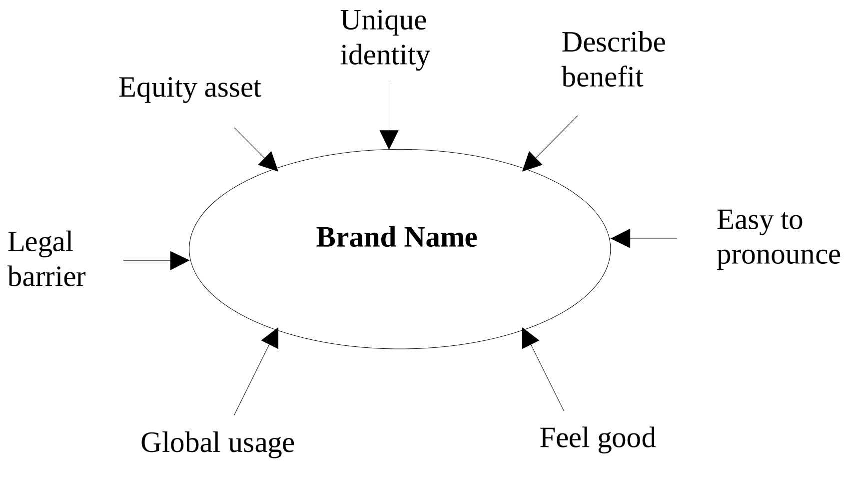

Fig. 1 Seven functions of a brand name (Ellwood, 2002)

1) It gives it a unique and distinctive identity
2) It is part of the equity of the brand
3) It should give an indication of the key functional / emotional benefit
4) It should be easy to pronounce and spell
5) It should be legally protectable across markets
6) It should have versatility in being able to be used everywhere without cultural mismatches
7) It must have a 'feel good' factor

This is not to say that brands not conforming to the above rules cannot succeed. In fact, many do, but those are more exceptions to the rule.

V. THE POWER OF BRAND NAMES

The brand's name is often revealing of the brand's intentions. Not only do brand names get selected because of the guidelines given above, but often they could get selected because of subjective reasons rather than for any objective or rational reason. Why did Steve Jobs and Steve Wozniak select Apple as the name for their brand? Surely it would not fall strictly into any of the guidelines mentioned earlier. Yet, it went on to become one of the most well known brands in the world. With this name, the brand demonstrated its values: in refusing to idolize computer science: in refusing to take itself too seriously. The makers of Apple wanted the machine to become something to enjoy, rather than to revere or fear. 'Apple' sounds fun, not serious. Mercedes is a Spanish Christian name, yet the brand has made it a symbol of Germany. We do not think of roofing when we refer to Mrs. Thatcher, nor do we think of the river when we mention Amazon.Com.

VI. THE FEEL OF A GREAT BRAND NAME

It is important that the name must sound right. Research has shown that the sound of a name has an important influence on the way people perceive that name and that person. Psycholinguistics and phonetics are now being very extensively used in shortlisting names in name research. Akio Morita, founder of Sony had mentioned that one of the reasons they used Sony as a brand name was it sounded like 'sunny' in many languages and had a positive connotation. Many brands which otherwise were excellent products have failed because it just did not sound right or meant differently.

Gerber, the nutrition baby food manufacturer tried to launch a brand of small servings of ready-to-eat beef burgundy called 'Singles' for single households - bachelors, divorcees, college students, etc. The launch was a disaster because the target segment did not want to be identified as singles eating alone. Years later, another company introduced the same concept as 'Smart Ones' also highlighting the benefits of nutrition and convenience with no reference to the singles market, which was a resounding success (Engel, Blackwell, Miniard, 1995).

Naming requires a creative, disciplined and strategic approach (Wheeler, 2003). Those companies who dismiss it as a superficial exercise do so at their brand's peril. The brand name must be chosen with a view to the brand's future and destiny, not in relation to the specific market and product situation at the time of its birth. In today's competitive world, a name must function as a total messenger. It is only right that some of the myths in the naming activity need to be exploded here.

1) Myth No.1

Naming a company / product is easy, like naming a baby.

Truth - Naming is a rigorous and exhaustive process. Frequently hundreds of names are processed before finding one which is legally available and works.

2) Myth No. 2

I'll know it when I hear it.

Truth - People often indicate that they would be able to make a decision once they hear the names. In fact, good names are a strategic fit that needs to be examined, tested, sold and proven.

3) Myth No.3

We'll just do the search ourselves.

Truth - Name search agencies need to check for intellectual property rights and conduct extensive search to ensure that there are no conflict of interests. It's too large a risk, since names are expected to last over time.

4) Myth No.4

We can't afford to test the name.

Truth - Various thoughtful techniques must be utilized to analyze the effectiveness of a name to ensure that its connotations are positive in the markets served.

VII. NAMING BLUNDERS

It is for this reason that even in business, companies go to great lengths to decide on names for their products or even names for their companies. These days, name search agencies are in great demand from companies who want to select suitable brand names, which would be of an enduring nature, catchy, easily remembered and can conjure up strong brand associations. More important, the names should not be insulting or derogatory in any other language or market. China wanted to export 'Pansy' underwear for males to the U.S. It is small wonder that the venture was still-born. 'SuperPiss' is the name of a defreezing mixture used in winter to thaw car door handles in Finland, so that the key can be inserted in the door handle to open the car (Aaker,1995). Can you imagine such a product with a name like that to do well in English speaking countries? Our very own Ambassador car had a brand called 'Nova' which was a moderate success and has now been phased out. It would have been a non-starter in Spain, because in Spanish, Nova means 'not move'!

Even the best of companies make such blunders despite being considered professional, savvy and efficient. Google, since introducing the Gmail brand name, had to stop using that name in UK and Germany since it had not done the requisite research prior to introducing it worldwide, whether it was already being used by some other company. In the UK, Independent International Investment Research was successful in defending its Gmail trademark. Google's Gmail is now known as 'Googlemail' in the UK. In Germany, Giersch Ventures successfully defended its Gmail trademark, which is used as an e-mail service. The German court declared that Giersch Ventures Gmail service was registered and used long before Google's search engine (Lozito, 2005).

Ikea, the Swedish home requirements major, has just one person responsible for naming the over 7000 SKUs in an Ikea store. It employs a system to manage names. Dining tables are named after places in northern Sweden. Rugs get Danish place names. Bookcases are named after professions, while mathematical terms designate curtain rods. Desks and chairs get male names whereas anything meant for a bathroom is named after a body of water.

The Ikea name is an acronym derived from the first letters of the founder's name – Ingran Kamprad and the village where he grew up – Elemtaryd Agunnaryd. He was dyslexic. In the initial days, when he was naming the SKUs himself, he made the famous *faux pas* of naming a child's bed as 'Gutvik' which would have been quite suitable, had it not been for the Germans, where this word describes an activity not suitable for children, but results in children! It is then that he decided to hand over the naming business to a professional.

VIII. CORPORATE CHRISTENING

Such problems are also existent when corporate naming is required. There has been a steady rise in corporate renaming because of the M&A activity taking place across the globe. The new entities formed after the merger or the acquisition necessitates reidentification of the new identity of the reconstituted company (Mesa, 2004). When one company takes over another, you either have to settle for one of the old names, combine the two, or think up a new name. Many times, it is a compromise, such as when Sprint acquired Nextel, Sprint's adoption of Nextel's yellow and black colour scheme, along with the tag-line display the best of what is called 'co-branding' nowadays. Novartis, the merged entity of the erstwhile Swiss major, Ciba-Geigy and Sandoz Laboratories was an example of a completely new identity. Sometimes, it can just be an unimaginative coining of both names – DaimlerChrysler, ExxonMobil, and KonicaMinolta.

Renaming a company usually requires the help of a branding agency who can do the research required for finding new names and how they will appeal to stakeholders. However, even the best researched names can go sour, if mismanagement and corporate bungling tarnishes the image of the company. The most famous example is Enron, which was result of The Houston

Natural Gas and InterNorth merging together.

IX. PROTECTING NAMES

Having a name that is popular and distinctive is not the end of the problem. For many such names, protecting the rights to that name takes up a lot of time and effort. The moment a name gathers some modicum of popularity and equity, there are many who try to hitch a free ride on that name and all its associations. Starbucks appears to be learning the hard way about the difficulties around protecting one's trade mark in China. It is taking coffee shop chain Shanghai Xingbake to court for appropriating Starbuck's fonts, logo and colour scheme to provide Chinese coffee drinkers with a quasi-Starbucks experience. The name itself is a phonetic copy of Starbucks (Xing, pronounced 'Shin', means 'star' in Chinese, While 'bake' pronounced 'bake-kuh' is the phonetic rendering of 'bucks') Therefore, one of the prices for owning world class brands, is to have big budget for legal infringements that are bound to arise at different places.

FCUK, the fashion brand which was launched in 1998 succeeded initially because of its 'shock marketing' value. It was the answer to the millions of anti-establishment youth who preferred to wear their revolt, than keep saying it. By 2004, the brand was 'tired' and 'tacky' and it was time to move on. Does it mean that the demise of FCUK is a signal of a new trend in consumer morality? Probably not. However, shock brands get less shocking as they become mainstream and people become immune to it. It no longer remains a 'statement' product.

X. BRAND ASSOCIATIONS AND REBRANDING

The name identifying the brand is more than a promise. It is an experience. That experience is reinforced by the brand name. Virgin Atlantic refers to its New York to London flight as 'Suite Dream'. Singapore Airlines names its business class services as the 'Raffles Class'. Raffles is also an exclusive and upscale hotel in Singapore. It is known for its unparalleled guest service.

Sometimes, you could have the perfect name but somebody has already trademarked it, even though it is not being used. Marketers, in their bid to outdo other competitors are always on a preemptive strike to secure likely brand names to their account, not to use them in the future, but just to prevent competition accessing it later. Corona, the Mexican beer producer had to negotiate in several countries to sell the brand, which means crown in Spanish. In Spain, it had the biggest problem. Corona had to be adapted to 'Coronita' as a compromise, since this brand name was already being used for a wine, which was clubbed in the same product category (Beristain,2004).

Whyte and Mackay (India) Limited, the Indian JV of the international liquor major, when they launched their range of Indian Made Foreign Liquor(IMFL), introduced a classic deluxe whisky called 'Whitehall'. This would have probably gone unnoticed, except that the brand started doing exceptionally well in the launch market which was Andhra Pradesh. When the news reached the foreign principals in Glasgow, Scotland, there was a huge furore on the use of that brand name because 'Whitehall' was the name of the building that housed the British Parliament. Intense pressure was brought on the Indian company to have a change in the name, which after a lot of thought and deliberation was changed to 'Whytehall'. Fortunately, the impact to the brand in the market was minimal and the rechristening passed off without major damage. Today the brand exists and is doing reasonably well in most markets.

Another potential landmine is translation or association issues across countries or regions (Beristain,2004). Ford Motors had to change its 'Pinto' to 'Corcel' in Brazil, since the former meant the male sexual organ in Portuguese. The Brazilians could never accept this name, although they were quite happy with the car. In Belgium, telecommunications brand, Orange lost its trademark to competitor Mobistar. The company had to spend months to rebrand itself as 'Base', with its attendant marketing costs, before it could convince customers that it is still in operation, albeit through a different name.

XI. BRAND PERSONALIZATION

The Dutch have taken a lead in personalizing brands with names as if they were people (Wijman, 2004). More important, they wanted to attach a 'friendly' image to the brand by using first names. Three ex-Unilever executives who started 'Food Sense' introduced an arrangement of peanut butter, jelly and hazel nut paste called 'Fred and Ed'. A telephone call centre is called 'Annie'. 'Jackie' is a monthly lifestyle glossy magazine named after Jackie Kennedy Onassis. 'Alex' owned by Rabobank is Netherland's biggest online broker. Using first names helps these brands stand out in mass communication as if they were persons of flesh and blood. It helps the brand gain an association as an acquaintance, one that is already very close to the consumer. The brand can act as a friend. However, using first names does not guarantee success. "A first name is always marked. I mean, people who already know a Ben and hate the guy, won't buy a product named Ben." Therefore negative associations likely to arise can be severe pitfalls to using first names for brands.

Most brand consultants agree that the common factor to successful nomenclature is clarity (Mesa, 2004). "Consumers have to understand you before they can appreciate you. The most successful brands are easy to understand, relevant and differentiated." Federal Express, which revolutionized the process and shipping habits of individuals and companies, had to rename their products which totaled over 100, because it was not explicit. "In some cases, they were using acronyms that just didn't mean anything" says Dave Hulbert, then director of naming at Landor, its advertising agency. "Even some of the people at FedEx didn't know what they were. We made everything into plain English." It is never too soon in a company's lifecycle to reconsider nomenclature strategies.

XII. CELEBRITY ADVERTISING

The inherent upside of attracting a celebrity to a brand is that the brand literally has a face, name and personality that immediately projects the image of a living, breathing credible person as opposed to a faceless corporate entity (Mesa, 2004). The downside is that individuals are not stable or as easily controllable as corporate entities. Fame comes and goes. So does the equity of the brand when its fortunes are linked to that personality.

Jennifer Lopez earned unprecedented success as a music and acting phenomenon, including her debut album that went five times platinum and a commanding salary of $12 million a film. Her signature perfume 'Glow by J.Lo' released in 2002 was an instant hit among 15 to 21 year old females – the same group who buy her albums. Industry observers estimated sales of $ 44 million in the first four months of launch.

Closer home, we have our Amitabh Bachhans, Sharukh Khans and Sachin Tendulkars endorsing products from FMCG, durables, automotives, services and many other product categories. How can the same personality be attached to such a wide range of products? Conventional marketing logic dictates that marketers would possibly not be getting value for their money. Yet, marketers are falling over one another to sign up these celebrities with the price tag going northwards. Unlike in other countries the mass adulation enjoyed by these personalities overshadows the other aspects of multi endorsement fatigue. Proof of the value of such celebrities, is the bourgeoning bottom line that is attributable to the increased sales of such brands of such companies (Cabell, 2003). However, everything is fine as long as the audience hold these celebrities in high esteem. Once their celebrity status declines or dwindles, it does have tremendous adverse effects on the brand sales.

Magic Johnson, the US basketball legend was endorsing Nike until it was found that he was suffering from Aids. Overnight, his contract was terminated and a new endorser found for the brand. Kapil Dev's "Palmolive ka jawab nahin" went into hibernation when his name got linked with the cricket scam. It reappeared only when he was absolved of his alleged involvement by the Board of Cricket Control, India (BCCI). Azharuddin went into oblivion, the moment he was banned from international and domestic cricket. Saurav Ganguly is finding it extremely difficult to hold on to his endorsements contracts with his recent loss of form and non-inclusion in the one day team. At the same time marketers are queuing up to sign on the new stars in the making – Mahendra Singh Dhoni and Sania Mirza.

XIII. NUMERAL BRANDING

Using numerals as brand names seems to be a trend that is fast catching up (Granell, 2005). 3M, 3I, Channel 4, 3663 all happen to be brands. While words work because they are inherently evocative and rich in meaning, numerals however, do not portray any such meaning universally. However, certain numerals have significance depending on the region. In the west, the no.13 long considered to be unlucky has necessitated the whole hotel industry never to have a 13th floor! Indian numerologists have long advised people that the nos. 7 and 9 are auspicious and lot of people make sure that their car numbers and telephone numbers total up to these numbers.666 is considered as the devil's sign in Christianity whereas 888 is considered lucky in Chinese. 786 is the most auspicious number for Muslims. So while it is all right to use a number as a brand name for regional brands it can become a liability, when you do want to internationalise it. The benefit of numerical names is that they can be used as a blank slate into which a brand personality can be built, rather than the other way round.

There are limits to the way numbers work. They are not as flexible as words. Numbers are harder to protect than words since they derive their communication from other aspects of communication or brand experience, and establishing such names could be expensive. However, when they work, almost always they have the potential to stand out among the crowd.

XIV. UMBRELLA NAMES

Many practitioners believe that in time, the added values of a brand gets embodied in the name and that these values can be transferred to another product by using the same brand name (Jones,1998). This is the rationale for the strategy of using an umbrella name for a number of different products, mostly used in line and range extensions. Jagatjit Industries Ltd has 'Aristocrat' as the umbrella name for its whiskies, brandies, rums, vodkas and gins.

There are powerful incentives in having an umbrella brand name. Firstly, the marketing expenses incurred for the promotion of this name gets shared by the number of products and management feels that no single brand is getting a disproportionate share of expenses. Secondly, consumers who use one product under the same brand name can easily be persuaded to try out a second product of the same name, especially if their previous experience of the first product has been a pleasant one.

However, there are also compelling reasons as to how this entire strategy can boomerang if the mother brand starts faltering in the market. Then the adverse backlash can limit the tempo of the other extensions, even if they are doing well. This is what exactly happened to Jagatjit's Aristocrat brand, when the mother brand, which was Aristocrat Whisky started to take a beating in the market. The prospect of cannibalization of one product's sales over another using the same brand name cannot be ruled out, especially when they are in the same category.

John Philip Jones has maintained that the economic advantages of umbrella branding are substantially illusory in the short and medium term. Umbrella names are in general no worse and no better than completely new names. As a general rule, the success of a new brand is more dependent on support levels than on the name *per se*. It is possible that umbrella naming can provide greater staying power in the market by enabling a greater addition to added values, but this is not discernible in the short run. Therefore, those who practice it, do so more as an act of faith, rather than any strong belief that umbrella branding is superior to giving different brand names.

XV. GENERIC BRANDS

When we talk of brands and about branding, the reality is most consumers buy categories, not brands. The decision process is usually category first before brand. The brand name is shorthand for the attribute represented by the category. The day consumers forget that Dettol is associated with 'antiseptic' the brand would cease to have much of its brand value. Obsessive brand managers become paranoid about their brands becoming generic because the other brands in that category get a free ride on the brand leader's equity. Actually, much of these fears are unfounded. Dalda, which became generic to the vanaspati category did not really suffer from the other vanaspati brands although it helped expand the category to the advantage of its competitors. Therefore, just as words in the dictionary have several meanings, users learn to associate the right meaning depending on the context. Xerox, which is generic to the duplicator category, really means duplication of documents to the consumer as well as the brand, Xerox. The brand value generally does not diminish.

XVI. SOME FINAL THOUGHTS AND CONCLUSION

The brand name is often the most highly visible and long lasting connecting element of a brand for the consumer. It should encapsulate the experience of the brand or what it stands for in a single word or phrase that can be communicated across markets and protected. It should form an impenetrable barrier against competitors and define the position of the business in the minds of the consumer. Just like our own names, that identifies us as to who we are, which family we come from, which sex we belong to, brand names have a similar role that identifies it with the product and its pedigree. While many changes may be done with the brand over its lifetime, it is quite likely that the name will be sacred and remain unchanged, unless in times of mergers and acquisitions, when names sometimes comes up for revision. It has the power to focus and shape the formation of the project and business structure. It can also inspire employees, trade and consumers.

A brand name is just not a name. It has many functions and a great brand typically performs all of it. It identifies the company or product / service as unique to the consumer. It could describe or denote a core emotional benefit. It should be easy to pronounce and spell and can be used across markets without any cultural mismatches. It should be distinctive, open to legal protection and should provide barriers to counterfeiting. The equity should be such that it can be traded and last but not the least, should have a 'feel good' factor.

Every big brand has a great name to begin with. It is like the first runner in a relay race. 'Well begun is half done.' Many branding exercises may fail for a variety of reasons, but successful branding exercises always had a great name to start with. Lest people think that there is always a sure shot way of getting a great brand name, it must be known that this is still a matter of chance. This highlights the ultimate subjectivity of the name. There are any number of exceptions to the general rules mentioned earlier which have met with success, but that is life and what makes the marketer's job challenging.

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Maruti's Product Recall: A Case of Quality Consciousness and Customer Care *

B.P.Patra[1]

I. INTRODUCTION

Maruti Udyog Limited, the largest passenger car manufacturer of India, recalled nearly 60,000 cars produced between January 5, 1997, and April 11, 1997, for changeover of steering pinions on free of cost basis. It was one of the largest product recalls in the history of Indian automobile industry on quality grounds.

Maruti procured the sub assembly of the steering systems from its joint venture company M/s Sona Steering Limited, Gurgaon. The sub-assembly consisted of two engaged gears, which helped, in transferring the rotary motion from the steering column to the wheels. These gears were made of hard alloy steel so that these could withstand the abuses, wears and tears during the course of running on different terrains and driving conditions. Failure of the gears could make it very difficult for the driver to steer the vehicle and this could lead to fatal accidents.

Sona Steering bought the required hard alloy steel from its supplier M/s Mukund Iron, Thane. In 1997, due to a material mismatch, which was inadvertent, Mukund sold a lot of relatively soft alloy steel to Sona Steering. As Sona Steering followed sampling inspection method for quality testing of incoming raw materials, the softness of the metal could not be detected. However, the worker who worked on the metal and made it into gear levers noticed the unusual softness in the material and brought this to the notice of his immediate supervisor. The supervisor who was busy could not attend to the problem and only when the worker repeated his observation, a material testing of the metal was undertaken. The test lab of Sona Steering came out with the report that the material was of poor quality. Maruti and Sona Steering were operating on a "Just in time" (JIT) inventory basis and by the time this fact was verified the poor quality gear had already been fitted in to a number of cars

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1. Associate Professor, Xavier Institute of Management, Bhubaneswar, e-mail: bibhu@ximb.ac.in .

and dispatched from Maruti premises to its dealers and customers.

Sona Steering immediately informed Maruti of the defective steering parts, but it was too late. Maruti management immediately took some steps to ensure 100% verification of the remaining components. Besides to understand the possible implication of defective part, they fitted the defective steering column in some cars for rigorous endurance testing and ran the cars for 24 hours on a continuous basis.

In the meantime Maruti management estimated that with the particular defective lot of steel, that was sold to Sona Steering, only about 40 sets of steering component could be produced. But these forty sets could have been put to any of the twenty thousand cars that were produced and dispatched during that period to the market. However because of the delay in identification of the problem and taking corrective measures another twenty thousand vehicles had been dispatched. Existence of the inferior components in these twenty thousand vehicles could not also be ruled out. To provide for further safety Maruti added a further twenty thousand numbers to it. Thus effectively, the company had to verify 60,000 cars to detect the defective components.

II. HOW WAS IT DETECTED?

Satinder Singh Rawat, an operator on the heat treatment section at Gurgaon factory of Sona Steering Systems, unexpectedly discovered that the reading on his dial gauge of hardness tester were grossly incorrect.

Since last four years, Satinder had been processing batches of six inch long alloy steel rods that form the pinions, which are at the heart of a steering column. The pinion in a steering system translates the rotary motion of steering wheel to the turning of the wheels of an automobile. Satinder had been taking care to straighten out any pinion, which might have got bent out of shape during a 900 degree Celsius heat treatment process.

Satinder knew from his experience, as to exactly how much pressure to apply with the pneumatic press for each deviation of a pinion from the standard norm. But this time, he found that despite applying just enough pressure to straighten the pinion, the steel rod was actually bending in the opposite direction.

So, 28 year old Satinder did what he had been taught to do when faced with any abnormality on the shop floor; press an alarm, which promptly halted the entire assembly line at the Rs 50crore Sona Steering facilities.

Satinder did not just buzz a small problem on the shop floor; he sent a loud warning signal to every company, which in some way was involved in the total quality movement on its shop floor. For no sooner did Sona swing into action to figure out what went wrong, by midnight it was clear that the quality of the steel used to manufacture some of the pinions did not match the chemistry of the Grade SCM415 steel, usually used. This unveiled a series of pressure points which eventually led to a snapping of the quality chain, which ironically, consists of three respected companies committed to total quality: Mukand Ltd., Sona Steering and Maruti Udyog Ltd (MUL).

Says Dr Surinder Kapur, Chairman and Managing Director, Sona Steering Systems, "Of course there is pain, but I am proud of the values we have shown and for not having waited for failures in the field. Unless you go through pain you don't change" says Dr. K Kumar, the then executive director MUL, "TQM is a herbal medicine, it is not a tetracycline. It takes time" Adds Sukumar Shah President and Director, Mukand Ltd: "What quality conscious companies need to bear in mind is that quality is an ongoing continuous process and is a moving target and nothing must ever be taken for granted".

So, just what went wrong in this instance? The first cracks began to appear in October 1996, when Mukand cast a special steel Grade SCM 415 according to the Japanese Industrial Standard in its 45 tones capacity arc furnace. A total of 42 tonnes of steel was generated in the heat; constituting 72 hot rolled coils out of which this only Glitch number one:- the day, the Grade SCM 415 lot was cast, there was a breakdown in the conveyor of the Mukund rolling mill and that day the coils had to be manually stacked. "Mukund now tells us that in the confusion, one coil, which was from the next heat and had a chemical composition quite different from that of Grade SCM 415's inadvertently got mixed up with the 72 coils" says Kiran Deshmukh, Director (Technical) Sona steering Systems.

According to Sona sources, later, Mukund was to find an extra SCM 415 coil on its premises and would have dispatched it to another customer. Snafu number two: - The coils then had to be sent to Mukund's sub vendor M/s. Kamdar to straighten them into bars of 22 mm diameter, a specification requested by Sona for crafting the steel into pinions. A quality inspector checked the chemistry of each coil with a mobile spectrometer, before it left the mill. He discovered that out of the 72 coils, Coil No 7 was not made of SCM 415 steel.

While the inspector made a note of discrepancy in his register, and by the time the message went up to the crane operator, Net 72 coils, including the offending No 7 were dispatched for straightening operations.

III. FINANCIAL IMPLICATIONS

The Maruti dealers did not have the facilities to test these defective parts. Therefore, the company management reasoned that they had two options – Either these parts were to be replaced by good parts and the inferior parts sent back to Maruti or the company should do nothing and when the component fails and insurance liability arises during the warranty period it pays for the liabilities. The financial implications for the two alternatives were as follows:

Alternative 1: Replacing the part for 60,000 cars	
	Rs. In Crores
Steering column change @ Rs. 450 per car	2.70
Labor cost @ 150 per car	0.90
Recall cost	0.10
Transport cost for defective parts	0.12
Total:	3.82
Alternative 2: Meet the liabilities when they arise	
Compensation cost of damage to car@ Rs. 2lac for 40 cars	0.80
Compensation for victims @ Rs. 2lac for 40 victims	0.80
Total	1.60

It was obvious that replacing the parts was much more expensive than waiting for the accidents to take place and liabilities to arrive. Moreover, the liabilities have been calculated on the basis of all forty cars meeting accident within the warranty period. The company test engineers however had pointed out that the probability of an accident taking place with such defective steering system sub-assembly was just about 1 per cent. This meant that the actual liability under alternative two could be much less than Rs. 1.60 crore. That means that clearly from the financial point of view alternative two was superior to alternative one. But there was a dilemma, the dilemma between absolute safety, from the point of view of human lives versus the financial benefit for the company. Maruti management after great deal of discussion decided that it would go for alternative one as human lives were precious and even one percent probability of accidents was unacceptable. No doubt, Maruti management was in favour of a more ethical decision.

After Maruti took the decision to replace the sub-assembly, the news spread to Sona Steering and Mukund Iron, both of whom agreed to share a part of the recall expenses. In the supply chain the response of Sona Steering and Mukund Iron was just in time. Maruti in the whole incident lost some money but eventually it created a goodwill with the customers, who appreciated how the company cared for their lives. Experts believe that Maruti lost a couple of crores of rupees but gained much more in terms of goodwill. The quality drive of Maruti enhanced the integrity of the product and reputation of the organization.

Inland Fisheries in Bihar*

Samir Kumar[1]

I. INTRODUCTION

In June 2005, the officers in the fisheries department of the Government of Bihar were concerned about the growth of fishery as an occupation in the state. Inland fish farming historically had been a major occupation not only among the fishermen but also among other castes. Large and small water bodies in the state under private as well as government ownership were available for fishery but were not fully used (see Appendix-I for total available water spread areas in the state and Appendix-II for potential for use of fallow land). These water bodies were a source of revenue generation for the government, but no one was sure whether this really generated optimal revenue. There was the issue of providing livelihood to lakhs of people who were engaged in fish farming and social and economic well being of these people could not be neglected. The villagers also had different interests. They wanted to use water from the ponds for irrigation purposes, which came in conflict with the objective of fish farming, particularly when the water levels were low in the ponds. Dominance of local political forces and musclemen also prevented the benefits of fishery to percolate to the relatively deprived class of fishermen and relatively less well-to-do other caste people engaged in fishery. Thus, there were various stakeholders of the system whose interest was to be looked after through proper kind of state policy and execution of such policies.

II. STATUS OF FISHERY IN BIHAR

Among allied agricultural activities fishery occupies a prime place in most of the states in India and particularly in all the states in the eastern region, However, prior to the seventies, fishery was more a pastime than a regular occupation. Professional fishery came into prominence during the later five-year plans.

In the state of Bihar, fishery contributes about1.6 % of SDP. It holds out a huge potential for growth and proper planning in this sector could provide livelihood to millions. It was a matter for concern for

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1. The author is a second year student of the Post-graduate Programme in Rural Management at the Xavier Institute of Management, Bhubaneswar, but would shortly be joining SKS Microfinance Ltd., Hyderabad as Area Manager. Email: sameer_vasitha@yahoo.com

bureaucrats and policy makers that this sector did not grow as expected.

2.1 History of fishery in Bihar

The documented history of fish and fisheries of Bihar dates back to 3rd century B.C. Kautilya's Arthashastra, written between 321 and 300 B.C. mentions of secret means of rendering fish in reservoirs poisonous in times of war (Book XIV, chapter 1 pp. 478-479, quoted by Hora and Pillay, 1962). This indicates that fish culture in Bihar flourished at that time even in reservoirs. In a 6th century B.C. account, three fish with a common head (a symbol of fertility) had been found depicted on the footprint of Buddha before the Vajrasan throne of Madhubani. Fish occupied place of pride in the erstwhile princely state of Bihar. Fish was the state symbol of the erstwhile princely states of Darbhanga. The celebrated fisheries scientist late V.G. Jhingra stated that until about the end of 19th century warm-water fish culture involving collection and transport of carp spawn from rivers and stocking the ponds adopting empirically developed traditional methods of pond management was confined only to Bihar, Bengal and Orissa. . Afterwards, it gradually spread to other states of India. In the traditional system of fish culture of Bihar, fish (meen) occupied the pride of place along with makhana (Euryale ferox), a prized delicacy and paan (betel) in the traditional hospitality of the society.

Bihar occupies third position in inland fish production (2.012 lakh tonnes) after West Bengal (8.3lakh tonnes) and Andhra Pradesh (2.60lakh tonnes) based on the latest available comparative data for the year 1998-1999.

2.2 Fishery Resources of Bihar (2004)

Bihar is very rich in water resources, required for fish farming but poorly poised in terms of infrastructure .The available water resources, infrastructure and fish production data are given in table-1.

III. FISHERY AS AN OCCUPATION IN INDIA

3.1 Aquaculture in India

Aquaculture may be defined simply as farming fish and other aquatic organisms. Fish is used here generally to include all farmed aquatic organisms. Land based systems are commonly integrated with agriculture by stocking fish in rice fields. Water based systems are for raising fish in water bodies such as rivers, lakes, reservoirs or bays. Asia accounts for about 90 % of global production with China dominating the scene. Aquaculture contributes to the livelihoods of the poor through food supply, employment and income. Though there are many aquatic organisms shrimp culture has received more publicity. However, it contributes to 10 % of global production and carried out by better off farmers. Fisheries have been recognized as a powerful income and employment generator as it stimulates growth of a number of

Table 1. Status of fishery in Bihar

Resources	Area/Number
Rivers	14 (Ganga, Kosi, Gandak, Burhigandak, Bagmati, Kamla, Balan, Mahananda, Kankai, etc.)
Ponds and Tanks	65,000 ha
Ox – bow lakes (Mauns)	9000 ha
Floodplain lakes (Chaurs)	35,000 ha
Infrastructure	
Fish seed Hatchery	16
	a) corporate sector – 2, Raghopur (Sitamarhi) and Rampati (Madhubani)
	b) Private sector – 14.
Fish seed farms	121
Production and productivity	
Annual fish seed production	300 – 350 million
Annual Fish seed requirements	600 million
Number of FFDAs (Fish farmers development agency)	33
Water area developed under FFDAs	26,000 ha
Average production in FFDAs ponds	2175 kg / ha
Estimated fish production from all resources	**2.4 – 2.5 lakh tonnes**
Estimated annual demand of fish	**4.56 lakh tonnes**
% functional fish seed farms	10%

(Source- Directory of Fishery, Bihar)

subsidiary industries and is a source of cheap animal protein. It is an instrument of livelihood for a large section of economically backward population of the country. Fisheries is the only sector that offers cheap and good animal protein to the people, particularly to the economically weaker sections of the society and thereby it serves as a means to ensure national food security. It is also contributor of foreign exchange earnings for several countries including India through export. The potential forward and backward linkages through boat building, construction of fishing harbours, fish processing etc., contribute further to diversification and strengthening of the regional and national economy.

India occupies second position in the world in aquaculture production and contributes to about 7 % of world production. Fishery sector in India provides employment to about 6 million fishermen and another six million are employed in fishery related activities. That amounts to about 1 % of the total population that depends upon fishery sector in India.

Inland aquaculture has been the major fish producing system in India. Inland Production includes catches from rivers, tanks, reservoirs and lakes. Major states, which are involved in inland aquaculture, are West Bengal, Andhra Pradesh, Orissa, Tamilnadu, Madhya Pradesh, Karnataka and Maharastra. Aquaculture is generally dominated by traditional species but there is a tendency for production of high value species like shrimp, which is also environmentally degrading and has come under increasing scrutiny and criticism. India is the third largest producer of fish and second largest producer of inland fish in the world. It is a source of cheap and nutritious food besides being a major foreign exchange earner .The fisheries sector provides employment to over 11 million people engaged fully, partially or in subsidiary activities pertaining to the sector, with an equally impressive segment of the population engaged in ancillary activities.

Potential of fish production from marine and inland sources has been estimated at 3.9 million tonnes and 4.5 million tonnes, respectively. Having almost reached a plateau in production from the coastal waters, the scope for increasing fish production from marine sources now lies in the deep sea. A comprehensive Marine Policy was launched in November 2004 to facilitate sustainable deep sea fishing . In the inland sector, the potential for fishery development in East and North-Eastern State is immense. Fish is an important constituent of diet of the people of these States. Development of fisheries can go a long way to tackle the problem of food as well as unemployment in these States.(Table-2)

The inland fisheries resources of India are noted as much for their heterogeneity in composition as for as their opulent productive potential. India is endowed with a vast expanse of open inland waters in the form of rivers, canals, estuaries, lagoons, reservoirs, lakes, ponds, tanks etc. (Table 3).

Although the vast and varied inland fishery resources of India have a rich production potential, this potential has not been achieved. The production potential of the major river in India, the Ganga, in its lower reaches, is estimated

Table-2: Production and export of marine and inland fish in India

Year	Fish Production (Million tonees)			Export of marine products	
	Marine	Inland	Total	Quantity ('000 tonnes)	Value (Rs. Crore)
1950-51	0.5	0.2	0.7	20	2
1960-61	0.9	0.3	1.2	20	4
1970-71	1.1	0.7	1.8	40	35
1980-81	1.5	0.9	2.4	80	235
1990-91	2.3	1.5	3.8	140	893
2000-01	2.8	2.8	5.6	503	6296
2001-02	2.8	3.1	5.9	458	5815
2002-03	3.0	3.2	6.2	521	6793
2003-04(P)	3.0	3.4	6.4	412(P)	5739

Source : Department of Animal Husbandry

Table 3: Inland Water resources of India

Type	Quantity
Rivers and Canals	45,000 km + 126, 334 km
Reservoirs	3.15 million hectare
Estuaries	2.7 million hectare
Floodplain wetlands	0.24 million hectare
Ponds and tanks	2.25 million hectare

Source: Sinha and Sinha (1999)

at 198.3 kg / ha / yr, whereas the actual fish yield is 30.0 kg / ha / yr, and thus, only 15.2% of the potential is harvested (Sinha 1999). At the present level of management, the yield from the Indian reservoirs, on an average, is about 30 kg / ha, whereas a production of 50-100 kg / ha can be easily achieved from large and medium reservoirs, while the small reservoirs have the potential to yield 100-300 kg / ha. The floodplain wetlands, commonly called beels in India, have a rather poor yield, 100-300 kg / ha, against a production potential of 1,000-1,800 kg / ha / yr through scientific management. The present average productivity from aquaculture ponds and tanks is 1,830 kg / ha / yr against a much larger potential.

Among the other states of India, West Bengal provides largest quantity of fish from inland fisheries. The second largest is Andhra Pradesh, but is a poor second. Orissa is the third largest followed by Tamilnadu. In marine fish, Gujarat is the largest, producer followed by Kerala and Maharastra. The production data in million tonnes and per capita fish production in major states are given in Table-4

Among the fish consuming states, per capita consumption of fish is the highest

Table-4 Levels and Per Capita Output of Fish in Major Fish-Producing States

States	Fish Production (Million Tonnes)			Per capita Fish Production (in Tonnes)		
	Marine	Inland	Total	Marine	Inland	Total
Andhra Pradesh	15.2	20.40	35.60	0.21	0.28	0.49
Gujarat	60	0.6	60.60	1.32	0.01	1.33
Karnataka	21.75	0.87	22.62	0.44	0.02	0.46
Kerala	53.3	0.49	53.79	1.72	0.02	1.74
Maharashtra	38.7	0.77	39.47	0.45	0.01	0.46
Orissa	12.32	13.49	25.81	0.36	0.39	0.75
Tamil Nadu	34	10.8	44.80	0.57	0.18	0.75
West Bengal	15.3	74	89.30	0.21	0.99	1.20
Goa	8.42	0.36	8.78	6.06	0.26	6.32

Source- Directory of Fishery ,Bihar

in Goa. West Bengal and Kerala are in close second and third position. The annual per capita consumption of fish and consumption per thousand households are given in Table 5.

IV. FISHERY POLICY IN BIHAR

The fishery policy of the government of Bihar consists of four major components as compiled from the various circulars of the government . These are :

Table 5: Annual Per Capita Consumption of Fish in Major States of India

States	Quantity (0.00K.G)	Fish Consumption per 1000 Households
Andhra Pradesh	0.84	240
Gujarat	0.24	79
Karnataka	0.96	116
Kerala	12.72	829
Maharashtra	0.96	160
Orissa	2.4	517
Tamil Nadu	0.24	206
West Bengal	5.64	848
Goa	14.64	926

Source: NSS of India; cited in Handbook on Fisheries Statistics, Orissa, 1996-97, Directorate of Fisheries, Government of Orissa. P. 135.

1. Leasing policy,
2. Subsidy Policy,
3. Fish seed hatchery and infrastructural support,
4. Powers , controls and conflict resolution.

4.1 Leasing Policy in Inland culture Fishery in Bihar

The leasing policy is a very important tool in the hand of the government to effect any change in aquaculture at the ground level. The leasing arrangement of fishing rights is different in different states. In the case of Bihar, prior to FFDA, (Before 1981) the Circle Officers (C.O.) of the districts under the administration of the Department of Revenue and Land development were mainly responsible for the lease of the government ponds.

In 1981 FFDA was combined with District Fishery Department for better coordination. Today in Bihar, District Fishery Officer is redesignated as District Fishery Officer cum –Executive Officer of FFDA. According to the leasing policy of the government of Bihar, as stated in the Compendium 2001, there are three types of leasing Policy: -

1. Long term settlement (LTS) for 10 years
2. Short-term settlement (STS) for 3years.
3. Open bid (auction / dak system) for 1 years

1. LTS For 10 years

The prime focus of the government for the long-term lease was to construct the ponds. Those ponds, which were in bad condition, the department was responsible to frame a project to renovate the pond and this project proposal was sent to a concerned lead bank which funded the project .The time period to get the money recovered was about 8 years.

The state of Bihar has government owned ponds with an area of 65000 ha. It had been estimated that every pond needed reconstruction and renovation of at least once in every ten years. A pond that occupies a hectare of land requires Rs.4 lakh of for such reconstruction. Bigger ponds or smaller ponds needed proportionately more or less funds.

2. STS for 3 years

Such three-year lease is given to a cooperative society at the block level. It was the government's decision to help fishermen's cooperative and there was one such cooperative generally in each block and such cooperative was given the lease. Usually, only one cooperative society got all the ponds available for lease in a block. To strengthen the cooperatives, a provision was made by which every fisherman was to contribute 2 ½% of his income to the cooperative.

3. Open Bid/Dak system for 1 year

The open bid or dak system was followed when,

a) There was no cooperative society in the block.

b) The previous cooperative has been declared as a defaulter.

c) There has been no election of the executive body.

d) No auditing of the cooperative has been done.

e) No general meeting of the society had been held.

f) When cooperative did not show any interest to take any particular pond / tank and there was a chance that these ponds would remain as *'Parata'* or unleased.

In the case of long term lease or short term lease, the society or the individual paid security deposit or *Jalkar* which was decided on the basis of the annual productivity of the pond. For the pond of size 4 hectare, security deposits was to be the 10% of annual production of the ponds and for the pond of size more than 4 hectare it was be 5 % of annual production. For example, if a pond of size of one hectare have yield of 80 kg and the price of fish in market is Rs.20 / kg, the total value of the fish produced would be Rs 16,000 (80kg x @Rs.20) and security deposit would be Rs.1600. The production figure was assessed at the end of the every three years.

The estimated production figures and annual productivity were decided by a committee consisting of Deputy Director (fisheries) as the president, representatives, of *Matsya Jeevi Sahyog Samiti* nominated by government (member), representative of *Matsya palak* nominated by the government (member) ,District-fishery-officer cum chief executive officer and Asst. fishery director – member secretary.

However, if the security deposit was above Rs 50,000 and less than Rs. 1 lakh the committee was headed by Director of the fishery department as president with joint fishery director(headquarter), Joint Registrar, cooperative committee, representative of state level *Matysa Jeevi coop. committee* and Deputy director as members.

For ponds having security deposit of more than Rs 1 lakh, security deposit was decided on the recommendation of a committee formed at the director level, and decided by the government. Some of the other aspects related to leasing were given in various other circulars, the gist of which is given below.

1. Ponds having size 4 hectare or more than 4 hectare, which were not under the LTS, would be settled with Matsya Jeevi Sahyog Samiti formed at the Block level (in case the cooperative is ready to take the ponds by paying the fixed deposit).

2. If cooperative society is not willing to take the ponds at the pre-determined security deposits, then such ponds would be settled by open auction in the newspaper. For the pond having annual deposits of more than Rs.10, 000 / invitation for the bid

should be published in the newspapers. Information of the *dak* should be sent to the *Mukhiya* of Gram Panchyat. A notice of dak should also be sent to the State level Matsya Jeevi Samati 15 days before the starting of the leasing process.

3. Open auction should be done in the presence of following officers
   a) Deputy fishing director
   b) DFO cum executive officer
   c) Asst. fishery director
   d) Fishery Inspector of the area
   e) *Mantri* of Matsya Jeevi Sahyog Samiti of that area.
4. There was no need to give information in newspapers for *Jalkar* having security deposits less than Rs.10,000 but other processes were the same.
5. The settlement was to done before the deadline in order to make next settlement on time.
6. If '*Pattedar*' (lessee) was lazy in depositing the security money, a show cause notice was sent to him.
7. With regard to the settlement and revenue collection of the pond it was provided that the settlement of all *Jalkar* should start from 1st April every year .One third of the lease amount should be collected before the settlement, one third before 31st July and the rest before before 31st January of the next year. If the settlement is done with any individual for a year then half of the total amount of lease for a year should be taken before allowing the pond on lease. Remaining half of the amount should be collected in two instalments at the regular interval of three months. If total amount of the security is Rs. 1000 then entire amount should be deposited before grant of lease.
8. Only fishermen of that Panchayat in which Jalkar lies would be selected for the LTS. In the absence of any fisherman in that panchyat it would be done by fisherman of nearby village panchyat. The rules provided for involvement of as many fishermen as possible. For example,

Size of pond	Settlement is done
Upto 1.5 acre pond	One of the member of the fisherman family
Upto 3 acre	Two separate member of two fisherman family
Upto 3 to 10 acre	Each member of a fisherman family @ 2 acre per person of a fisherman family It would be done collecting group leader would be chosen by them.

4.2 Pattern of assistance or subsidy given to fish farmers by the Bihar Government.

If the pond or tank is used for the fish farms, the government provided subsidy of 10-15 % of total cost based on the costs and economic condition. If the pond or tank is being utilized for hatchery, the government provided subsidy of 20%. General subsidy was given based on the caste system. For the renovation or reclamation of the village ponds, the input subsidy was 20% for the general caste and 25% for the SC / ST and others.

With regard to the loan, as soon as the registration of the loan was completed, the project proposal, for the concerned pond was prepared by *Jaklar Engineer* under the guidance of the chief executive officer. This project proposal, with the consent of fishery executive officer who was authorized to approve the loan, was sent to bank with the required certificates.

It was the duty of DFO-cum-CEO that loan was sanctioned within 6 month of the settlement. The development work of the *jalkar* was to be done within a year of the settlement. If it was not done, a show cause notice was sent to the concerned person. It was the responsibility of the DFO, fish executive officer and the fishery inspector to ensure the on time repayment of the loan to the bank.

It was be the responsibility of the Deputy field Inspector (regional) to inspect the ponds given on LTS after every 3 months in order to ensure that there is

(a) Proper collection of revenue from the ponds,

(b) Repayment of installment of the Bank-loan on the time, and that

(c) Development work of the pond was done after the approval of the loan.

A copy of the inspection report was to be sent to the Department of fishery. A show cause notice was to be sent to the lessee, if he did not follow any of the rules.

4.3 Hatchery

There were subsidies provided to the extent of 25% of the cost of setting up hatcheries. But only 10% of the hatcheries were functional in the state. The table-6 shows the subsidy, investment and hatchery sizes.

Mr. Sadai Mukhiya of Tamuriya Village of the Lakhnaur Block of the Madhubani district ran a hatchery unit. His case provided a typical example of private hatchery in the state. Total no. of the

Table 6: Hatchery size, subsidy and investment

Size of Hatcheries	Expected Expenditures (in Lakhs)	Subsidy	Size
1 ha	2.765	Either Rs.20,000 or 25% of the cost	Rectangle
1.75 ha	4.205	- do -	Circular
3 ha	5.289	- do -	Circular

temporary labors hired by Sadia Mukhiya in his hatchery was 15(for 3 months @Rs.1500 / month). These labour were used for pond reclamation, netting and bringing brooder. Total umber of the permanent labour employed was 3. They worked for 12 months @ Rs.1500 / month for selling Jeera, Brooder, etc. So total number of people employed was 18.

Before establishment of the pond, these lands were used for the rice cultivation and ponds were being used for makhana and fish cultivation. Source of water supplies in the hatchery unit and the ponds was met by his own motor pump. The arrangement for procurement of fish seed in the village is met y the Narmada Pokhara which was near the village. Mostly Spawn were sold at the hatchery unit and local fishermen and small retailers came to hatchery to purchase it. Sometimes Brooder is sent to local fish market of Tamuriya to get good price.

There was no social conflict as it is a private hatchery. There were no cases of poaching (inspection by labours). Sometimes cases of poisoning were found. Sadai Mukhiya annually invested approximately. Rs.1000 for the maintenance of his hatchery.

This is a private hatchery and Sadai Mukhiya got the entire profit. Benefits of this hatching unit were employment to the local fishermen and timely availability of fish seed to other fish cultivators. There was no such problem faced by Sadai Mukhiya while working in the village.

Mr. Sadai Mukhiya is an innovative farmer. He practised the technique of integrated fish farming. He produced 'Makhana' in his fish ponds. Mr. Mukhiya was not happy with the department of fishery. He did get any subsidy or assistance for the maintenance of his hatchery as there is a provision of providing subsidy only to the individual who shows his willingness to establish a hatchery, not to exiting hatcheries for the purpose of maintenance.

4.4 Power for Pond Lease, Control, & Dispute Settlement

The decentralization of power by the Government of Bihar in respect of annual deposit for the ponds was as follow:

Name of the officers	**Settlement of pond up to the annual security deposit**
District fishery officer – cum – Chief executive officer	Rs.2000 rupees
Deputy fishery director (Regional)	Rs.2000 – 5000
District *Samaharta*	Rs.5000-20000 with Recommendation from the district *Samaharta* to DFO and deputy fishery officer
Director, fishery	Rs.(20000-50000) on the Recommendation from district Samaharta director, fishery
Recommendation by the Government.	Rs.50000

In case of LTS , as bank loans were involved , to ensure collection of revenue and repayment to the banks, certain control were provided.The fixation of date of netting of the ponds was to be jointly done by DFO-cum-CEO and lessee and this information was sent to the Banks.All these directions of the government were followed by FFDA strictly in that district.

All the dispute settlement was done by a committee headed by Deputy-fishery Director (Regional), DFO-cum-CEO, and FFDA would send the recommendation of this committee to samaharta-cum-president. Any dispute was to be settled within 3 months.

According to Durga Mukhiya a cooperative society faces conflicts in different ways: Sometimes there is a conflict over the allotment of the ponds to the members. Conflict over the selection of a sangathan Karta for a particular pond, conflict over the number of fisherman to be employed for a pond under a Sangathan Karta and conflict over the poaching by Sangathan Karta and its members existed to a great extent.

The Conflict resolution by the cooperative is done as follows: If the conflict was between members of particular pond then it was solved by Sangathan Karta. If the conflict was between Sangthan Karta and members, then it was solved by executive committee. If any of the members didn't obey the decision of the executive committee, firstly, other ponds in different panchayat were allotted to him. If he is not ready then his membership was cancelled by executive committee and information was sent to DCO.

V. PRODUCTION AND ECONOMICS OF INLAND FISHERY

In order to find out the economics of inland fishery , a study was undertaken in the two districts of the state –the Madhubani district of North Bihar (having highest fish production) and Rohtas district of South Bihar (having lowest fish production) . Such choice was intendendly made to enable appreciation of a good district and a bad district. A field research was taken over a period of two month (April-May, 2005) in these districts. Five cases of cooperative fish cultivation and six cases of private fish cultivation were studied in details. Exhaustive interviews were conducted with the help of open-ended checklist. Besides visiting some sites at the villages, discussions were held with Secretary / Chair Persons of co-operatives, contractors of village ponds and private owners separately. Several sessions with the fishery department officials at various levels like Deputy Director , District fishery officers , DEO , fish traders and other players to understand and document the evolution of inland fisheries policy in the state and its impact on inland fisheries economy were also held .

5.1 Sample studies of fisheries

As stated above, all the cases have been divided into two groups. One is cooperative or collective and the other is non-collective. Again under collective

Table: 7(a) Economics of collective fishery (Cooperative experience)

Name	Location	Area (Ha)	Lease Amou mt (Rs)	Fix ed	Variable Cost	Total Cost	Value Cost	Profit (Rs)	Profit (Rs)	Production (quintal)	Produ ctionction / ha
Pandol MatsyaJeevi Swalambi Samiti	Village - Bhagawatipur Block- Pandol Dist- Madhubani	25	1,50,208		4,94,000	4,94,000	7,50,000	2,56,000	10,240	150	6
Rajnagar Prakhand Samprava-rtit Matsya Jeevi Samiti	Village - Raghopur Ballat Block- Ragnagar Dist- Madhubani	30 ha	3,50,000 / year		13,10,000	13,10,000	Rs. 18,00,000	4,90,000	16333	360	12
Aandhra-thari Prakhand Mahilla matsyajeevi Swalambi sahyog samiti	Village - Thari Block- Andhrathari Dist- Madhubani	2.125 ha	20,530	8000 .00	60,130	68,130	Nill (No prod uction due to fllod)	68,130	NA	Nil	0
Matsya zeevi sahyog samiti , Kochas	Village - Bharkar Block-Kochas Dist-Rohtas	75 ha	70,000		2,10,000	2,10,000	6,00,000	4,90,000	6533	300.	4

Table: 7(b) Economics of Non-Collective fishery (Private owners/Contractors experience)

Name	Location	Area (Ha)	Lease Amou mt (Rs)	Fix ed	Variable Cost	Total Cost	Value Cost	Profit (Rs)	Profit (Rs)	Production (quintal)	Produ ctionction /ha
Aandhri Pokhar	Village –Andhri Block-Benipatti Dist-	0.5 ha	. 2300		Rs.10,000	Rs 12,500	Rs. 22,000/-	Rs. 10,500	/-	2,100	5 3
Daroga Machali Farm	Village - Mahdiganj Block- Sasaram Dist-Rohtas	3	21,000		1,38, 000	1,38, 000	2,40,000	1,02,000	17,000	18	3
Mithila Matsya Hatchery Lakhnaur	Village- Tamuriya Block— Lakhnaur Dist- Madhubani	2.5 ha		9,000	Rs. 2,71,150	Rs. 2,72,050	Rs. 20,40,000	Rs. 17,67, 150.00	40,800	Spawn(50-60000) thousand Dhani fry (1.5 crore)	NA
Radhika fish farm	Village - Garnokha Block –Nokha Dist-Rohtas	1ha		3	45,000	48,000	1,80,000	1,02,000	40,800	30	12
Raja fish farm	Village - Diliya Block- Dehari Dist-Rohtas	6 ha.		10,00 0.00	36,000	46,000	Rs. 1,50, 000.00	1,04,000	5200	5 lacs fingerlings	20

there are two groups - one is cooperative formed at the Block level in each district and the other is village community pond. In case of non-collective, group is divided again into two subgroup- private contractors and private owners. These together involved 10 cases , taken from 10 villages .

The table 7(a) and (b) in the last two pages gives the overall summary of the 10 cases.

5.2 Production Trend of fish in Bihar - an Overview

The total fish production in recent years after the creation of Jharkhand state can be seen from the following figure 1, and figure table-8.

It may be seen that there was a steady increase in fish production up to 2003-04, there has been a decline in 2004-05.

Figure-1. : Production of fish in Bihar during 2000-05 in metric tonnes

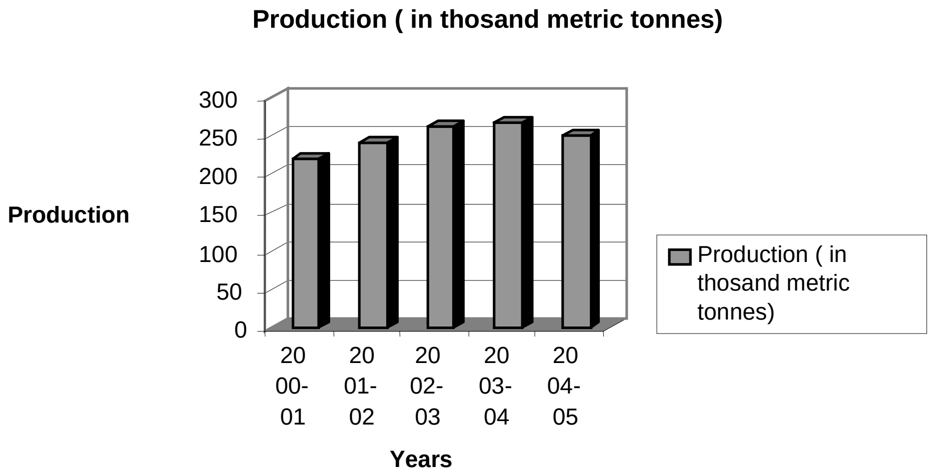

Table 8: Production of fishes in Bihar during 2000-2005

Years	Production (in thousand metric tones)
2000-01	22.16
2001-02	240.40
2002-03	261.00
2003-04	266.49
2004-05	249.25

(Source- Directory of Fishery ,Bihar

5.3 Construction of hatchery in private land

There is a provision for consolidation of hatchery in private lands . There are three models (which are not explained here).

5.4 Deployment of Capital and Labour

The fish cultivation is capital intensive (just contrary to the agricultural sector, which is labour intensive) Based on the case studies, we can see that the private owners are using only 2 or 3 permanent hired labourers on an average and amount of capital employed is between Rs 50 thousand to 1 lakh with productivity around 9.25quintal per hectare.

5.5 Structure and returns from the urban market of Madhubani district

The structure and return of various operators in the distribution channel in Madhubani, which is one of the districts studied here, are given in the Table 9.

5.6 Traditional and non-traditional fisher castes in inland fisheries in Bihar

Information about traditional and non traditional groups are given in Table 10.

Table 9: Income of various operators in distribution channel

	Whether fishermen caste	Margin earned (rolling)	Estimated turn over (kg/yr)	Annual net income
Wholesaler / preharvest contractor	No	5%	N.A.	Rs.2– 2.5lakh
Commission agent (adhat owner)	No	5%	Rs.40–50 thousand	Rs.70–80 thousand
Retailer / vendor	Yes	5–7 %	N.A	Rs.10–20 thousand

Table 10: Characteristics of traditional and non traditional fishery groups

Sl. No.	Items	Traditional fishercates	Non-traditional groups
1	Scale of production	10w / subsistence	Commercial / high
2	Technology	Low	High
3	Awareness / skills	Traditional	New / scientific
4	Credit	Little access	Accessible
5	Market	Retail	Wholes all
6	Income	Low	High
7	Role of women	Significant	None

5.7 Competitive Analysis of Inland Fishery in Bihar (SWOT Analysis)

The competitive analysis (SWOT analysis) of inland culture fishery sector in Bihar indicates that rich natural resources and low land cost are the *strengths* of the state and the unused Ox – bow lakes (*Mauns*) of 9000 ha , floodplain lakes (*Chaur)* of 35,000 ha , reclaimable fallow land of 2,08,000 ha in agri zone I , 1,65,000 ha in agri zone II , 1,02,000 ha in agri zone III can be considered as *opportunity* to develop inland fish cultivation . Lack of hatchery to supply good fish seeds, inadequate institutional arrangement (loophole in leasing policy), possibility of only inland culture fishery, centralization of power to cooperative, village panchayat having no role_in leasing out village ponds and unavailability of easy institutional credit are the *weakness* prevailing in this sector. Invasion of Andhra fish and fish from other states were draining out approximately Rs. 7 crore per month from the state. Increasing number of silted and dead government ponds are have also become *threats* to inland fish cultivation in Bihar.

In the context of such strength opportunities, weaknesses and threats, the following SWOT chart (see table 11) for fisheries can be drawn:

Table-11 : Competitive analysis of Fishery Sector in Bihar

STRENGTH	**OPPORTUNITIES**
Rice natural recources Low land cost Reclaimable Fallow land (ha)	Ox – bow lakes (Mauns)-9000 ha Floodplain lakes (Chaur- 35,000 ha) • Agri Zone I — 2,08,00 • Agri Zone II – 1,65,000 • Agri Zone III – 1,02,000 • Increased Market acess
WEAKNESS	**THREATS**
• Lack of hatchery • Inadequate institutional arrangement • Only inland culture fishery possible • Centralization of power to cooperative • Village panchayat have no role • Unavailability of easy institutional credit	• Invasion of Andhra fishes

VI . THE PARADOX OF LEASING POLICY

Earlier, the leasing policy was based on the dak or open system. It generated the large revenue of the government as the rate for dak was open. Government used to get 10 times more revenue in open dak than it got by leasing it to cooperatives.

But the main focus of the new leasing policy was to promote employment, livelihood, and self-employment among fishermen, although it had reduced the revenue generation of the government. New leasing policy was intended to focus on the downtrodden section of the society. New leasing policy was also focused on the fishermen's caste.

VII. ALTERNATIVE ORGANISATION FOR FISHERY

As explained earlier the fishery system operated either through cooperative societies or through private individual who took out to the fishponds either on short term or long-term basis. The cooperative societies also got the priority over individual in getting these ponds.

The Cooperative societies in the state were governed by the State Cooperative Act, 1935 as amended from time to time. The cooperative societies were of two types – Shajog Samiti in which government has substantial share capital or ownership. The cooperative's day-to-day function was with the executive bodies consisting of seven members, out of whom one was designated as Mantri and one as President. There was also in every cooperative society a Cashier. The Mantri was selected by an open ballot system but in reality more often the selection was made depending upon the social status and power enjoyed by him in his community.

The other kind of cooperative society was Swalambi Samiti. These kinds of samitis were started by the fishermen themselves. Here also, there were seven members in the executive body out of whom one was elected as President and other six continued as executive members. There was no provision of Mantri in Swalambi Samiti. All the executive members were selected in the general meeting by fishermen who were members of the society. The basic differences between the two societies are shown in Figure-2.

In case of Swahalambi society one of the executive body members was selected as Chief of the Executive Body. The Chief was endowed with power to settle the disputes and claims. The Swahalambi society was created in accordance with the state cooperative act as per its 1996 amendment.

In the execution of various schemes the powers were divided between the

Figure-II : Differences between two types of Cooperative Societies

Cooperative Societies

As per 1935 coop Act	As per 1996 Amendment
• It is known as '*Sahyog Samiti*'	• Such coops are known as '*Swalambi Samiti*'
• There is a share capital of the govt. in such coops	• No Share of the govt.
• Total no. of members in executive body = 7	• Total no. of members in executive body = 7
1 – *Mantri*	• No. provision of Mantri
1 – President	1-President
1 – Cashier	6- executive members
1 – Executive member	
• Here *Mantri* is selected by open Bahot	• Out of the remaining member is selected as Chief executive
	• Chief executive have power for settlements
	• Chief executive holds the post as per the desire of executive body
	• Out of the 7 member of executive body, one is selected as president
	• Members of an executive body are selected by a common meeting of members.

executive engineers of the irrigation department and the fisheries officers of the Government. In respect of execution of schemes similarly with regard to sanction of subsidy, the power was divided between Assistant fisheries development officers and district fisheries officers. The respective limits of financial power are given in the table 12.

It needs no mention that all these officers worked under the direct supervision of the concerned superior of the department.

Table 12 : Schedule Of Powers As Per Expenditure On Works

Nature of Delegation Execution of Schemes	**Designation of Officers**	**Extent of P. Work**	**Remarks**
Construction of Nurseries renovation repair and	a. Executive Irrigation Minor Irrigation Division	Above Rs.10,000 in each case	Subject to Budget Provision
Improvement of tanks and other water area	b. Asst. Fisheries Development officers and District fisheries officers	Uptp Rs.10,000 in each case	Subject to Budget provision
Sanction of Subsidy			
Sanction of subsify of renovation repair and improvement and private tanks	1. Asst. Fisheries Development officer 2. District fisheries Officer	50% of the total cost of subject Maximum of Rs.250 in each case	Subject of Budget provision .

VIII. FISHERY AND POLITICS

Fishery has been one of the driving forces of the politics in the state. Therefore the cooperative system which does not generate the maximum revenue for the governemt is patronized by the government because through this system the political parties in government can create the vote banks. It also become possible for the political leader to create local leadership through which they can reach the villages and particularly the fishermen communities. The government from time to time has advocated support from such cooperative on the grounds of raising the standards of the poor sections of the community by improving their subsistence level. There is always a question that in order to support the weaker section, the productivity in fishery and commercial viability of the fishery schemes are sacrificed.

IX. ISSUES AS VIEWED BY THE STAKEHOLDERS

In course of the study the case writer visited serveral villages and held dialogues with the village executives of the cooperative society and government officers in fishery and irrigation department. The views expressed by some of them are stated below:

One of the district level officers in fishery while commenting on the fishery policy said; “Earlier, the leasing policy was based on the dak or open system. It generated increased revenue for the government. As the rate for dak was open, government used to get 10 times more revenue in open dak than by leasing it to cooperative".

Another person remarked, "The main focus of the new leasing policy is to promote employment, livelihood and self-employment among fisherman, although it has reduced the revenue generation of the government. New leasing policy is more focused on creating opportunities for the downtrodden section of the socity. New leasing policy is more focused on the caste".

One of the village leaders who also has fish pond, had somewhat negative view on the fishery policy of the state particularly in terms of its effect in removing economic deprivation. His statement was as follows: "The ground reality is that the leasing of government ponds to fisherman have not helped them to improve their economic status becasue every year 20,000 hactare area of the government ponds are leased out, only ponds having area 10,000 ha(25000 acre) are productive. Suppose the average productivitiy is 1000kg / acre and the price of the fish in market is Rs.40 / Kg then total value of fish produced is Rs.100 crore(2500 acre x 1000 kg / acre @ Rs.40 / kg). Government takes only 1 / 10 of total produce as lease amount, that is equal to Rs.10 crore. If remaining Rs.90 crore is shared between all fisherman, their economic status would only nominally change. This figure negates the government's objective of employment generation and livelihood promotion.

One of the village elders mentioned that a major problem in long term lease as stated by fish pond lessees was that there was a lack of coordination between district fishery office and the sponsored Bank. More often the significant part of the lease period expired without any renovation work being taken up on the ponds. As a result, fish in initial period of lease got affected and productivity per hectare was generally low.

Another said that there were suspected cases of corruption and malpractices between Banks and government officials. In the process of clearance of project proposal. Sometime the delay was as much as 10 years.

Highlighting the problems of the fishery, one of the executive members of the fishermen's cooperative society mentioned about the maintenance of the ponds. He said that some of the ponds were taken on short-term basis and therefore the lessee is more interested in getting back their money without making any further investment in the ponds. This has given rise to variety of problems such as ponds becoming sallow due to soil erosion, erosion of the embankment therefore reduced water retention capacity, negligence towards cleaning of the ponds and in-adequate planning of the fish culture.

Besides, under the cooperative scheme, since the cooperative soceity got the lease, no individual member of the society was particularly totally committed to the project. In case of private individuals getting the lease, this particular aspect seemed to make a major difference.

According to Kamata Jee, an entrepreneur in fishery, poisoning of the tanks, poaching and serveral power cuts are the problems he faced. Villagers due to their personal rivalary put poision into his ponds. Last year, one pond of size 0.8 hactare was destroyed due to poisoning made by his known competitors. His ponds are spreaded in other villages; he faced a lot of problem of poaching in these ponds, which are far from his house.

He had kept a Chawkidar to look after these ponds but it was of no use, as most of the poaching was done by the young boys of (14-18) age. Besides, competitiors, in order to earn quick money, are cultivating thai Mangur which have been banned in Inida. During Mansoon season due to overflood of the ponds, Thai Bangur were carried into his ponds and thet ate all the small fish in his tank. This created a conflict between them last year.

Regarding fish seeds and spawns it is said that in 1 hactare , approx. 10,000 zeera fish seed should be put but he put zeera 20,000/hactare as, fish dies due to prevelant diseases in the ponds. Mr. Kamta Prasad had a good reputation in the market and he said that a good reputation in the market helped him to get good feed from the market.

Mr. Kamta Prasad had all type of arrangement for the fish ponds in his firm. He had prepared ‘Happa’ to keep the fish. Happa is a small water tank made of cement. He used cotton net to catch fish to avoid injuries to fishes. He had his own tube-well motor pump for which he used electricity. He had no diseal set. Rs.325 was monthly bill for his house and his connection was from the village electricity pole. He has some kind of official arrangement with electricity department. He had kept oxygen cylinder for the oxygen packaging of the fish as he did retail selling of the fish. He charged @Rs.4 per pack. The annual expenditure of keeping cylinder was Rs.1200 (Rs.200 x 3-4 times).

Kamta Prasad, about his own experience said, “If the colour of water is greenish, there is no need of potash, urea or cowdung for the pond and it is an ideal condition of the water. If the colour of the water is white, there would be no growth. (Slow growth). If the colour of water is black - possibility of dying of fish and spread of diseases in the pond could be possible. So urgent need to put Chhuna or Banana tree (which have sufficient calcium) was essential.

Kamta Prasad Singh brought fish seed from the local river son at Dehri-on-sone. Either the local fisherman or the Bengali fisherman came for spawing in the month of July – August. This time fishermen put their net into the river. The red colour of water showed the presence of jeera in the water.

One business secret Mr. Kamta Prasad revealed was that to take Baati of jeera after one or two days of collection increased the survival rate of spawns. As a major part of the fish feed (Zeera) was supplied to local fishermen from the river Sone as they did not have sufficient capital to purchase seeds from Howrah. But this river has been polluted by the wastages of the different factories which are engaged in the manufacture of paper, chemicals, sugar, cement etc. Theese are the major sources discharging over 4 million gallons of wastes per day into the river Sone.

The construction of the anicut in the main river, Sone has rather restricted the flow of water during summers only to the tune of 100-15- cusecs. In the absence of adequate dilution, there has been a serious pollution hazard in the river which extends up to a distance of 22 kms of the river down below, the fallout of which is that no major crap could survive. The highly putrescible organic matter present in the waste drew heavily on the oxygen body of the stream and changed the character of the water.

The entire environment acted as a barrier to upward and downward migration of the flood fish. Fish captured in the area was not relished because of the offensive odour. A case of heavy mortality was also recorded. It is due to high concentration of chlorine from plants and paper mill wastes which caused the low oxygen level.

It is not that fisheries had only lot of problems. It also helped in social activities in the village. There is one school in vishunpura village, an Upper Primary School. It is partially aided by the Government. This aid is insufficient to meet the salaries of the school teachers. There are totally forty eight students studying in Class five to eight with three teachers to cover the syllabus. Hence, the village headman and other members of the local committee, in consultation with the villagers, decided to hand over the income of community fish pond to vishnupura upper primary school, in the larger interest of the village, so that the revenue obtained through angling from the community pond could be used to pay the salaries of the school teachers and a part of the balance to be spent for the purchase of fingerlings for stocking the pond.

In 2001, and agreement was entered into between the village loval committee and the school management under which 75% of the total revenue collected will of to the school management to meet the salaries of teachers and the remaining 25% of the amount will be used by the village local committee for the following activities: To meet the petty expenditures during the cleaning of village, which took place once in a year; b) on death of person in the village, money to be provided to the family for the purchase of wood; and c) to meet the expenditure of the village sports club.

The total revenue obtained in the year 2004 was Rs. 45,048.00 of which Rs.26,048.00 was through angling on Saturdays and Rs.19,000.00 through leasing.

The community fish pond at Vishnupur is the first of its kind in the Rohtash district, where the recreational fishery is well organized and the revenue collected is utilized for meeting the salaries of school teachers and also for the village welfare activities. The reponse of angling enthusiasts at vishnupura community pond as well as the monetary benefits obtained from angling had started inspiring small and marginal fish farmers of neighbouring villages to adopt a similar method of sport fishery in their ponds to increase their income. A small farmer in the neighbouring vishnupur village had already adopted the same technique of allowing people to do angling in his pond for a fixed fee of Rs.15/- per rod on all days excepts on sundays.

Thus, the villagers of vishnupura have proved that substaintial income is possible from a community pond through recreational fishery development. They have also proved that a community approach for an organized sport fishery activity could result in better utilization of revenue for the welfare of the village.

X. THE FULL CIRCLE

The adminstrators in the state fisheries department were partly worried that the inland fishery in the state was not doing as well as it should. They wanted that the subject should receive some more attention of the professionals who were competent and had expertise about fisheries and also of management experts, who could to thoroughly examine the issues and make appropriate recommendations to the government.

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Appendix : I

Number of Blocks, Water spread areas in Hectares (Private and Government Sectors, their total) and the Average Water Area (ha) per Block

Name of Districts	Number of Blocks	Number of Villages	Number of Ponds			Water spread Area (ha)			Water Area (ha) per
			Govern ment	Pvivate	Total	Govern ment	Pvivate	Total	
Patna*	23	1294	739	411	1150	2101.82	74.55	2176.37	94.62
Bhojpur	14	993	701	174	875	1235.20	107.20	1242.40	88.74
Buxar	11	1134	456	125	581	500.00	75.00	575.00,	52.27
Kaimur	11	1715	N.A.	N.A.	N.A.	N.A.	N.A,	2469.00	224.45
Nalanda	20	1065	225	905	1175	2598.00	868.00	3466.00	173.30
Rohtas	19	1695	385	297	682	1150.00	235.00	1385.00	72.89
Gaya*	24	2925	1106	N.A.	1106	2175.60	400.00	2575.60	107,31
Arwal	5	426,	N.A.	N.A.	295	N.A.	N.A.	656.06	131.21
Aurangabad	11	1884	444	N.A.	444	1187.00	220.00	1407.00	127.90
jchanabad	5	521	N.A.	N.A.	275	N.A.	N.A.	520.40	104.08
Nawada	14	1099	N.A.	N.A.	511	1831.50	1352.50	3184.00	227.42
Saran*	20	1813	908	1300	2208	530.00	1000.00	1530.00	76.50
Gopalganj	14	1566	209	30	239	929.68	68.20	997.88	71.27
Si wan	16	1553	630	564	1194	639.92	171.74	811.66	50.72
Muzaffarpur*	16	1852	744	187	931	1473.92	348.18	1822.10	113.88
Sitamarhi	17	845	1354	1582	2936	1430.72	968.00	2398.72	141.10
Shcohar	5	208	232	105	337	114.00	175.30	289.30	57,86
Vaishali	15	1638	667	438	1105	704.00	268.69	972.69	64.84
East	27	1345	519	341	860	3622.97	380.57	4003.54	148.27

Appendix-II

Possibilities of the Excavation/Construction of new ponds in the 10% of the Current fallow Land and the Number of ponds Likely to be Constructed/Excavated in Each District of Bihar.

Agro-climatic Zones	Distict	Reclaimable Fallow Land (ha)	10% of the current fallow land	Number of ponds of 0.1276 ha that can be Constructed
	1. Darbhanga	35,000	3,500	27,429
	2. Madhubani	30,000	3,000	23,510
	3. Samastipur	8,000	800	6,269
	4. Sitaraarhi	10,000	1,000	7,836
Zone I	5. Sheohar	N.A,	N.A,	N.A.
	6. Muzffarpur	1 24,000	2,400	18,808
	7. Vaishali	6,000	600	4,702
	8. Saran	20,000	2,900	22,727
	9, Stwan	6,000	600	4,702
	10. Gopalganj	4,000	400	3,134
	11, East Champaran	15,000	1,500	11,755
	12. West Champaran	41,000	4,100	32,131
	Total Zone-1	2,08,000	20800	1,63,009
	13. Kishanganj	16,000	1,600	12,539
	14. Purnea	39,000	3,900	30,564
	15. Araria	29,000	2,900	22,727
	l6. Katihar	36,000	3,600	28,20
Zone II	17. Madhepura	13,000	1300	10,188
	18. Saharsa	8,000	800	6,269
	19.Sapaul	7,000	700	5,485
	20. Kliagaria	11,000	1,100	8,620
	21. Begusarai	6,000	600	4,702
	Total Zone-II	1,65,000	16,500	1,29,3V
	22. Patna	34,000	3,400	26,645
	23. Na!anda	33,000	3300	25,862
	24. Bhojpur	14,000	1,400	10,971
	25. Buxar	11,000	1,100	8,620
	26. Rohtas	9,000	~900	7,053
	27. Kaimur(Bhabhua)	19,000	. 1,900	14,890
	28. Gaya	1,49,000	14,900	1,16,771
	29. Jchanabad	6,600	660	5,172
	3O. Arwal	4,400	440	3,448
	31. Nawada	39,000	3,900	30,564
	32. Aurangabad	55,000	5,500	43,103
Zone III	33. Bhagalpur	30,000	3,000	23,510
	34. Banka	20,000	2,000	15,673
	35. Muncr	44,000	4,400	34,482
	36. Lakhisarai	N.A.	N.A.	N.A.
	37. Jamui	34,000	3,400	34,482
	38. Shcikhapura	N.A.	N.A.	N.A.

(Source- Directory of Fishery ,Bihar)

Kurien, Verghese (2005) *I too had a Dream*

Roli, New Delhi, pages 250, Rs.395*

Reviewers : S.K. Chakraborty[1]
& D. Chakraborty[2]

Dr. Kurien's autobiography offers to its readers a saga of impregnable integrity. In these days of dis-integrating integrity and vanishing ethico-morality the tales told in the book show how ethico-moral competence, as a foil to professional competence, is not an exercise in fanciful idealism. He emphasizes the point, early in the book, and correctly at that, that integrity unto one's own self is a pre-condition to integrity in dealings with others (p.xiii). Probably the most telling example of this principle in action was in his confrontation with Jagjivan Ram, a heavy-weight central minister and astute politician of his times (pp.165-66). The latter had summoned Dr. Kurien to help set up a private dairy with funds from the cooperative dairy system. He refused to oblige, and therefore had to bear the brunt of the minister's wrath. But he had the requisite ethical stamina, so did not buckle.

There are two fundamental philosophies which govern our lives. One emphasizes that an individual should run after name and fame. This is called 'ambition'. The other prefers name and fame to run after an individual who concentrates fully on duties at hand. For those inspired by the latter, the life of Kurien could serve as a worthy model. In a letter (in the Prologue) to his grandson he wrote,

"To be quite honest, service to our nation's farmers was not the career I had envisioned for myself. But somehow, a series of events swept me along and put me in a certain place at a certain time when I had to choose between one option or another. I was faced with a choice that would transform my life. I could have pursued a career in metallurgy and perhaps become the chief executive of a large company. ... Yet, I chose none of these because somewhere, deep down, I knew I could make a more **meaningful contribution** (emphasis added) by working here in Anand, Gujarat." (p.XII)

The learning from the above is that it was not a calculated move by him to earn more money or position. It was an intuitive decision impelled by a higher cause. Reward and fame followed him incidentally.

In the same letter, reflecting on the values which stood him in good stead, he held

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1. Former Professor and Founder-Convenor, Management Centre of Human Values, Indian Institute of Management, Kolkata

2. Lecturer, Birla Institute of Technology (Mesra) Ranchi – Deemed University (Kolkata Extension Centre)

‘personal integrity’ to be most important. He wrote,

“I have often spoken of integrity as the most important of these values, realizing that integrity – and personal integrity at that – is being honest to yourself. If you are always honest to yourself, it does not take much effort in always being honest with others.” (p.XIII)

He follows it up later in the book with two more values,

a) to lead by personal example (p.216)

b) respect for time (p.216)

Kurien amply demonstrated the above values in his career and life. One such incident occurred in connection with mopping up of the mess (corruption) in the Delhi Milk Scheme within forty-two days, and making it a new brand (p.88). He did this even at the risk of making enemies in Delhi’s corridors of power. Thus, he managed a complete turnaround in just six weeks, leading from the front.

There is yet another important learning from the same Prologue / letter. He reflected,

“Yet, there is little correlation between circumstances of people’s lives and how happy they are. Most of us compare ourselves with someone we think is happier … But when we start looking closely we realize that what we saw were only image of perfection. And that will help us understand and cherish what we have, rather than what we don’t have.” (pp. XIII-IV)

This is a more sound and realistic principle of happiness. It is indeed true that the root of unhappiness is comparison with others in terms of what we do not have (money, status, position in organization etc.) instead of what we have and others do not. Of course, it is not clear why the phrase ‘image of perfection’ has been used. Instead, ‘image of happiness’ would have been the appropriate expression. One should learn to feel happy by comparing oneself with persons less fortunate than oneself.

It is a general Indian belief that the higher Divine Will works for our good, though we may not be able to perceive or evaluate it properly in the immediate. Kurien’s life was no exception. In no uncertain terms he expressed his displeasure (pp.9-10) on being deputed by the Government of India to the National Dairy Research Institute at Anand. He had big dreams of leading a luxurious life and in no way Anand suited his temperament. He hated Anand (p.20). But he had to accept the posting because the government had spent for his higher education in the USA. As destiny would have it, he came in contact with, and was intrigued by a band of tenacious dairy farmers and their leader - Tribhuvandas Patel (pp.22-23). Gradually he fell in love with Anand. He quit the government job and joined the Kaira Milk Cooperative. The rest is history. Now he wants that even his body be cremated in Anand only (p.236). This network of events shows that the grand design of Providence cannot always be comprehended through secular rationality only.

The chapter on ‘History in the Making’ refers to an interesting incident involving a *chhaya jyotishi* who had predicted a phenomenal rise in Kurien’s career (p.26).

He, although a non-believer in occult matters (p.27), admitted that this prophecy had indeed turned out to be true. However, he also added that it was, " … one of life's curious accidents" (p.27). Such a remark about the *jyotishi's* accurate prophecy smacks of uncharitableness towards a capacity which is as thorough as any other. Rather, this experience in Kurien's life corroborates what has been said in the previous paragraph: the inscrutable Providence presiding over all affairs.

There is an English phrase 'living for others' which has been called in the *Bhagavad Gita* as, '*sarva bhuta hite ratah*'. Kurien's philosophy of life epitomizes this. He avers, " … but if you work for others, there is a deeper sense of fulfillment and if things are handled well, the money too is more than adequate (p.28). The last part of the statement refutes a common argument that a life lived for an ideal necessarily implies sacrificing material goals. Similar views have been echoed by him elsewhere also like:

a) "I chose to remain in Anand, as an employee of farmers, all my life" (p.81).
b) " … an employee of farmers has to please only the farmers" (p.100).

Nowhere has it appeared that Kurien had been a discontented man, not satisfied with his life and its myriad circumstances.

At one place Kurien provides sound insight into cohesive teamwork. Three men were at the helm in running the Kaira Cooperative: Tribhuvandas Patel (the person representing the dairy farmers), Mr. Dalaya (a colleague of Kurien) and Kurien himself. However, as Kurien added, the three had, " … distinctly different … manners and skills" (p.37). Yet they formed a cohesive team because of, " … tremendous respect for the integrity and the strength of the other two" (p.37). This enabled them to find solutions amicably, instead of falling apart over different viewpoints they had. This quality is called *mudita* in Patanjali's *Yogasutras.*

Kurien displayed no hesitation in exposing the business motives of the MNCs. Generally bureaucrats leaders in India, for their own reasons, are found to ignore the dirty games played by the MNCs. But he bluntly observed, " … the technical advice of 'experts' is all too often dictated by the economic interests of the advanced countries and not by the needs or ground realities in developing countries" (p.42). Later in the chapter 'From organization to Institution' he highlights another incident which involved a heated altercation of his with the Chairman of Nestle whose dealings were bordering on bullying tactics commonly adopted by the MNCs. Kurien retorted:

" I've been in this game for fifty years and I know your modus operandi well … You are unable to buy him (Kurien himself out, which is what you'd normally do. But you can't buy me out …"

Whenever situations demanded he used to rise to the occasion and face it resolutely. He observed, " … with adequate support, confrontation at the right time pays off" (p.46). Thus he had confronted the UNICEF when it was wanting to dictate terms over the kind of powder plant the cooperative desired, although its role was to offer financial assistance only.

The Chapter 'On a Roll' imparts a unique lesson on advertising and marketing ethics. When Amul decided to venture into marketing baby food it had to compete against Glaxo (p.71). It was a difficult challenge. However, the hurdle was decided to be overcome by taking, " … a holistic view of marketing" (p.71). This would even include teaching the mothers about reconstituting milk properly (without undermining breast-feeding) to prevent malnourishment of babies. However, in addition, normal advertising was also done. For the first time in India extensive surveys were conducted in three big cities, " … to find out behavioural and consumption patterns of consumers" (p.71). Ultimately, Amul did give Glaxo a run for its money. This is a good example of sustainable growth by focusing on the quality of means adopted i.e. ethical marketing.

The ruling gospel – 'fast and heady wins the race' - in the corporate sector has been contested by Kurien in terms of long-term sustainability. He believed that the philosophy of the Cooperative is to progress in a 'slow and steady' manner (p.75). Patience was his watchword. However, he candidly admitted that the advantage with the cooperatives lay in the fact that they had no compulsion to placate either the shareholders or any boss by making profits their raison detre.

An individual's or group's obsessive love for power is widely prevalent. So, when there is even a remote possibility of losing grip over it, the wielder of power feels threatened. This is exactly what had happened when Lal Bahadur Shastri, the then Prime Minister of India, expressed his intention to Kurien thus,

" The Government of India will give you a blank cheque, it will create any body, any structure you want, provided you will head it. Please replicate Anand – throughout India … whatever you need for it, the Government will provide" (p.100).

On the basis of this proposal it was decided to establish the National Dairy Development Board (NDDB). However, it met with stiff resistance as the bureaucrats belonging to the Ministry of Food and Agriculture felt that this proposal was squarely unfair and an insult to them. (pp.100-102) He therefore confronted them. Later, Kurien probably hinted at this group of bureaucrats when he observed,

" … it was power that we exercised prudently over those who tried to expand our country's imports unnecessarily; … by their corrupt practices (they) held the country back from true development." (p.129)

Nowadays the phrase 'holistic approach' is in wide circulation. However, what it means to be holistic is not often well-understood. The success of Operation Flood, which had ushered in the White Revolution in India, may throw some light in this direction. When the idea of Operation Flood was floated, it met with criticism from certain quarters who questioned its feasibility. Kurien realized that in part this was honest criticism because India could never afford to provide one acre of green grass to each cow or buffalo for it to give 40 litres of milk each day (p.139). This prompted him and his team of researchers to research on feed, animal health and animal nutrition. Such an integral approach enabled them to ensure, " ... that our milk production should come from fodder and feed which man could not eat, ... (and which) was produced in the process of producing food for human beings" (p.139). Thus, it was proved to the detractors that the NDDB was formed, not for dairy development through milk production only, but also through proper care of allied aspects like animal husbandry, feed, fodder etc.

It is not uncommon for autobiographies to be affected by self-projection, even egotism, in varying degrees. One of the frequently used words in *I Too Had A Dream* is 'pride'. No doubt the book is a standing proof of how one can be unflinching in matters of ethics, unrelenting in the cause of the farmers, unbending in dealing with obstructive bureaucrats, and unremitting in love for the nation. Yet, in his claim to be a non-believer e.g. his dismissal of the faultless accuracy of the *jyotishi's* predictions about his glorious career, while recounting so many illuminating career episodes, one looks in vain for the gentle touch of humility. Even the letter (Prologue) to his grandson carries the flavour of self-glorification (e.g. the award of Padma Vibhusan), bordering on pride.

Acharya (Sir) Prafulla Chandra Ray, a DSc from Edinburgh, had been the pioneering author of *Hindu Chemistry*, and the father of indigenous Indian chemical and pharmaceutical industry. His autobiography (1932) contains the following testament:

"Whatever field I have ploughed I have ploughed as an humble instrument in the hands of Providence. My failures are my own ... But my successes, if any, are to be attributed to the guidance of the All-knowing who chose me to be His humble instrument."

PC Ray did believe in the occult (which means invisible, yet real), the spiritual, the Divine wholeheartedly. And he must also have battled against odds no less tough than Dr. Kurien did – especially in pre-independent India ruled by the British. The following words, as an interesting contrast, are reported to have been uttered by Jawaharlal Nehru about the author:

' ...Jawaharlal Nehru turned to me, embraced me and said, " Kurien, I'm so glad that our country has people like you – people who will go ahead and achieve even that which seems unachievable' (p.53).

Similar references to Presidents, other Prime Ministers, Chief Ministers etc. are also frequent. And the book seems to mention no 'failures' at all.

The preface of M.K. Gandhi's *Autobiography* (1925) also reflects his honest reservations about adopting the western custom of self-narration. He too had been an openly believing man, and used to feel quite uncomfortable about being called 'Mahatma'. The mystic, yet socially engaged Rabindranath Tagore's *Jeevansmriti* (1912) also abounds with the utterly simple truths and facts of his life till the age of 51. The Nobel Prize was still a couple of years away. Confrontations and accolades, battles and victories – all were left to others to discover and write.

Infact, initially he was angry with a renowned publisher for even suggesting to him to write about his own life. And he too had lived till eighty years.

The instances of Ray, Gandhi and Tagore show that it is perhaps safer to leave the task of recounting and evaluating a great man's life and achievements by independent biographers. The autobiographies by this sacred trio of pre-independence India, through their choice of themes and style of expression, constitute an object lesson in the art of writing without much intrusion of the self.

As for the IRMA events of 2005, the reviewers remember once more the pristine principle of *vanaprastha* (not to be taken literally). The far-sighted and high-sighted *rishis* of Bharatvarsha understood human character far more holistically than modern intellect can. After all they were holy, so holistic. One of their modern-day representatives, Swami Vivekananda, had spoken these words to an elite Los Angeles audience in 1900:

"The bee came to sip the honey, but its feet stuck to the honey pot and it could not get away. Again and again we are finding ourselves in that state … Work, constantly work; but be not attached, be not caught. Reserve unto yourself the power of detaching yourself from everything, however beloved, however much the soul might yearn for it, however great the pangs of misery you feel if you were going to leave it …'

Verse X.41 of the *Bhagawad Gita (Vibhuti Yoga)* pronounces the following conclusive holistic, and sacred law for all men / women of action:

'Every such being as is glorious, brilliant and powerful know that, to be a part manifestation of My Glory.'

The problem is the inability and disinclination of the secular, non-believing ego to cultivate this disposition. Sci-tech victories of mankind have considerably inflated its ego which has cut loose from all sense of springing from the One Ultimate Source. And one of the common results of such magnified I-ness is our pronounced tendency towards narcissism. That is why the *Gita* has warned us repeatedly about this danger lurking round the corner. For instance, earlier in verse III.27 the secular Arjun has been warned by the sacred Krishna:

'The fool, whose mind is deluded by egoism thinks " I am the doer".'

Sri Aurobindo has captured this very truth in the aphorism:

'Do not try to possess the Power that should possess you.'

The observations in this section of the review do not detract an ounce from our unequivocal admiration for Dr. Kurien. In fact, it is only because of such genuine feeling that this thought kept occuring to us again and again: but for this particular streak of image-creation, we would have loved to hold Dr. Kurien as a *rajarshi* leader. JRD Tata and RK Talwar readily come to mind as very recent examples of the latter.

Friedman, Thomas, (2005), *The World is Flat*, Penguin Books (Indian Reprint), London, Price: £. 8.50*

Reviewer: Rajeev Roy[1]

'The World is Flat' is about how the global playing field has been leveled. Friedman has a very flexible idea of what constitutes the flatness of the world. He has included new developments in technology or business practice that can be described as breaking down barriers or connecting people.

While Friedman, lately, is best known for his columns about the Bush presidency and the Iraq War, in this book he finds himself speaking in an almost exclusively optimistic manner about the new ways the world is becoming connected. The author observes that globalization used to be primarily driven by the west but now it is going to be driven by groups of individuals from every corner of the world. He seems to be greatly enthusiastic of the way India and China have taken to the new world. He does not dwell too much on similarly exciting initiatives in other parts of the developing world. This book primarily talks about the new relationship between the West and the emerging economies of the East - a relationship chiefly characterized by offshoring and outsourcing.

This book certainly doesn't stop at that, but also explores other phenomenon revolutionizing the way business is done the world over. He has chapters devoted to subjects as diverse as the new efficient supply chains on the one hand and opensource software, on the other.

The ideas in this book gain credence as they are reflected in the opinions and views expressed by many CEOs and presidents of major international companies. The book is replete with statements from Bill Gates, Nandan Nilekani, Kenichi Ohmae and others.

He has looked at outsourcing in detail. He has talked to stalwarts of the industry like Jerry Rao and has also found time to involve himself in the day-to-day operations of a small call centre. He paints a very realistic picture of the call centre floor or of a voice training session. He has interacted not only with workers in call centres but also with accountants who know US tax regulations, executive assistants who research and prepare PowerPoint presentations, software designers, and aircraft engineers – all. While discussing some issues he has

* Received January 27, 2006.

1. Assistant Professor, Xavier Institute of Management, Bhubaneswar, e-mail: rajeev@ximb.ac.in.

lumped the Indian software industry with the ITES sector.

He has appreciated the threat of the West losing more and more jobs but has pointed out the need for western society to adapt quickly and acquire new competencies. He fails to address the concerns regarding invasion of privacy and data security. Nor does he talk about complains regarding falling levels of service.

If he fails to convey the impression that outsourcing is an Indian phenomenon, he certainly manages to convey the impression that offshoring is a Chinese phenomenon. He talks about how manufacturing is migrating to China from the US, Mexico and even Egypt. He has quoted examples of how statues of the 'Virgin of Guadalupe', the national symbol and patron saint of Mexico, are now being made in China. He has also described the impact of modern Chinese made lamps replacing traditional religious lamps in Egypt, another country seemingly with low cost of labour. He has also pointed out that the other advantage of setting up a manufacturing base in China is access to the large Chinese market.

The book emphasizes the importance of technology in bringing about this new era. Broadband connectivity, Wi–Fi networks, search engines like Google, opensource software, all have been given due acknowledgement for having speeded up the process of intense globalization. He has been very insightful in describing the growth and proliferation of opensource software like Apache and also open content, community-built sites like Wikipedia.

The book also thanks two recent technology driven economic disasters for their facilitating role. The dot com bubble drew in a lot of investment into IT infrastructure and the dot com bust freed up the infrastructure for other uses. The Y2K scare introduced the western world to the skills of the Indian IT professional and in the period thereafter when the Western companies felt the need to call upon the professional services of their new Indian friends.

The investment of millions of dollars in technology leading to the establishment of broadband connectivity around the world, undersea cables and other creative ideas have resulted, he says, in the joining of such cities as Boston, Beijing and Bangalore in remote development. The result, continues Friedman, is that "intellectual capital can be delivered anywhere," thus providing an exciting sense of freedom in the work we do.

The book gives a detailed account of specific business processes in leading global companies like Walmart and UPS, to drive home the point of revolutionary changes taking place around us. There is a full chapter devoted to the centralized, efficient supply chain of Walmart. Then he talks of how the service offerings of UPS allow smaller firms access processes allowing them advantages previously available only to large firms.

He has not failed to mention the breaking down of the Berlin Wall which led to a sequence of events which enabled the whole of Eastern Europe to participate in the new global economy.

Some of the key points the author is trying to convey about the new era of globalization:

- Globalisation empowers individuals and groups of individuals, even more than countries.
- Globalisation helps the small firms as much as the big firms, perhaps even more.
- Globalisation is not bad for the West. It is good for the world.

Toward the end of the book Friedman acknowledges that most of the global population does not live in a "flat world" — and that many have no desire to do so. He attributes this to cultural variables. He argues that intrinsically open cultures will blossom in the 21st century, while closed cultures will wither. He refers to economist David Landes, who argues that in the Arab Muslim world, "cultural attitudes have in many ways become a barrier to development." Friedman refers to the Arab-Muslim world as the "unflat world" and notes its feelings of frustration, insecurity and illness.

The book also talks at length about how these new forces of globalization are being utilized by terrorist networks. It talks of how Al Qaeda and other terror outfits have used the same technology driven, connected, 'flat' world to collect funds, recruit, disseminate information and plan attacks. Also, the book observes the Western world's knee jerk reaction of setting up protective barriers which also work towards negating all the positives of globalization. That makes it even more important that we have books out there explaining the many ways that globalization makes the world a better place to live.

In the final chapters he acknowledges that most Indians and Chinese still live in poverty. He sees for himself that a lot has to be done to include the larger sections of the society in this new economy and to bring home the benefits of globalization to the disadvantaged in India and China.

This book does not dwell on the growing concerns regarding intellectual property rights. The growing threat to the global environment is also not discussed in detail nor does he deal with the energy needs of this new 'flat' world. Also, Africa does not find too much of a mention in Friedman's vision of a global future.

The tone of this book is conversational and there are many anecdotes. That makes the 468 page book pleasant to read to a varied audience. In spite of the prevalence of technical jargon, Friedman is quite good at making his points understandable. Martin Wolf's 'Why Globalization Works', on the other hand, has a very business like approach to the same subject.

Thomas Friedman has won the Pulitzer Prize thrice. He is currently a columnist with the New York Times. He has been called “the most important columnist in America today”. He is best known as an advocate of globalisation, having come to prominence through his book The Lexus and the Olive Tree (1999), in which he argued that the new mobility of ideas and capital (represented by the Lexus) could strengthen, rather than threaten, local identities (the olive tree). As one would expect from the author of From Beirut to Jerusalem, his treatment of 9/11 and Middle Eastern issues is insightful and deeply informed.

In the end, ‘The World is Flat’ is a book about the changes taking place around us and how individuals and societies must adapt to keep up with the changes.

Rumbaugh, James; Jacobson, Ivar and Booch, Grady; (2005),
The Unified Modeling Language Reference Manual,
Second Edition; Addison Wesley, ISBN 0-32-24562-8;719 pages, Price $64.99.*

Reviewer: H Misra[1]

One of the best and recent contributions to the software engineering discipline is the unified modified language (UML). Seamless unification among three disjoint methods i.e. "Booch method", "Object Modeling Techniques" and "Object Oriented Software Engineering" is fast evolving to a standard. The UML, though a language, is neither a process nor a method, but is the link between these two with strong documentations. Therefore, this language is being viewed as an invaluable support to the formal analysis and design methods, and is independent of the programming language used for development as well as implementation. The strength of the UML lies in its use for large projects, eliciting and formalizing user requirements at the organizational level. This provides scalability and a better life cycle to the projects. Modeling user requirements, organization's dynamic requirements are measure setback for any software engineering process model and the UML may provide a platform to capture this behavior as it evolves in near future!

This book is a reference manual and therefore, its strength is the dictionary provided for understanding the notations and its use. All the methods discussed are precise and focused. Since the language is evolving, this reference guide will certainly change in its dictionary and therefore, this book may have a short life cycle. Besides, the UML defines a number of models such as use case diagram, conceptual diagram, activity diagram and deployment diagram. Modeling the real world is a risky proposition and efficiency in implementing these models lies with better abstraction. In this book however, the examples provided to explain these models are very simple to understand, but are not truly representative of complex world in terms of relationships and interfaces. Choosing a complex example with progressive solutions specific to the language and models along with the use of dictionary could have provided a better understanding and provided a larger canvas for the reader.

As expected of a reference manual, the book exposes the reader to the basic concepts of the UML, its evolution, while providing an overview of its utility and scope in applying its strengths for a software development process. It also

* Received December 10, 2005

1. Associate Professor, Institute of Rural Management Anand, e-mail:hkmishra@irma.ac.in

outlines the concept behind such a unified modeling environment to handle software projects. Authors here suggest that modeling is a complex phenomenon and UML is no exception. It is therefore, wise to make specific use of the UML to meet a desired result, the authors add. The concept of UML, as authors suggest, is based on static structure, dynamic behavior; dealing with modeling application software concepts and mapping through object oriented methodologies. The static behavior can be well organized through UML diagrams leading to a better representation and analyses of the software delivery. The dynamic behavior is well captured by analyzing the objects, their collaboration with other objects andunderstanding the control flows among them. This approach, authors argue, provides a scope for the software project manager to keep control over the deliverables of the project at a higher level.

Adopting a good modeling technique is an important exercise for a software project manager and it is essential that underlying principles behind modeling should be understood properly. This book provides a good scope for the reader to understand these principles in chapter 2.

"The UML is not a programming language, and it does not include a step-by-step development process" authors caution. The UML basically is not intended to be a complete development method and largely discusses the concepts behind. The strength of the book, therefore, is based on elaborating the concept of UML through various views it supports and through expressions the language uses. It also extensively discusses the dictionary of terms used for the UML as a language. The dictionary is well planned and organized for the reader to understand the applicability of each term and is comprehensively supported by examples.

Modeling and documenting the processes in an organization are very complex. The complexity increases as the organization evolves and so is the case with the processes which are exposed to dynamic ambient conditions. Therefore, a software project, which is normally intended to capture the dynamics of a process and reflect through an effective design and engineering, is also complex in nature. Capturing and defining requirements by involving all the actors in the process are also not easy. UML provides a tool to model such complex processes and offers an opportunity to the software project manger as well as the business process owner to collaborate and model the complex process and narrate the possible relationships among the processes before embarking on real development of software. The utility of this evolving language is, therefore, quite strongly realized in the present context of automating business processes.

This reference manual has been grossly updated in its second edition. This edition includes the latest version of UML (UML 2.0). This book is rightly timed and it would be the best used by any reader who is acquainted with object oriented technologies. This book however, will be hard for beginners to appreciate.

XIMB has launched Post Graduate Certificate In Business Management (PGCBM)

XIMB in association with Reliance Web World has launched a unique programme 'Postgraduate Certificate Programme in Business Management (PGCBM)' via virtual classroom. Across the world, management education via Video Conferencing (VC) mode is one of the most sought after educational systems. It not only helps a working executive to simultaneously work and study but it also takes high quality education to a large number of students spread across the country. XIMB has found an ideal partner in Reliance Webworld for providing the VC platform and the VC classrooms spread across India.

This PGCBM Programme provides a live and interactive classroom environment using the power of cutting edge Video conferencing technology. This VC Technology facilitates multipoint interaction between the Professor and the students, as seen in a conventional classroom. Reliance Webworld, the technology leaders in Video conferencing, are providing this cutting edge VC technology as well as the virtual classrooms. Thus, this two-way video VC technology of XIMB overcomes the limitations of one-way video seen otherwise, in various existing programmes running across India.

The programme is available simultaneously across 24 cities in India: Ahmedabad, Bangalore, Bhopal, Bhubaneswar, Chandigarh, Chennai, Cochin, Coimbatore, Cuttack, Delhi, Gurgaon, Hyderabad, Indore, Kolkata, Jaipur, Jamshedpur, Lucknow, Mumbai, Noida, Patna, Pune, Ranchi, Trivandrum and Vishakhapatnam.

The Programme consists of 12 courses:

- Cost & Management Accounting
- Basic Economics for Managers
- Organisational Behaviour
- Quantitative methods for Business Decisions
- Financial Management
- Human Resource Management
- Production & Operations Management
- Marketing Management
- Information Technology for Managers
- Ethical & Legal Environment of Business
- Strategic Issues in Management
- Emerging Business Paradigms

Academic Calendar : The entire programme consists one year duration, having 240 hours of live video conferencing and 60 hours of rigorous on-campus classes at XIMB, spread over one week duration.

Certification : The Institute awards the Post Graduate Certificate Programme in Business Management to students who have successfully completed the entire course work and have successfully completed all academic requirements as mentioned in the Manual of Policies. The Manual of Policies would be provided to those students who are admitted to the programme.

On campus stay at XIMB : The PGCBM programme includes a seven-day on-campus stay at XIMB. During this one-week, the students would be exposed to 60 hours of rigorous real-time classroom interaction by the renowned XIMB faculty. The students would have access to world-class facilities of XIMB.

Xavier Institute of Management
Bhubaneswar

Xavier Institute of Management, Bhubaneswar (XIMB) has completed 18 years of purposeful existence, offering management education "with a human face". During this short span of its existence, XIMB has established an identity of its own and a consistent position among the best B-schools in the country. It is known not only for its Post-Graduate Programmes but also for developmental projects. The institute owes its origin to a "Social Contract" between the Government of Orissa and the OJS (Orissa Jesuit Society). The Management of the institute is in the hands of a Board of Governors, consisting of Jesuit Fathers, senior representatives of the Government of India and Orissa State Government, eminent industrialists and educationists.

The institute offers three post graduate programmes, a certificate programme and one doctoral programme (known as Fellow Programme). These are :

- PGP : Two-Year Full-Time Post-Graduate Programme in Business Management (Residential);
- PGPRM : Two-Year Full-Time Post-Graduate Programme in Rural Management (Residential);
- Ex-PGP : Three-Year Part-Time Post-Graduate Programme in Business Management for Working Executives;
- PGCBM : One year Post-Graduate Certificate Programme in Business Management using Video Conferencing Technology.
- FPM : Fellow Programme in Management (Residential).

The two-yearfull-time course leading up to the Post-Graduate Diploma in Business Management (PGDBM) of the institute is approved by the All India Council for Technical Education (AICTE), Government of India. Since XIMB is an autonomous institute not affiliated to any university, it does not grant degrees.

The full-time PGDBM of XIMB is recognised by the Association of Indian Universities (AIU) as equivalent to an MBA degree from an Indian University.

National Academic Recognition Information Centre for the United Kingdom (UK NARIC) recognises XIMB's PGDBM as comparable to British Master's degree standard.

XIMB has a tie-up with the University of Antwerp, Belgium for an exchange of faculty and professionals.

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THE CREST OF THE XIMB

The lamp on the book stands for the spread of knowledge, the chimney for industrial development, the two plants for rural development and the IHS logo for the Jesuit Society which manages the institute.

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Contents

BOOK REVIEW S

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VILAKSHAN

XIMB JOURNAL OF MANAGEMENT

Volume III Issue No. 1 March, 2006

Articles

Perspective

Management Case

Book Review

Xavier Institute of Management
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XIMB JOURNAL OF MANAGEMENT
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Issue No. 1

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For inquiries, subscriptions and contributions, please write to

Editor,
VILAKSHAN
XIMB Journal of Management
Xavier Institute of Management
Xavier Square, Bhubaneswar - 751 013, India
Ph. : 91 674 2300007 (20 lines), Extn. : 293, Fax : 91 674 2300995
E-mail : brajaraj@ximb.ac.in

GUIDELINES FOR CONTRIBUTORS

VILAKSHAN is a bi-annual journal. The papers published in the journal are generally peer-reviewed. It publishes original research-based articles, perspectives, cases on topics of current concern and book reviews in all areas of Management. A general guideline for contributors is listed below.

1. Manuscripts should be of approximately 10,000 words (20 to 40 A-4 size pages, typed in double space). Manuscripts should be submitted along with a soft copy or by e-mail with the cover page bearing only the title of the paper and author's names, designations, official address, e-mail and phone / fax numbers.
2. Article should accompany an abstract of about 150 words.
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   Table-I about here

   If the tables and figures are imported into the text from Excel, Powerpoint etc., the original files from those software should also be attached.
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6. Follow British spellings throughout (Programme, not program)
7. Use of numerals: One to twelve in words, thirteen and above in figures, unless the reference is to percentages (5 percent), distance (5 km), or age (10 years old). Use 1990s and 19th century.
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