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THE EFFECT OF TRUST ON PRIVATE LABEL PURCHASE

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Abstract

The authors conducted in-store research by interviewing customers in a supermarket to determine which factors predict the extent to which a store is trusted and sells its private label products effectively. The authors regressed the number of private label purchases on store cleanliness and trust and found that both were significant predictors of private label purchases. In addition, perceived availability of employee assistance and total amount spent per shopping trip predicted trust.

Keywords: food marketing, private label, promotion, service, trust

Globalization and private label brands

The globalization of consumer brands has recently gained tremendous strength. Today, global brands are ubiquitous in many countries. Procter and Gamble, for example, is now setting sights on rural China's 700 million people (Roberts, 2007), and Wal-Mart has signed an agreement with Bharti to assist in the development of the retail industry with 100 new stores throughout India (Management Ventures, 2007a).

Just as the world's largest branded manufacturers have been appearing globally, the names of the largest retailers have emerged across the world as well. In fact, the world's largest retailer, Wal-Mart, has 2,630 stores in thirteen different countries outside the United States of America (Planet Retail, 2007). Other retailers such as Tesco (England), Casino (French), Auchen (German), Delhaize (Belgium), and Ahold (Dutch) plan to continue their global expansion.

The increase in global brand presence is matched by a significant development of private label brands. Private label brands are retailer-owned brands sold only in that specific retailer's store. Private label brands originated as strictly low-price products, and they were synonymous with generic brands or "cheap" products with labels which were often black, white, and unattractive. Today, private label brands have the same quality packaging as their global brand counterparts, and they promise the same quality at a lower price point.

Private label perception has shifted globally from "low price" to "high value." Private label sales comprise 45 percent of sales in Swiss retailers, 30 percent of sales in German retailers, and 28 percent of sales in United Kingdom retailers. In lesser developed EU countries, the percentage of private label sales is lower. For example, in the Czech Republic and Croatia, private label sales equal seven percent and two percent of sales, respectively. (PLMA/ACNeilsen, 2005)

In terms of growth, private label has outpaced manufacturer brands in 60 of 80 categories (Management Ventures 2007b), and volume levels are even higher than sales levels. According to the Private Label Manufacturers Association, in 2004, private label sales by volume equaled 48 percent in the United Kingdom, 41 percent in Belgium, 38 percent in Germany, 31 percent in

Spain, 30 percent in France, and about 25 percent in the Nordic countries (PLMA/AC Nielsen, 2005). Private label products represent about 17 percent of sales by volume in the United States of America (Private Label Products, 2005).

Objective and hypothesis

The ubiquity of private label and the impact it will have on global brand diffusion will become increasingly relevant. Understanding the relationship between consumer trust in a retailer and sales of private label brands is essential as both retailers and private label brands become more global. In this paper, the authors test the hypothesis that consumer trust in a retailer will have a positive effect on the perception of its private label brands.

Background

Private label products have been part of the United States' food retail landscape for decades, although their use in modern supermarkets is a recent development (Prendergast and Marr, 1995)[1]. Researchers previously believed that private label items should not compete on any other dimension besides price, as consumers seeking the lowest price would be willing to trade off perceived quality for lower price (Halstead and Ward, 1995). In the last several years, private label sales have grown at two times the rate of branded products, becoming over a one-billion dollar business (AC Nielsen Private Label Trends, 2004). In addition, private label now successfully competes with national brands on qualities beyond price.

Nielsen's Homescan Panel[2] estimates that private label products have nearly 100 percent household penetration with the breadth of products being 20 or more (across all shopping outlets). One reason for this recent success is that private label manufacturers and their retail partners seem to be dedicating more resources to advertising, merchandising, and promotion, and worrying less about having the lowest-priced product on the shelf. Additionally, retailers (e.g., Whole Foods, The Fresh Market, and Trader Joe's)[3] are encouraging consumers to shop exclusively at their store and are promoting customer loyalty and retention by creating an emotional bond between the shopping experience and the retailer and by offering exclusive private label products. In each case, consumers are provided clear reasons to shop in each of the aforementioned stores. This shift in focus toward building trust in a retailer's brand name is vital for effectively promoting and selling private label products.

These food retailers have found that consumers want quality and value as well as the lowest price. Research reveals that those supermarkets which compete on multiple levels (i.e., beyond price) are usually more successful (Richardson, 1997). Although stores may enjoy the revenue produced from stocking national brands on their shelves via various payments such as slotting fees (Stanton and Herbst, 2006), increased effective merchandising of private-label products helps supermarkets build positive brand recognition while increasing the volume of the higher-margin private label products. Additionally, retailers have used multi-level or tiered private label products to add to the quality dimension of the stores and visa versa. For example, Safeway offers multiple tiers of private label (e.g., premium, base, organic, and ethnic) while Wegman's offers various tiers including a healthy line as well as Asian and Italian lines.

Previously, private label products were often low-involvement purchases, such as facial tissues, in which less "physical, social, or financial risk" was involved (Prendergast and Marr, 1995). They were often described as generic products, with little or no association to the store brand or store identity. Today, private label product lines have expanded as they have become more well-known, and they are not exclusive to the United States of America. In addition, the supermarket channel is not the only one using private label. Mass drug and mass merchandisers are also stocking large quantities of private label brands in the United States of America.

Food retailers have often shied away from competing against national brands on attributes such as price. In some taste tests, national brands are given higher ratings than private label brands, even when there is no difference between the actual product tested (Prendergast and Marr, 1995). So, psychological factors play a role when individuals assess brands. Additionally, consumers who do not purchase private label brands typically rely on price (associating higher price with higher quality), packaging, and advertising to determine the quality of a product (Dick, Jain, and Richardson,

1997). This leads them often to purchase the more familiar national brands.

Store aesthetics generally have positive effects on brand image. An environment that strives for excellence in layout, lighting, color, and cleanliness can influence the mood of the shopper and the attitude they have toward the store (Dick and Richardson, 1996). Studies have shown that consumers judge the brands of stores with good aesthetics superior to those with poor aesthetics (Dick and Richardson, 1996). Therefore, through stimulus generalization, the store's brand equity is likely to be transferred to store brands.

In addition, recent research indicates that consumers are changing their views on private label purchases. Private label is becoming a way to leverage store loyalty. Research has revealed that those consumers who buy more private label products have increased store loyalty (i.e., they shop at the store more frequently) (Private Label Products, 2005). The key to leveraging private label products is to make private label purchases part of the store experience. Research suggests that "supermarkets can offer their shoppers a feeling of enjoyment, hedonism, social recognition, and health" (DeWulf et al., 2005).

In addition, the demographic for the private label shopper has changed. While many are still price-conscious, they will not compromise on quality, convenient location, selection, and good customer service (Private Label Products, 2005). Also, the prevalence of affluent private label shoppers is increasing, especially in premium supermarkets (Private Label Products, 2005). Supermarkets which are perceived to have a strong image and brand equity are the ones which can best capitalize on quality private label items (Baltas, 1997).

As previously mentioned, supermarkets have long based their private label promotion solely on price, and little attention has been given to other marketing mix elements. The AC Nielsen Private Label Trends report (2004) has shown that private label sales are not related to many traditional methods of driving in-store sales. For example, there was no significant correlation between private label share and other variables such as price differential ($r = -.18$), promotional activity for private label ($r = .23$), and number of private brands for sale ($r = -.09$) (AC Nielsen Private Label Trends, 2004). However, there was a strong correlation between private label share and loyalty ($r = .58$) (without Aldi and Sav-A-Lot)[4] (AC Nielsen Private Label Trends, 2004). Thus, it appears that at the store-level, the strongest relationship is between private label sales and consumer loyalty.

Building equity for the store can involve various marketing techniques such as raising awareness through "in-store sampling, attractive signage, advertising, and direct mail," which can inform consumers of the benefits of building trust in the brands and therefore trust in the store's private labels (Private Label Products, 2005). Therefore, management can enhance the perception of the store image in terms of store atmosphere, convenience, and price/value dimensions (Vahie and Paswan, 2006).

Method

In order to replicate and extend the findings on factors related to private label sales, the authors intercepted supermarket shoppers at the end of their shopping trip and asked a series of questions. For their participation in the interview, the authors offered consumers a card to be redeemed for a free cup of coffee at an in-store coffee bar.

The authors asked shoppers how many days per week they went to the supermarket, and how many private label items they purchased each time they visited the store. In addition, the authors recorded the total amount spent on that specific visit to the supermarket. The authors also asked consumers to indicate, on a 7-point scale from "1" (poor) to "7" (excellent), the extent to which the store had the following: price competitiveness, customer service, store cleanliness, quality of products, product freshness, and the ease with which the store could be shopped. Lastly, consumers indicated, on a 7-point scale from "1" (not at all) to "7" (very much) how much they trusted the store's private label products.

Results

General Information

The demographics of the sample are summarized below. 54 percent and 46 percent of the shoppers surveyed were female and male, respectively. In addition, 83 percent of shoppers were Caucasian. Other ethnic subgroups (African-American,

Asian, and Hispanic) did not warrant independent analyses as their representation was very low.

Price competitiveness, quality of products, product freshness, and the ease with which the store could be shopped did not predict the number of private label items purchased. Customers seemed only mildly receptive to private label products. In order to determine how private label purchases compared to customers' trust of the supermarket, the authors conducted a t-test pairing shoppers' frequency of private label purchases with trust, $t(72) = -8.07$, $p < .001$. In addition, two other t-tests paired store cleanliness with the frequency of private label purchases, $t(80) = -18.91$, $p < .001$, and quality of products with the frequency of private label items purchased $t(80) = -17.61$, $p < .001$.

In order to determine whether the number of private label items purchased was related to visual store conditions such as cleanliness and consumer trust, the authors regressed the number of private label items purchased on the number of days per week spent shopping at the store, store cleanliness, and trust of the store. Days per week shopping at the store ($B = .39$, $t(66) = 3.06$, $p < .01$), store cleanliness ($B = .57$, $t(66) = 2.25$, $p < .05$), and trust of the store, ($B = .45$, $t(66) = 3.52$, $p < .01$) were all significant predictors of the number of private label items purchased.

The authors regressed trust on the total amount spent on average and perception of employees' assistance. Both the total amount spent on average ($B = -.01$, $t(70) = -2.12$ $p < .05$) and the perception of employees' assistance ($B = .28$, $t(70) = 3.30$ $p < .01$) were significant predictors of customers' trust of the store.

An alternative hypothesis could be that private label sales related to the power of the channel as opposed to the trust of an individual chain or brand name. To test this hypothesis, the authors examined the correlation between the level of grocery concentration for fifteen different countries (including the United States) and the percentage of private label sales (i.e., unit sales). The correlation, based on data provided by AC Nielsen at the Private Label Manufacturers Association Meeting (2004), was .17 (R-square = .029), and the R-square was not significant. Thus, concentration did not explain the level of private label sales.

Conclusion and Managerial Implications

The analysis on the amount of private label products purchased revealed that days per week shopping at the store, store cleanliness, and trust were significant predictors of the number of private label items purchased. In addition, perceived availability of employee assistance and total amount spent on average predicted trust.

The data support the notion that the best use of advertising and promotional dollars is to create trust among the consumer, the store, and the private label products the store offers. Building trust is making certain that products contain attributes which consumers value greatly. Thus, the need to promote private label products in a way that leaves consumers knowing that they will purchase a consistently satisfying product is paramount. This way, consumers will become more apt to trust the store and, more importantly, the store's own brands.

From a globalization perspective, as global retailers develop a market and build trust among consumers, they will likely build their own private label sales. These more profitable sales will permit more store development and greater diffusion in the market. Ultimately, this could cause global retailers' market share to grow exponentially hurting many smaller global retailers.

Limitations

When using self-report data, one must consider the possibility of the social desirability bias. It is possible that participants rated the store higher on some attributes than they actually believed. In addition, it would have been helpful to have received actual sales figures for private label purchases from the stores. Perhaps some consumers are confused and do not realize that they are purchasing what are referred to as private label products, or perhaps they do not remember how often they purchase private label items and how many they buy. Future research will be needed to verify if other promotional mixes (e.g., in-store sampling) are actually more effective in increasing the demand and purchase for private label products.

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Endnotes

1 Private label is often referred to by a variety of different names, but it generally refers to the same concept. House brands, store brands, controlled label, and own label all refer to a brand of product available exclusively at that specific retailer. The retailer may or may not actually produce the product. Controlled labels and generics are slightly different. Controlled labels (e.g., President's Choice) are third-party manufacturers which only sell that brand to one retailer in a market. Generics, far less common today than in the past, are not really a "brand" but rather a very low-price choice which usually does not have the retailer's name on it.

2 ACNielsen HomescanTM is a panel that collects consumer package goods information on purchase in addition to non-UPC coded perishable products. ACNielsen HomescanTM is one of the global leaders in consumer purchase data.

3 Trader Joe's, Fresh Market and Whole Foods are specialty grocery stores in the United States of America which have a unique position to make "fresh" and "natural" major points of differentiation. Trader Joe's is owned by the Albrecht family in Germany, and Whole Foods has started international expansion into England.

4 The authors excluded these two retailers because almost all of their sales are in either traditional private or lesser known brands sold only at those retailers.

CISCOM – TRANSFORMING AN UGLY DUCKLING

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MANAGEMENT DEVELOPMENT INSTITUTE, INDIA

August 1, 2008. Its 9:00 a.m. Monday morning, a white ambassador comes and parks itself in front of the office building of CISCOM. The driver gets down and swiftly opens the rear gate of the car from which emerges Mr. R K Goyal, Director of CISCOM. He crosses the reception area and takes the short flight of steps towards the left hand side of the wing, which leads to his office. As soon as he is seated, he calls for Dr. Padam Das, Editor Industrial Research Journal (IRJ), an enthusiastic Scientist and confidante of Mr. Goyal; and tells him that he wishes to have a business plan 2012 prepared for CISCOM. "How far have we come from 2003 and where do we want to be after 5 years? Can you collect information on all those aspects you would like to cover in this plan and also suggest who all shall be willing to participate in this exercise? Let's meet after a couple of days and discuss the progress." Dr. Padam Das leaves the room and Mr. Goyal assumes a very concerned expression. He has completed 5 years as Director of CISCOM today. With just one year left for his tenure to complete, has he achieved the objectives that he had defined for CISCOM? Though it had been a tough journey for him, the only question facing him is, "Will CISCOM be able to sustain itself? What else can I do?"

Journey from Bureau of Information and Publication (BIP) to CISCOM

The western science started to make its appearance on the Indian scene when surveys were organized by British East India Company, to serve the needs and requirements of the colonial Government. The government established various services to cover the fields of medicine, surveys, administration, military etc., to either increase the revenue or meet the requirements of the imperial power.

In 1940, the Board of Scientific and Industrial Research (BSIR) was established under which a number of research committees were set up for research on vegetable oils, fertilizers, drugs, plastics, sulphur and scientific instruments. Besides these, exploratory committees for graphite carbon electrode, molasses, glass and refractories, vegetable dyes, fuel research and cellulose research were also formed. The functions of these committees were to organize and oversee the various Government approved schemes in the field of research with which each was concerned. The founders of the BSIR were also keen on promoting industrial development in India, so they piloted a resolution suggesting the creation of an industrial Research Fund with an annual grant of Rs. 10 lakhs for a period of 5 years. The result was the founding in September 1942 of the National Council for Research on Science and Industry (NCRSI) as an autonomous body registered under the Registration of Societies Act XXI of 1860. After independence, with the formation of Ministry of Science and Technology, NCRSI came directly under its control.

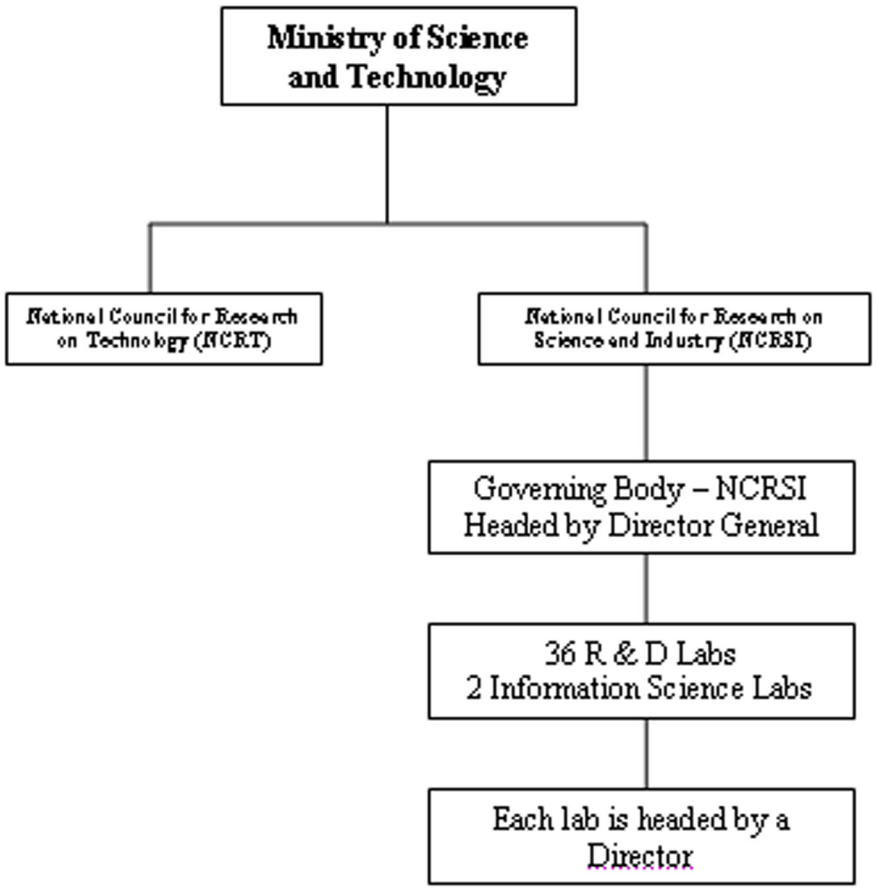
NCRSI currently has 38 laboratories – 36 of which are Research and Development oriented labs and remaining 2 are termed as Information Science labs.

Realizing that information is an essential input for any R&D activity, government of India while finalizing the charter for the National Council for Research on Science and Industry (NCRSI) in 1944, specifically assigned two functions to it:

a. Collection and dissemination of information in regard not only to research but also to industrial matters, and,

b. Publication of scientific papers and journals.

Figure 1- Structure of NCRSI and its Labs



With a view to discharging these functions, NCRSI started two independent units in 1944, namely Dictionary of Indian Raw Materials and Economic Products and the Industrial Research Journal. The former was established to collect and publish information on raw materials, and theirs products in India; while the latter published articles on scientific activity of India. These two units were merged in 1951 to from the Bureau of Information and Publication (BIP). NCRSI increased the scope of BIP and allotted the following activities to it -

1. Dissemination of Scientific and Technical information to community – through various scientific journals.
2. Compilation of plant, animal and mineral wealth of the country under the encyclopedia titled the 'Prosperous India'.
3. Popularization of science among the masses through science magazines – Vigyan ki Duniya and Science ki Duniya (published in Hindi and Urdu respectively).
4. Providing Technical information service to all NCRSI labs.
5. Training services by conducting course in library science.
6. Production and consulting services.
7. Administration and infrastructure facilities.

In 1965, the Industrial Research Journal was split into five independent journals, namely –Journal of Chemistry, Journal of Pure & Applied Physics, Journal of Technology, journal of Experimental Biology and Industrial Research Journal, in order to

cater to the growing demand for specialized journals in various fields of science and technology.

In 1978, BIP started its in house print production services division for printing journals and magazines. Till then all the printing was being outsourced to various private printing houses. There was a lag of more than 6months on all the jobs and BIP faced huge problems in terms of monitoring quality and coordination. BIP used to break all the printing work into smaller activities for example, typesetting, proof reading, printing and dispatch and outsourced it to various contractors. Thus the job of the editor of each journal was merely to coordinate among various parties and receive articles for publication. Coordination among various parties started getting tougher as the number of publications increased and editors felt that they were losing time doing non-essential work.

In 1998, the name of BIP was changed to Centre for Scientific Communication (CSC), since the earlier name did not portray the activities it was mainly engaged in.

Crises that shook CSC

During the tenure of Dr. G P Gokhale (the first designated director of CSC); Dr. Kumar had joined as a Scientist at CSC in 1996. By 1998, Dr. Kumar known to be an active participant of organizational politics became a leading office bearer of Officer Welfare Association (OWA), which is registered under the Trade Union Act. Each lab of NCRSI has a unit of OWA and all Scientists are members of their unit of OWA respectively.

All units of OWA are also networked throughout the country in such a strong manner that it enables office bearers to lay their hands on all kinds of information related to even other labs.

Meanwhile, Dr. Kumar had found 2 accomplices – Dr. Ganesh (Scientist and the then secretary of CSC unit of OWA and Mr. K Paul (technical Scientist). All 3 of them started gathering information on irregularities being practiced throughout the labs of NCRSI. They managed to compile a list of 200 odd cases against the directors of all labs of NCRSI; pertaining to purchase, appointments, favoritism, nepotism and corruption. Then they started instigating all the scientific staff of CSC to start an agitation against the director – Dr. Gokhale. Though the cases pertained to other labs as well but they decided to commence agitation from CSC and later on spread it to other labs thus aiming to bring NCRSI to a standstill. Almost 90% of staff of CSC had joined this agitation and the only people left opposing it were the Director and the representatives of NCRSI (finance Officer, Controller and Administrative Staff).

They demanded that Dr. Gokhale should immediately resign, to which NCRSI flatly refused. They locked the gates of the institute and no one was allowed to enter. There was a deadlock. Institute remained closed for about 3 months. Finally, these 3 persons were suspended by NCRSI. Subsequently the then minister of Science and Technology – Vice President of NCRSI Dr. Tala, called a meeting in which DG NCRSI was present (as a management representative) and these 3 office bearers were asked to give their charter of demands. A one man fact finding committee was also instituted to enquire the alleged irregularities; these persons were instructed not to participate in any other agitation and departmental enquiries were ordered against them. NCRSI also passed an order for the institute to remain open but the demand to remove Dr. Gokhale was partially accepted. Dr. Gokhale ceased to be the director of CSC and was transferred to another lab of NCRSI at Pune. He stayed there for 2 years without any particular portfolio; though he kept drawing salary as a director. From 1998 to 2003 there was no permanent director at CSC and the director of CLP (Central Lab for Physics) was given an additional charge of CSC. In August 2003, Mr. R K Goyal joined as the director.

However, during the period of 1998 – 2003, the 3 accused kept on filing a number of cases against CSC -Dr. Kumar had filed 19 cases, Dr. Ganesh had filed 9 cases and Mr. Paul had filed 9 cases respectively. They were suspended from CSC in 2000.

As expressed by many Scientists the period between 1998 and 2003 was very stressful. A lot of informal groups cropped up and there was a lack of trust and discord among all employees. “So much so that we did not know was a friend and who a foe…” remarked a senior Scientist. Since there was no full time director, the departmental heads received no clear guidelines or directions, they did not coordinate, people would invariably arrive late for work, because of which the lag grew and the productivity suffered. All the promotions were held

up and a sense of dissatisfaction prevailed among all employees.

Birth of CISCOM - Merger of CSD with CSC

The Centre for Scientific Documentation (CSD) was established in 1955 to provide information support (documentation, information and translation) to the Scientists and researchers of the country at a time when research infrastructure in India was at a nascent stage.

In 1964, Dr. Rajan was appointed as director for a period of 3 years; the first director of CSD. Post his retirement no person was appointed as director despite NCRSI's advertising for the post on a regular basis. According to NCRSI, no candidate was found suitable enough to take up the post. The senior-most scientist continued to be in-charge till 1989. In 1989, Dr. Agnihotri was appointed director for a term of 5 years, but his services were terminated after 2 years on grounds of misconduct. Dr. Chaterjee the then senior-most scientist was made acting director till 2003 when CSD got merged with CSC.

Dr. Chaddha says that "CSD was considered to be a weakling organization by NCRSI in the absence of the director. Since there was no one to give proper directions, therefore inspite of having all qualified manpower things went awry. Again in the presence of Dr. Agnihotri, it further weakened. He directed the efforts of staff to activities other than the core activities of scientific documentation, procurement and translation… since top management was weak, our institution got weaker."

During 1989 to 2002, three regional centers of CSD were closed down due to lack of user-base and non-performance. Thus NCRSI was considering the merger for quite some time. The merger was approved in 2003 and thus the newly merged entity – Central Institute for Scientific Communication (CISCOM) came into existence on 30th September 2003. Both the institutes were allowed to function from their respective buildings situated in East and South Delhi respectively.

Mission and Objectives

Till 2003, the mission of CSC had been dissemination of information on Science & Technology to different segments of society by publishing research journals, monographs, encyclopedia, popular science magazines and books.

After the merger, however the major functions that CISCOM identified for itself were as follows:

- To provide formal linkages of communication among scientific community in the form of research journals in different areas of S & T.
- To disseminate S&T information to general public, particularly school students and to inculcate interest in science among them.
- To develop human resource in the field of science communication, library and information science, documentation, and S&T information management systems and services.
- To harness information technology applications in information management with particular references to science communication and modernizing libraries.
- To act as a facilitator in furthering the economic, social, industrial, scientific and commercial development by providing timely access to relevant and accurate information, and
- To collaborate with international institutions and agencies having objectives and goals similar to those of CISCOM.

The mission statement of CISCOM has been formulated in the year 2003, which says –

"To become the prime custodian of all information resources on current and traditional knowledge systems in science and technology in the country, and to promote communication in science to diverse constituents at all levels, using the most appropriate technologies."

"… Mission statement is quite compelling as it helped CISCOM to perceive opportunities in the market and guided us to achieve them. Also, it helped the organization to plan out every activity by setting targets for technology, resources, procurement, and delivery etc." says the head of Print Division.

Mr. Srivastava, head of Sales and Marketing describes the future of CISCOM as, "We have taken various projects in terms of digitalization and this can be extended to any extreme e.g. IT literacy program – every village, panchayat

should implement it and CISCOM can facilitate this. In fact, our Discover Science is such a good magazine that if promoted well can earn the whole budget for NCRSI."

Leadership at CISCOM

From the time of its inception, BIP has been headed by the Chief Editor. Mr. Reddy was the first Chief Editor and was thus heading BIP from 1972 to 1983. However, the designation was changed to Editor-in-Chief in the year 1983 and finally in 1989, the term 'director' came to stay. The following table summarizes the tenure of various directors –

S.No.	Name	Designation at CISCOM	Tenure
1	Mr. Y Reddy	Chief Editor - BIP	1972 - 1983
2	Mr. Y Reddy	Editor-in-Chief (BIP)	1983 - 1985
3	Mr. S Sharma	Acting Editor-in-Chief (BIP)	1985 - January 1989
4	Mr. R S Rathore	Acting Editor-in-Chief (BIP)	Jan 1989- May 1989
5	Dr. Gokhale	Director (formerly Sr. Scientist Atomic Research Centre)	June 1989 - 1998
6	Mr. R K Goyal	Director (formerly Director Centre for Information Sciences)	August 2003 – till date

(Source: information gathered through interviews)

Mr. R K Goyal joined as the director on August 1, 2003. He is an engineer with masters in business administration; he is a professional IT manager with more than twenty five years of experience.

CISCOM under the new leadership

Initiating Punctuality

"I did not do anything immediately to control the situation,' says Mr. Goyal. 'Instead I started observing the state of affairs. They (people) used to come late to the office. They would walk in any time they desired; it could be 11 a.m. or even lunch time. Then they would be seen chatting around with their colleagues and could not be traced to their seats. They did a little bit of their official work and then they left early. This place never looked like an office to me; it was more of a park, where people were happily jay-walking.'

'I started interacting with the departmental heads and the editors of the journals, on a one to one basis. I wanted to understand the difficulties they were facing, since the productivity was extremely low. Given the kind of infrastructural support that they had, why was everything delayed? All the journals were running late by almost a year.'

Mr. Goyal soon understood that the last 5 years contributed greatly to making CISCOM dysfunctional. They were not expected to set targets and achieve them annually. There was no pressure on them to perform, since being in a government set-up their jobs were quite secure. Moreover, it was not a case of one or two persons; the entire organizational staff was behaving in this manner. There was no one to correct them.

'First of all, I wanted them to come on time, so I sent a circular to everyone asking them to adhere to the office timings of 9:00 a.m. to 5:30 p.m.', said Mr. Goyal. 'I was not asking them to do me a personal favor; they were supposed to come on time'. Though initially employees did not observe the timings strictly, but very soon they were being issued notices and were asked to submit explanations for their late arrivals. Mr. Goyal instructed all the departmental heads and senior scientists to submit a weekly report on late arrivals and absentees. He also introduced a system of monitoring movement outside the organization through 'movement control register'. Anyone leaving the premises for more than half an hour had to mention the reason for going out and expected time to return. Mr. Goyal would go through this register daily and call the person the next day to understand the cause of frequent movements or personal reasons behind that.

Initially, employees would make up all kinds of excuses for their movements or late arrivals – going home for lunch, or that the rooms were suffocated, etc. Mr. Goyal immediately realized his next move. He launched the inventory check program. Everything needed by anyone was made available in stores; a committee was formed which was responsible for all procurement and issuing material/items to people whenever required. For example for dispatching journals, one needs envelopes, glue, flanking machine etc. He ensured that everything is in place. AMC's were always renewed on time and EOQ system of inventory management was adopted. Reorder points were marked for each consumable item and orders were placed on suppliers as soon as the reorder point was hit. Employees complained that the dispatches were delayed because the required items were never there in the stock. The head of print production Pradip said, 'We had to refuse a number of printing jobs from sister concerns and ministries, because we did not have paper, color or machine part had gone for a repair. So soon after his joining he put the inventory management system in place; he studied the inventory consumed and designed the inventory track system. He made sure that all 'staple items' like pins, envelopes, tying ropes etc. are always present in stock. Now whenever you ask for anything, you get it. Annual maintenance contracts (AMC's) have been taken up for all technical products like computers, printers, printing machines, telephones, air conditioners etc. He ensured availability of resources right from an eraser to an AC so that no work suffers and lag could be minimized. Today we are not only on schedule, we move ahead of schedule. The whole idea is that no work stoppages should be there for want of any material'.

Mr. Goyal also observed that the lunch time provided to the employees was quite short – half an hour. He stretched the lunch to 50 minutes and introduced 2 tea breaks of 15 minutes each, at 11:00 a.m. and 3:45 p.m. Fresh tenders were also invited for the canteen and within a span of 6 months a classy canteen facility was made available to the employees. Earlier most of the employees were not in favor of using this facility but nominal prices and the ambience of the canteen won them over. CISCOM's canteen supplies a platter of rice, curry and 2 chappatis (Indian bread) for mere Rs. 15; and tea for Rs. 2. The food served is hygienically prepared and is usually hot. The canteen has been installed with 20 coolers, 35 fans and round-table seating arrangements. The walls are brightly painted and decked with paintings and posters. Windows have been adorned with heavy colorful curtains and the place is cleaned thoroughly 3 times a day. Apart form serving lunch and tea, it has a small counter carrying beverages and snacks at affordable prices.

Providing neat and clean ambience

The entire building of CISCOM was almost in ruins. It had not been painted for years, and some parts of it like terraces, passages, and staircase were damaged. Most of the air conditioners were not working properly and air ducts were dirty and damaged. Though the building was situated in a huge campus adjoining the National Laboratory of Physical Sciences, which had one of the best maintained lawns in the city of Delhi; CISCOM's lawns were hugely unkempt. The pathways leading to the office buildings had not been maintained for years and gravel had come loose on them. The toilets inside the building were extremely dirty and fetid. It looked as though the whole place had been forsaken years ago, for some unknown reasons. Mr. Goyal recalled his experience at the time of joining, 'I felt that I had been thrown in some deserted corner of the country. It was difficult to sit in my office for the entire day. I wanted to understand how these people were working under this condition'. Being a government organization, even a minor work of repair and maintenance had to be approved by the director. However keeping the history of CISCOM in mind, no head of institution was willing to take the responsibility for providing a good ambience. They were afraid of burning their fingers, despite the fact that all the accused persons had been terminated from their jobs. A senior scientist Rajiv Mathur observed, 'they did not want to invite fresh trouble, so they avoided taking any decision, however small it was. Initially we thought that Mr. Goyal would also be like others, but he took all bold decisions. He called a meeting of all the persons and said that he wanted us to sit in neat and clean places. Everything should be perfect. He wanted our support for this. He formed 3 committees of scientists and administrative staff members – one for undertaking garden maintenance, another one for building repairs maintenance and cleanliness, and last for equipment maintenance'. The committees were asked to seek suggestions from other members if required and suggest within a week's time, of what needed to be done and how it would all be executed. For the next 4 weeks, the committees made a list of tasks that needed to be

done, the tentative list of contractors, and cost and time estimates. Once everything got approved, Mr. Goyal asked the committee members to advertise for tenders and complete the process in as soon as possible. By the end of November 2003, the repair and maintenance of building and equipment had started. The contractual gardeners had started the manicuring of lawns. In 2006, the re-modification work on the building started to make it more aesthetic and habitable. By the end of 2007, the CISCOM building was considered as one of the most well planned and well maintained by its employees as well as the visitors. One of the visitor, who is the director of another lab of NCRSI, had mentioned in the visitor's book – 'though I have come here a number of times, this time CISCOM appears new to me. The whole set-up has undergone a change. Everything seems so beautiful…rooms, corridors, lawns'. V. Gandhi a senior scientist says, 'he stressed that all of us should have a neat and clean workplace; clean toilets and clean surroundings – free from litter and paan stains, and beautiful lawns. Even Mr. Goyal says that 'there is no reason why one should have a dirty place and stinking toilets. What have I done? I have just created beautiful lawns and clean offices, and the rest followed. It is soothing for everyone including me."

Using Information Technology

Mr. Goyal promoted use of information technology for a number of areas. Right from monitoring attendance and inventory using employee management and stock management softwares to receiving payments through secured gateways, he encouraged widespread use to information technology among all persons. Regular training sessions were organized for employees to learn newer techniques and revisit older ones. All the departmental heads were encouraged to use simple MS office tools like MS Excel and MS Project to plan and monitor activities of their departments. They were asked to submit monthly MIS reports to the director highlighting the targets set for that month and the progress made in that regard. In this manner, regular planning and control became an essential feature at CISCOM.

In 2005, Mr. Goyal also introduced a document movement monitoring system (DMMS). Through this system all the files are tracked through a web based software. All files are coded and subject is mentioned in this software. Whenever it is received by any individual of a department, the code is read and the file is tracked. Whenever it is forwarded to any other person or department then again the code is entered in the computer. In this manner the movement can be tracked. The benefit of this system is in terms of tracking down the movement of the file and figuring out as to how much time the file has spent on which desk. All files contain some information pertaining to an activity demanding some kind of attention or decision. But if is lying on any desk for more than the required time period then it means that the decision is being delayed on that matter. Hence, the head of the institution is able to know which file is taking time in which department and on which table. A fortnightly report is generated and given to director. Due to this, efficiency has increased because people have become more accountable since now they are required to finish the given amount of work related to that particular file within a given time period. The software is further being modified to introduce the concept of target date, by which the action has to be taken on the file.

From June 2006 onwards, Mr. Goyal aims to achieve a paper-less office. Within and between departments, the communication is encouraged through e-mails. All employees' right from class III (clerical) to the director have their own e-mail accounts, through which much of the required informal and formal communication takes place. Vinod Gupta, IT head observed 'we want to achieve a paperless office by the end of 2010. Paper used for internal communication has come down, but most of the external communication is still on letter heads. As of date we are a less-paper office moving towards the paperless office'.

From January 2007 onwards, the project of making the contents of all journals available on website of CISCOM commenced. By August 2007, 4 journals could be fully accessed through internet. The remaining journals were partially available; the whole project was scheduled to be over by the end of December 2007. The editors expressed that this initiative should result in high affordability, accessibility and availability and should also increase its visibility. The editors feel that the set of subscribers will further increase because key word search will give a listing of their journals as well during searches. Full payment gateway is also to be introduced very soon so people should be able to gain access to other services as well.

An internal website has also been created for CISCOM. It provides the facility for notice board where the employees can post their notices, invitation and other information. A facility for downloading software and tools has also been provided; the tools like acrobat reader, Microsoft office tools etc. All the employees are also provided email accounts on this website. There was a proposal to start a knowledge bank very shortly, which shall be a reservoir of experiences and practices of CISCOM.

Very recently, NCRSI has also allotted CISCOM a project of creating Information and Computing Technology Grid to link all the 38 labs of NCRSI. Its basic purpose is to share research related work among all labs. A budget of Rs. 97.5 crores has been sanctioned and the project has to be completed within next 23 months.

There are 15 servers (windows based, UNIX, and LINUX) viz. firewall, domain name, proxy, mail server, web, DLCK servers etc., more than 500 computers and 50 laser printers and scanners, installed on both campuses. Very soon, CISCOM is planning to have an ERP process for activities like purchase, billing, employee records, accounts, etc. This project shall be completed within next 2 years – 2009 for all NCRSI labs.

Creating a transparent and integrated communication system

Mr. Goyal elaborated, 'see, we cannot totally rely on IT to improve communication and coordination among people. We also need face-to-face interaction. IT can improve coordination and transparency among the employees, but the issue was to get them to talk to each other'. He pioneered a system of coordination committee, which is a kind of 'panchayat' where representatives of all divisions interact with the director. The meetings are organized fortnightly, where the main objective is to review the ongoing activities of past fortnight and set targets for the coming fortnight. The Coordination Committee (CC) comprises of the Director, Convener, co-convener, project leaders, those involved in action under minutes, HOD's or their representatives, 5 members each from Group I, II, III and IV on rotation basis and 10 members from Administration/Accounts/ Stores & Purchase on rotation basis, with a total tally of 65 – 75 persons per meeting.

Dr. P D Tyagi who is an active member of CC and also conducts these meetings even during the absence of the director, says that, "earlier these meetings were held every week and all the items were discussed in the presence of the director. But now since the system has fallen in place, we have lesser problems; these meetings are becoming monthly in nature. Also we are able to manage in his absence and only the sorting out of very important issues require his presence. This is one of the most important and effective mechanisms responsible for the growth of CISCOM, e.g. out of 201 items put up in these meetings till date, 86% have been settled…since it is a face to face interaction, so one cannot hide anything."

Sanjeev Brar, Head of Education and Training shared his experience, 'this is a very transparent way of dealing with issues. We have certain persons who take their own sweet time to do the work; they always had excuses for delaying the matters. Now in the coordination committee meetings, we are supposed to openly point out the persons who have delayed the files. They are asked to explain why that happened, and how soon they would be able to complete it. All this is recorded in the minutes and in the next meeting they are again asked about the progress'.

A concept of General body meetings have also been introduced by the director. GB Meetings are the platform for discussing all sorts of matters, be it purely professional or personal. The aim is to bring the management closer to every individual working at CISCOM. This adds to quality and transparency in working. These meetings are held once every quarter and employees of both locations are supposed to attend it. These meetings are cathartic in nature. There is a lot of vibrancy as the attendance is almost 100%, and people share their experiences and vent out their grievances in front of the Director. He takes instant decisions or suggests appropriate remedial measures. A meeting held on 5th September 2007 lasted almost 2 hours. The meeting started off with the Director giving out the achievements of the last quarter- in terms of all the current projects. A group of scientists had attended a couple of conferences on Nanotechnology and Biosciences. They shared their experiences. 3 persons were retiring in the coming 2 months and director applauded their contribution to CISCOM. Another scientist who had shifted to Delhi from Indore, was finding it difficult to get his sons admitted to a school in the mid-session. He requested the director to

help him; Mr. Goyal assured him that he would definitely see what can be done. Some other light hearted talks were there and finally everyone left after consuming tea and snacks. Renu Bhatnagar, Assistant Production Manager commented after the meeting, 'it's a way to connect with others. All of us come together under one roof for a couple of hours, share, talk and leave'.

Vinesh Gandhi, Finance Officer says, 'He (director) introduced the concept of general body meeting and coordination committee meeting which has changed the scenario completely. Communication has become faster and transparency has been built up in every single activity of the organization. He questions ongoing activities and sets deadlines during these meetings, and then follows them up in next. He emphasizes hierarchy a lot though he has adopted a very transparent system of dealing with people. Juniors may walk in with a grievance, but a senior has to be obeyed.

Another thing is that as it is customary to exchange sweets and gifts during festivals like Diwali and Holi in India; but at CISCOM we cannot even accept a box of sweets from anyone."

The coordinator of Project Monitoring and Evaluation committee and the Editor of the Journal of Experimental Biology, Mr. Rajiv Mathur asserts that, "people are encouraged to give new ideas and suggestions for CISCOM in meetings. Mr. Goyal believes that a quality work leads to greater clientele and so encourages people to adopt new technologies and take up new projects. He urged that though the mandate said that dissemination of information should be through print media but we should not ignore the new technologies and tries to integrate our functions through IT and adopt new technologies. This kind of management that we have today, we did not experience it earlier. Manpower is getting reduced still the productivity is increasing. Management style and monitoring are the most important elements."

The head of sales and marketing adds further, "Now we are more dedicated to our work. There is sincerity among staff members and belief in boss and management. The director says, 'promotion for everyone is not important but work for everyone is more important'."

However, Mr. Vikas one of the Scientists of erstwhile CSD, when asked about the leadership style remarked as follows -

"Whenever a new director comes, he brings his strengths and weaknesses which impact the institute. Some directors have given their whims and fancies to this institute. But directors have been there only for some duration; otherwise the institute was mainly looked after by in-charges. Autonomy to the institute has increased over a period of time, but it has also increased discretionary decision making. The director has become more powerful over a period of time."

"The basic objective of the present director is to get work done from everybody whether he or she is wiling to work or not. He believes that people have to do work because they are getting the salary from the government. The good thing is that he has not isolated anyone from work whether one can work or not, one has been delegated work by identifying ones strengths."

"He never keeps any file on his table even for a single day- he is a quick decision maker and has a very good problem solving capability. He is able to manage time very well for all projects. He sees the efforts of people put in by them but also allows time slippages if efforts put in by people are genuine. He sees that everybody gets promoted which provides motivation. As a human being he is very good, a hard nut superficially but very soft inside. He is a tough tongue, sometimes it hurts though the results are not bad. He does not threaten, he teaches lessons only to those people who are adamant and non-reformable."

However being somewhat dissatisfied with the merger, he remarked that, "Every director tries to pursue his own policies. Whenever a new director is appointed, his first agenda is to undo the previous things, in the first year. After 2-3 years he initiates his own policies. Then his tenure ends and a new director joins, and the same cycle repeats. This is not a good exercise. In this process, we are harming the nation. So much money is spent on these labs; therefore they should have a clear mandate and clear guidelines, beyond which no director can move. But all labs of NCRSI are director centric. Whatever, they decide holds and whichever manner they want to work, they work."

While commenting on the committee structure, Mrs. Lakshmi, Technical Officer, Patent Division said, "this is a unique way of involving people throughout the organization, be it infrastructure or purchase, everyone gets a chance to participate in the decision making process. This increases my

learning of an activity other than my core function… the ownership lies with us. For instance, every purchase decision has to pass through several committees like Tender drafting committee, tender opening committee, technical evaluation committee, and financial evaluation committee. In case of 'works' an additional committee called implementation committee is also there. Thus every purchase and work has to pass through 4-5 committees in all comprising of 30-50 staff members. On an average, 7-8 purchase/works are going on simultaneously, so almost every employee is a part of some committee."

Being an active member Dr. Padam Das stressed upon the importance of these initiatives, "He has floated the concept of participative management and committee system, which is believed to have brought about the most significant changes at CISCOM. He emphasizes on each and every issue to be discussed in a meeting only. Every issue, be it big or small is discussed in these meetings, persons are designated to look into matters and all decisions are taken there only. No decision is made outside these meetings no matter how important it is or even if it is related to outside parties like vendors, clients or suppliers". The head of the print division explains, "He has also introduced a system of 'fast track' payments to all vendors and suppliers without exception. For the first time he has also introduced clauses in the vendor agreement like 'if the default is made by the supplier, in any manner, then he/she shall be liable to pay to CISCOM, and if the organization makes a default somewhere then it shall be liable to pay to the vendor."

New Projects at CISCOM

Ministry of Science and Technology comes out with various projects for the labs of NCRSI. The labs can bid for them and the winning lab gets a chance to increase its external cash flow and thus improve its ranking. In last 2 years, CISCOM has the distinction of implementing of 3 major network projects, out of the 7 that were advertised by the Ministry:

1. Digital Library on Conventional Knowledge (DLCK)

DLCK is a joint project between CISCOM, NCRSI, and the Department of Ayurveda, Yoga and Homeopathy. It was created with the objective of preventing the granting of patents on non-patentable traditional knowledge. The development is also significant for the fact that India has been recognized as the major owner and contributor of traditional knowledge in the world. Not long ago, the country had to fight a costly battle against granting of patent on turmeric for its wound healing properties by the US Patent and Trademark Office. Although the patent was revoked after India brought to light 32 references to turmeric in its ancient texts, the battle for turmeric gave clear indications that such misappropriation of Traditional Knowledge would continue unchecked at the international level unless existing information or prior art about traditional knowledge and practices was made available to patent examiners.

Patent examiners in the international patent offices, when considering the patentability of any claimed subject matter, use available resources. Patent literature, however, is usually contained in several distinctive databases and can be more easily searched and retrieved whereas non-patent literature prior art may be buried somewhere in the many diverse literature sources in either codified or non-codified form in regional expressions. Traditional knowledge needs to be made accessible to patent examiners in a format that is easily understood by the patent examiners and the language barrier has to be overcome. Therefore, the project on DLCK was initiated to create more easily accessible non-patent literature databases dealing with traditional knowledge. The main objective of this network project is to prevent misappropriation of our rich heritage of traditional knowledge. It will also help in fusion of the traditional knowledge with modern science and facilitate the development of safer and cheaper drugs.

DLCK software with its associated classification system, i.e., Conventional Knowledge Research Classification (CKRC) converts Sanskrit slokas into 5 international languages -English, French, German, Spanish and Japanese. The software does not do transliteration rather it does smart translation, where data abstracted once is converted into several languages by using Unicode and Metadata methodology. Software also converts traditional terminology into modern terminology, for example Kumari to Aloe Vera, Mussorika to smallpox, etc. The DLCK database then acts as a bridge between ancient Sanskrit slokas and a patent examiner at a global level.

DLCK has already documented the public domain knowledge on 36,000 formulations of Ayurveda from 14 authentic texts in a digitized patent application format.

DLCK has become a model for other countries for replicating such a work for the benefit of their own countries. Many neighboring countries of India especially those belonging to the SAARC group have sought assistance from CISCOM for creating such similar databases in their own countries.

2. Central Network Library

The NCRSI e-Journal Consortium is a tenth five-year plan project being implemented by CISCOM, for all the labs of NCRSI. The objectives of the project are –

a. To provide electronic access to 4500 international S&T journals to NCRSI Scientists and strengthen the facilities for pooling, sharing and electronically accessing the NCRSI information resources.

b. To nucleate the culture of electronic access with a view to catalyzing the evolution of digital libraries.

Mr. Chandra, a Senior Scientist of erstwhile CSD and head of e-consortium project explained the importance of this project as, "This consortium is formed to acquire access of international S & T journals for the S&T staff of NCRSI labs. Since majority of the labs of the NCRSI are R&D labs, therefore, journals are essential inputs for carrying out R&D activity. The base of international R&D journals in NCRSI over last years has come down by almost 70%. The reason for reduction is escalation in the price of the journals. In last 20 years the price has gone up by 227%, but the budget allocation of NCRSI to various labs has not increased proportionately. The average cost of a journal is Rs. 1.3 lakhs per year and NCRSI spends Rs. 25 crores to subscribe to this information resource base to feed R&D activity. Such a huge amount of expenditure is also of social concern, because it is taxpayers' money. Still this amount is considered to be small compared to the requirements of all labs. There are 25,000 journals in field of S&T worldwide, which are considered to be research journals. Out of these 15, 000 are reviewed or referred journals and out of these 12, 000 are available on-line.

In 1993 NCRSI labs altogether were subscribing to more than 8000 journals, in the year 2000 this figure dropped to 3300 journals and has further reduced to 2700 in 2004. Through this project NCRSI wishes to expand its information resource base. The target is to provide e-access to 4500 international journals. The project commenced in April 2004 and so far we have acquired an access to 4000 journals, to be used by all labs. The access is provided through the IP of each lab. Since the labs were demanding higher subscription base so a collective decision was taken to provide this facility, which could be made possible due to advancement in web technology and on-line access. As CISCOM's mandate is to support the information requirement not only to the whole country but to all labs of NCRSI, so it was chosen as the central point for implanting the project.

3. Digital Library for Science (DLS)

National Science Digital Library (DLS) the first of its kind in the country envisages providing e-access to digital resources of curriculum related material in science and technology to students, particularly those in far flung areas. The basic aim of this project is to reach the students in the remote areas, and provide them e-learning facilities and access to quality curriculum-based material at a level similar to that available to students in metros. Approved as a core network project under the tenth five year plan (TFYP) in April 2005, with a budget outlay of Rs.44.23 crores, DLS will be implemented with the active participation of the University Grants Commission (UGC) and Ministry of Human Resource Development (MHRD). Initially, DLS will target the students of undergraduate level of Indian universities and colleges. It is proposed to create original and targeted contents by identified panels of experts/authors for about 1000 e-books for undergraduate students by the end of 2006-07. Contents will be subject specific, location specific and university specific.

Outreach Programme

In the year 2002, the total subscription base of the all journals was around 3800. In the year 2005 – 2006 this figure has touched 13,380. It touched 15, 000 in the next year, 2006 – 2007. By the end of the year 2010, the subscription should be 20,000 copies.

The following table shows the growth in the subscription base of the journals –

Year	2002	2003	2004	2005	2006
Total Subscription per year	3800	4312	7013	11171	13380

(Source: Annual Report CISCOM 2006 – 07)

Dr. Rastogi, who heads the Periodicals division has, attributed this growth to the 'Outreach Programme' initiated by the director in the year 2004. He asserts that, "The main reason for this is the effort put in creating awareness. A program has been devised known as the 'journal outreach program', wherein the addresses of potential subscribers are collected from internet and other sources. Also those who have stopped subscribing are also approached by sending brochures and copies of journals so that they become aware about the changes happening in each journal. Every month each editor has to write 50 – 100 letters both within India and abroad, to such people. Earlier this was the responsibility of the sales and marketing division, who were non-technical people and they had their own constraints in identifying the addresses; then this responsibility was transferred to the respective editors, they were required to send these letters monthly. Now every year around 25% – 30 % growth is experienced. The entire process is monitored through the MIS system, where a monthly report is submitted to the director, about where all the letters have been dispatched. Now sales and marketing division is just providing support service which is known as 'total satisfaction service', where they are ensuring 'timeliness' so that the journal reaches the subscriber in time. A complaint committee has been formed comprising of 3 persons who direct the complaint to necessary persons and we have achieved 0 level complaint or hassle free system".

Very recently the popular science division has also initiated the "Popular Outreach Programme" program, wherein 4000 schools were contacted from January 2005 till May 2005. Around 1800 subscriptions have been received till date and now every month the division plans to send around 1000 letters to schools all over India. In this scheme, each school is sent a poster, a letter addressing the principal, a copy of magazine and 50 subscription forms. Bulk discounts are also provided on subscriptions that is, 30% discount on 20 or more subscriptions from one school.

"I always felt that the lack of visibility has been a major drawback for our magazines. We have people coming from various parts of the country to Delhi and they see this magazine here. But when they go back they do not see it in other parts. As a government policy we do not get heavy amount to promote these magazine through advertisements. Whatever promotion we do that is from the funds earmarked in the budget, for this purpose only. So within our limited means we are trying to achieve this," told Mr. Javed Khan, Editor Science Reporter. The circulation figures for all the three magazines are shown in the table below:

Magazine /Year	1991(copies per year)	1992(copies per year)	1993(copies per year)	2004 (copies per month)	2005 (copies per month)	2006 (copies per month)	2007 (copies per month)
Discover Science	35000	43000	44000	32,000 (Price Rs. 12 per copy)	33,000	37,000	38,000 (Price Rs. 15 per copy)
Vigyan ki Duniya (Hindi)	71000	77000	78000	28,000 (Price Rs. 10 per copy)	30, 000	36,000	36,000 (Price Rs. 12 per copy)
Science Ki Duniya (Urdu)	9000	9000	9000	5,000 per quarter	6,000 per quarter	8,000 per quarter	6500 per quarter

(Source: table constructed from the information gathered through interviews)

The editors of all the three magazines feel that the 'outreach programme' has had an impact on circulation, because the efforts to popularize the magazines were taken up by the editors themselves. Earlier there was no effort on part of the Editors to popularize the books and journals. A separate sales and marketing division had been formed by Dr. Gokhale so that the Editors could concentrate on their own work, but this division could not do much in this respect. Now it is engaged in setting up stalls at book fairs and also promoting the books in bulk to various private institutions and government supported institutions.

The most significant development in the context of CISCOM journals, during the year 2005 was the unanimous decision taken at the meeting of the international Authorities held on 21 February 2005, under the Patent Cooperation Treaty (PCT), to include two journals of CISCOM, namely journal of Traditional Knowledge (JTK) and Medicine and Plants Abstracts (MAPA) in the non Patent Literature (NPL) part of the PCT Minimum Documentation. It is for the first time that scientific journals from a developing country have been included in the coveted list of 'prior art journals' used for prior art search before the grant of patent(s) by the international Search Authorities. With this, India has joined the select list of thirteen nations and shares the seventh position with France and Switzerland.

Organization Structure

The only major change to the organization structure of CISCOM occurred at the time of merger of CSD with CSC, whereby all the departments of CSD were simply added as new departments to the existing structure. Currently, all the activities have been categorized into 14 divisions. Each division is headed by a senior most Scientist / Scientist of that division. The director in turn heads all the divisions. The functions and activities can be broadly classified as under –

1. Activities of erstwhile CSC – include Periodicals division, Popular science division, sales and marketing division, CKDL and Herbarium division, and Print Production division.

2. Activities (of erstwhile CSD) added after the merger – include Education and Training, documentation Centre, Abstracting Services and National Science Library.

3. New activities introduced by Mr. R K Goyal include DLCK, DLS, Network Library and IT Department.

4. Support activities like Administration, Finance and accounting, stores and purchase, and Infrastructure and common services.

Delivery of Goods to Public and Generating External Cash Flow (ECF)

All the NCRSI labs are required to set priorities and generate funds through their R&D activities and commercialization of their technologies. The financial indicators of CISCOM for the year 2006-07 are given below.

The CISCOM budget sanctioned for 2006-07 was Rs. 2353.03 lakhs. The external cash flow (ECF) of the lab during the year 2006-07 was Rs. 729.52 lakhs. This is 85.6% higher than the ECF of 2005-06 (Rs. 393.03 lakhs). The lab reserve receipts were Rs. 196.921 lakhs and Rs. 88.60 were utilized. The breakup of the ECF is given below –

External Cash flow (amount in Rs. Lakhs)	
DLCK Project	352.45
IGNOU	8.16
Library Automation	.603
Short term courses/attachment training	12.04
Dir of S&T	.076
Sales of journals, popular science publications etc.	294.00
Job work/ printing	62.175
Total	729.51

(Source: Annual Report 2006 -07. The External Cash Flow is the cash flow generated from activities undertaken by CISCOM for external parties/clients).

NCRSI encourages its labs to generate more and more resources through commercialization of their technologies/products and R&D services. Currently, NCRSI expects each lab to earn at least 40% of its budget. With effect from year 1992-93, NCRSI introduced the scheme of Lab Reserve Fund to encourage the process of commercialization. Under this scheme, after meeting their portion of the budgetary commitments from the income through external resources, the labs can keep the remaining amount under a special Lab Reserve Fund. This fund is controlled and administered by the labs.

The growth in the ECF and LRF for CISCOM is shown below –

Year	ECF (amount in lakhs)	Cumulative deposit under LRF (amount in lakhs)
1989-90	41.3	-
1990-91	98.0	-
1991-92	118.7	-
1992-93	151.5	72.7
1993-94	143.1	120
2003-04	276.04	95.22
2004-05	362.61	116.458
2005-06	393.03	105.17
2006-07	729.51	196.92

(Source: Various Annual Reports)

However Mr. Goyal explains that ECF is not the only indicator of performance for NCRSI labs; NCRSI wants its labs to focus on 4 areas which are –

1. Delivery of goods to public (publications, research, good science, etc. in case of CISCOM)
2. Societal activities like training and education (Education and training division of CISCOM)
3. Working for strategic areas (e.g. DLCK and DLS Projects taken up by CISCOM), and
4. Working for private good where labs can create patents or take projects to generate ECF.

He adds further, "so ECF is just one of the four; other 3 are equally important. Each laboratory can decide the kind of weightage to be given to each area. The combination of 4 decides the performance of a lab. In ECF we have done very well since we have focused our attention on processes, if they are good and in place, ECF will grow".

Issues related to Human Resource

At the time of merger, in the year 2000 – 2001, CSC had a total strength of 290 employees while CSD had 234 employees. After the merger in 2002, some of the employees requested for transfers to other labs, while no fresh recruitments took place till 2005, however the retirements continued. In 2006 – 2007 the total strength of employees was 384.

The merger did not call for a major restructuring since the identity of the departments of both the institutions was kept intact. However, since there was no need for duplicate support activities therefore, restructuring was done for the support staff. Dr. Tyagi informed that, "at the time of merger, extra staff, which was very small in number, was laid off only from those areas/activities which became redundant. But an effort was made to deploy the additional workforce in units which had a shortage of manpower, e.g. the production division got more people. Throughout these years, the change has been managed effectively; no representation of any kind whatsoever has ever been made to the government. Also some people benefited from this merger as inter departmental transfers to offices in other cities became possible."

Mr. Pradip, Head Print and Production control says that, "a number of people have retired so more young people are required. We need more people to fill the vacant positions fast and with persons having good backgrounds. Turnover is zero. Nobody leaves the organization; people have retired and our workload is increasing day by day, now we have to work more with less number of people. Nevertheless the productivity has gone up, because people engage in lesser gossip and fruitless talk so they work more. Less people less talk, more work."

Quite recently 16 Scientists have been appointed, whereas 30 more are yet to be recruited. All the recruited Scientists are doctorates (PhD's) in the respective fields. For the network projects like DLCK, CISCOM requires a team of experts in Ayurveda, Unani and Siddha. It has taken up these Scientists on a contractual basis. However, Mr. Arjun Sharma, Section Scientist, Recruitment and Vigilance, "a proper recruitment policy is a must e.g. from the administrative cadre, a peon once appointed could be promoted to Lower Division Clerk, to Upper Division Clerk and then to Section Scientist; without having professional background, these people just on the basis of promotions achieved higher positions but could not do enough justice to the jobs. Similarly, many Scientists had joined at a lower level and with lesser qualifications, but are now occupying senior positions. Then there are junior Scientists who are PhD's working under these senior Scientists and then there is a conflict. Now because specialized projects are coming, so we have to recruit people on contract basis to get these projects completed. So what we need is a justified recruitment policy. But recruitments cannot take place, because the court cases are still going on. We have been able to do these few recruitments just because we have been winning many cases. So legal aspects are very important for this organization, and they need to be taken care of properly."

Promotions were another area of concern at CISCOM. Lots of promotions were held up for a long duration of time. A member of Sales and Marketing division commented, "The staff was capable of delivering results but was not giving good performance. With his (director) coming to the institution and his leadership, this situation has improved. Earlier promotions were delayed, now all promotions which are due are given to the people within the time frame."

As is the case with all the labs of NCRSI, vacant positions are filled on the basis of All India exams conducted at regular intervals. Though a lab has freedom to appoint part time or contractual workers but permanent recruitments are made by conducting a national level written exam followed by an interview.

What lies ahead…

Dr. Rajiv Saxena, member project monitoring and evaluation committee talks about the future plans of CISCOM, "in the short run, DLS project is going on, which is worth 40 – 50 crores. CBDL is a long term project. This project involves digitalization of all flora information of India. This idea got generated from DLCK project. The herbarium which runs into millions of specimens can be digitalized to protect its life and to help the researchers ascertain new species. With the changing times, new technology is being adopted for dissemination e.g. e-learning initiatives. Journals are being made available on line. National science digital library is also being created. Also for a wider reach to public, the books are being published in majority of Indian languages."

The periodical division sees the following changes happening, "The full content subscription is also being planned out. Four journals are already available in soft form. A seamed gateway payment facility is being built into the website and DLCK portal. So the subscriber has to just click the website and make payment through credit card. Money would come to banker, which would be transferred to our account, everyday information would come about subscriptions and dispatches would be made accordingly. So delivery becomes very fast. Also if a person would just like to download one article, it is also possible and convenient." They further emphasize on collaborative projects, "The future lies in collaborative projects e.g. one such project 'central biodiversity digital library' which is in collaboration with botanical survey of India is being planned out. The idea is that CISCOM should be able to generate at least half of its budget of Rs. 14 to 15 crores by itself. Even government is encouraging collaborative projects rather than full funding of any project. The amount which is earned in excess of the required goes to the lab reserve which may be used for up gradation of facilities, etc."

A Scientist of former CSD shows his concern, "– a lot of IT projects worth Rs. 200 crores are there. It we don't have a right succession, then nothing can be done."

The tenure of Mr. V K Gupta expires next year in August 2009. No one is sure whether Mr. Goyal shall be applying for an extension or not. But in case no extension is given then, "A director who like him is an equally good thinker, strong and enterprising and knows his work would be required. I have a doubt that institution would continue running the same way since we face outside disturbances. Mr. Goyal is strong and has a very clear outlook" says Mr. Pradip.

On the other hand Mr. Goyal gives his own opinion, "I have to do a job, somewhere or the other. If I get a better job than this job, I will leave. If I don't get a better job than this, then I have no problems. If the people, who decide the director, find a better director than me then let them bring a better director… see nobody is permanent, if not after one term then I will go after second term. Everybody has to leave, so the issue is that whether you create people-dependent system or people-independent system, the answer lies there. The system which has been created is largely people-independent. However institution of this nature, are enormously director centric. Whatever people-independent system is created, if the new director wishes to change it, and decides to change it, and goes all out to change it, maybe with enormous resistance, he may manage to change it. Nobody knows. But a people-independent system, has a lesser chance of not surviving, people-dependent system will have a higher chance of not surviving. I guess today, the way CISCOM is, it is a people-independent system, and it has a higher probability of success. CISCOM's continuance with this new face and new image will be far more enhanced if CISCOM's system is able to create projects near to DLCK / DLS. Then there is no issue. If they are not able to create, then there is an issue".

On being asked by the case writer on the future of CISCOM, Mr. Goyal replies, "there are two issues – one is to earn bread and butter, other is to grow, all of us need bread and butter. So we need lot of activities with periodicity, which are regular in nature, and we need whole lot of efficiency in that, so that the bread and butter problem doesn't happen. In case of CISCOM these are journals and popular science products, they are the bread and butter. And we have created an efficient system for

them. But merely surviving on this, will neither give brand equity, nor an image. So being a national scientific institution, we decided to address the issues of national significance and we took up innovative projects like DLCK and DLS, but after 5 years they will also become routine activities, and then you must make them efficient. And if you want to survive only on this, then the brand equity will go, the growth will go, so we must also add more innovations. That's the way it goes".

Discussion Questions –

1. What are the factors that affected the efficiency and effectiveness of CISCOM before Mr. Goyal joined as Director?
2. Trace the process of change at CISCOM. What were the foci of intervention taken by Mr. Goyal?
3. What have been the outcomes of change?
4. To what an extent are these changes likely to perpetuate after Mr. Goyal leaves the organization?
5. If you were to assume charge of CISCOM after Mr. Goyal, what would you do to make CISCOM face the challenges ahead?

ANNEXURE 1

Divisions of CISCOM and Services offered through them

1. Periodicals division

CISCOM publishes19 scholarly research journals of international repute, covering all major disciplines of science. All journals are covered by major abstracting and indexing services, so articles get a wider access and people may subscribe depending on need. The contents and abstracts are available on the website of CISCOM. The worth of a journal is measured by science citation index. Science citation index is a tool to measure the impact on scientific community through the calculation of the 'impact factor'. The impact factor is given by ISI Philadelphia. It is calculated as –

Impact Factor = number of citations received by the source articles in current year

Number of sources articles published by journal in last 2 years

The total number of journals published in India is 12, 000 out of which the journals based on Science and Technology are 2318. In case of India, only 47 journals of the total number of S & T journals are being considered for citation by the international community. 9 of these 47 journals are being published by CISCOM. The list of 9 journals and their impact factor is given in the table below:

S.No.	Name of the Journal	Impact Factor 2005	Impact Factor 2006
1	Indian J Biochem Bio	.252	.308
2	Indian J Chem A	.489	.509
3	Indian J Chem B	.492	.476
4	Indian Chem Techn	.197	.235
5	Indian J Eng Mater S	.226	.087
6	Indian J Fibre Text	.139	.112
7	Indian J Marine Sc	.124	.150
8	Indian J Pure Ap Phy	.366	.399
9	J Sci Ind Res	.192	.191

Among the Science Journals covered by the Index, the Annual Review of Immunology has the highest Impact Factor of 46.23 during the year 2006.

The publication data of the various journals is shown in the table below:

Journal and periodicity	Year 2000 - 2001			Year 2004 - 2005		
	Papers received	Papers published	Papers rejected (rejection rate %)	Papers received	Papers published	Papers rejected (rejection rate %)
JSIR (M)	191	117	48 (25)	245	116	80 (33)
IJEB (M)	570	228	220 (40)	442	184	184 (41.6)
IJC-A (M)	460	279	198 (43)	400	226	180 (45)
IJC-B (M)	405	211	138 (34)	460	261	155(33.7)
IJPAP (M)	300	142	120 (40)	350	151	115 (33)
IJBB (BM)	119	60	43 (36)	97	50	39 (38.1)
JIPR (BM)	24	23	3 (10)	73	31	12 (16.4)
IJCT (BM)	119	81	18 (15)	207	121	78 (37.6)
IJRSP (BM)	84	51	20 (23)	81	55	14 (17)
IJEMS (BM)	192	91	50 (26)	205	80	72 (35.1)
NPR (BM)	Did not exist			140	59	35 (25)
IJMS (Q)	85	53	20 (25)	190	52	79 (42)
IJBT (Q)	Did not exist			203	87	54 (27)
IJTK (Q)	Did not exist			175	52	33 (18.9)
IJFTR (Q)	110	55	28 (25)	150	67	72 (48)
BVAAP (Q)	27	18	6 (22)	270	64	206 (76.3)
ALIS (Q)				57	21	31 (54.4)

(Source: Annual Report CISCOM: 2007-2008)

One of the Scientists summed up the contribution of CISCOM's journals as, "our journals give information regarding the research that is going on in India. When we subscribe to foreign journals, we get to know what kind of research is taking place in those countries. But since our labs are not that technically advanced the students of Indian universities find a disparity between what is being taught and what they read in these foreign journals. Our journals are able to bridge this gap by bringing forth the Indian perspective to our students. In India, we have certain institutions coming out with journals but they are very specific to a particular area. It is only CISCOM which took the initiative of coming out with journals in all areas of science."

The director says that any organization has to exist for its clients, and CISCOM is no exception to this. He adds that, "as far as S&T journals in India are concerned, we have no competitors, because at this level no other publisher is providing non news and non current items. But internationally, there is a whole lot of competition and to be honest when we benchmark against them, we are quite low. However, in case of patent literature which has around 140 journals, offered by most of the developed countries of the world, India positions at number 7, by offering two journals."

TEACHING NOTE FOR THE TEACHING CASE TITLED CISCOM - 'TRANSFORMING AN UGLY DUCKLING'

I. Title of the Case – CISCOM – Transforming an Ugly Duckling.

II. Audience – this case should be used for teaching the students of Post Graduate Management Program, participants of public policy management program (participants coming from government organizations), and Participants of Part-time Management Programs.

III. Class Size – this case can be easily handled in a class of 60 students; however the minimum class size should not be less than 15.

IV. Introduction to Case –

The case describes the process of organizational transformation which happened in a public sector setup i.e. a unit of departmental undertaking – NCRSI (National Council for Research on Science and Industry) of the Ministry of Science and Technology, Government of India. This transformation has been brought about under an effective leadership of Mr. Goyal. The units of NCRSI, which are known as laboratories, function in a typical bureaucratic environment. There are 38 labs currently functioning under the NCRSI, and each lab is headed by a director. The directors of these labs are supposedly considered quite powerful i.e. high degree of centralization of power and decision making authority.

For quite some time, the government has been urging these labs to function well and had to also close down a few labs and regional research centers because of their dismal performance. Being in public sector, the government does not expect them to earn good profits, nevertheless it does expect them to be efficient and grow. CISCOM is a non R&D lab of NCRSI and is basically engaged in management of Scientific and Technological Information Resources. It was also plagued with a number of problems due to which the productivity was suffering. However, in the last 5 years, under the leadership of Mr. R K Goyal – Director, it has shown immense improvement in its profitability and productivity.

V. Class Objectives –

a. Objectives to be achieved in the class :

The aim of this case is to achieve the following –

- Sensitize students towards the functioning of governmental departmental undertakings
- Make them understand and appreciate how change can be brought about in such organizations, given the context in which they function.
- Make them understand and appreciate how changes can lead to transformation of an entire organization.
- Make them understand and evaluate various theories of leadership and, organizational change and transformation.

b. Discussion Questions:

- What are the factors that affected the efficiency and effectiveness of CISCOM before Mr. R K Goyal joined as Director?

- Trace the process of change at CISCOM. What were the foci of intervention taken by Mr. Goyal?
- What have been the outcomes of change?
- What else can Mr. Goyal do institutionalize the changes?

VI. Responses to the Discussion Questions –

Answer 1 - The discussion can throw up the following points:

- As observed in a number of government organizations, employees develop a sense of security once they are recruited. Since profit generation is not a prime motive of such set-ups, therefore evaluation of performance usually becomes difficult since it is not linked to profitability.
- The external environment in which CISCOM was functioning did not throw up many challenges and has remained quite stable, since its inception.
- There is a high degree of in-formalization among the employees, as a result of which the culture is plagued by high political activity. Usually the number of informal groups that crop up is quite large, and members exhibit a degree of social conformity – peer pressure is high.
- Slowly there is a decline in discipline among the workers, whereby they are not punctual, rate of absenteeism goes up, many cases of insubordination are witnessed, and productivity suffers. Even the routine activities are delayed beyond tolerable time limits.
- It may also happen that once a worker has learnt the task properly, he becomes skilled in performing that efficiently; but this leads to boredom and fatigue since he/she is not able to leverage it further.
- Members firmly believe that power distance is high in their organizations; so many of them resort to unprofessional ways to be close to the director (head of the organization). This initiates a power game among the employees, whereby rather than concentrating on their assigned tasks, they are largely involved in playing tactics which bridges the gap between them and the seniors. It has a ripple effect in the sense that – if one person is close to director, then his subordinates would try to be close to him, and so on. This promotes sycophancy among the workers.

Answer 2 – this question requires a much elaborate discussion and should focus on the following points -

- Firstly an attempt should be made to make students identify various areas where change has been brought about.
- One of the simplest models that are used to understand the change is 7-S Model. The students should be encouraged to comment on each of the 7 S's and then discuss the limitations of the model.
- The students can then be asked to look into the leadership aspects of this change. They can be made to differentiate between transformational leadership and transactional leadership, and how transformational leadership is more useful for such organizations. The facilitators can encourage the students to understand leadership issues in a government set-up. In a typical government set-up leaders are mostly administrators, as their job is to mostly work in the confinement of the rules established by the legislature. They are often reactive in nature and only come in action when a situation demands. They are more concerned with maintaining control and status-quo. However this approach needs to be challenged since government organizations have to become profitable and more efficient over a

period of time. Thus, leaders have to begin by understanding that organizations work as systems, that is composed of inter-relationships and interactions among employees. So they have to deliver value to the customers by focusing on processes rather than functions.

- Transformational leaders need to have a clear vision and should formulate strategy in that manner. They should be willing to empower the employees and teams by encouraging them to accept responsibility and exercise authority to take actions in the best interest of the organization.

- Such leaders should establish a management information system capable of collecting information on quality indicators, which helps them in measuring inputs, process activities, and outcomes, and thus maintain control.

Answer 3 – the outcomes of change have again been mentioned in the case; students are required to read the case carefully and identify the outcomes. The facilitator should focus on identifying both tangible and intangible outcomes through the discussion.

Answer 4 – this question may involve a greater discussion among the participants since after having read various theories on leadership and organizational change, they would discuss and debate, what parameters need to be looked at which can institutionalize this or otherwise. The facilitator has to encourage this discussion, but may have to remind the students that institutionalization of changes has nothing to do with Mr. Gupta's leaving the organization – that is, the focus of discussion should be on what changes can be perpetuated and which ones cannot be.

VII. Significant aspects of the case facilitating the discussion –

The case is narrative in nature and comprises of many excerpts directly taken from the interview data. Facilitator is advised to read these carefully as they reveal a whole lot of information regarding the process of change and how it ultimately resulted into transformation.

VIII. Where can this case be used?

The case has been primarily written to understand the process of organizational change and transformation brought about in a government undertaking and the role of leadership.

IX. Class strategy –

- The case should be distributed beforehand to the participants, so that they have enough time to read it and cull out relevant pieces of information.

- The questions can be given in the class or they may also be given beforehand; considering the purpose of the case discussion. Both the approaches have their inherent merits.

- It would be preferable to throw up the questions one at a time and elicit responses through discussions.

X. Required Time –

The case should be taken preferably in a class of 75 – 90 minutes.

XI. Suggested Readings –

a. For the facilitator:

1. Transformational Leadership in government by Jerry W Koehler and Joseph M Pankowski. St. Lucie Press, 1997.

2. Improving organizational Effectiveness through transformational leadership, edited by Bernard M. Bass and Bruce J. Avolio. Sage Publications.

3. A Causal Model for Organizational performance and change by Warner W Burke and George H Litwin. (Journal of Management, Sep 1992, 18, 3, pg. 523).

4. Chapters 7, 8 and 9 from the book titled 'Organization Change – Theory and Practice' by W Warner Burke.

b. For the students:

1. Readings on Organization Change as suggested by the facilitator.

2. Readings on transformational leadership.

3. Preferably they should have an idea of the functioning of government organizations.

XII. A Brief about the Author –

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SHRIMP EXPORTS FROM INDIA – CHALLENGING TIMES AHEAD

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ABSTRACT

This case traces the growth and stagnation of the Indian shrimp exports. This case also talks about the various internal and external problems faced by the Indian shrimp industry in the last five years. The case throws light on the competitive scenario of the Asian shrimp exporting countries. The key focus of the case is on International Trade Environment and how a country can face a competition as well as other hurdles on other fronts. The Teaching Note of the case study is added in the case guide.

Keywords: Shrimp, Exports, India, International Trade, Competition.

SHRIMP EXPORTS FROM INDIA – CHALLENGING TIMES AHEAD

> *"On the heels of December 2004 tsunami, according to the most recently compiled statistics, U.S. shrimps imports from India dropped 57% in January and February compared to 2004. "*

Report in the U.S. based Consuming Industries Trade Action Coalition (CITAC) Shrimp Task Force.

> *"There has been a 30 per cent fall in shrimp catch from sea and almost 60 per cent fall in the second aquaculture crop. "*

Mr. Abraham Tharakan, President, Seafood Exporters Association of India (SEAI)

> *"India should also look at moving away from export of raw material, black frozen shrimp and look at value added products. "*

Mr. S. Santhanakrishnan, President, Society of Aquaculture Professionals, India

It is August 2006 and the Indian shrimp exporters are still waiting for a favourable verdict regarding the anti dumping duty imposed by U.S. which is around 10 %. The U.S. market used to account for 65 % of the total shrimp exports of India. The anti dumping duties have not only led to decrease of exports volume but a fall in the number of major exporters as well. In the last two years the number of major shrimp exporters to U.S. has fallen from over 30 to less than 15. Japan, which used to be the other hotspot for the Indian shrimp exporters, is experiencing a shift of preference of the type of shrimp consumed. India used to be the largest exporter of shrimps to Japan (in terms of quantity) in the period around 1999-2000, but has slipped to the third or fourth position in recent years. Other Asian countries such as Viet Nam, Indonesia, Thailand and China are giving a tough time to India in the global export markets. The December 2004 tsunami has had a devastating effect on parts of the east coast of India and aquaculture as a whole. Added to all these, the problems for the Indian shrimp industry have been further aggravated by numerous internal issues such as inappropriate cultivation methods, insufficiency of funds, improper disease management, etc. The Indian shrimp industry, which is one of the oldest in the country and which used to be one of the largest in the world, is trying to find out answers and solutions.

HISTORY OF AQUACULTURE IN INDIA

Aquaculture is defined by FAO as,

> *"the farming of aquatic organisms, fish, molluscs, crustaceans, aquatic plants, crocodiles, alligators, turtle and amphibians "*

Here the word farming implies any specific form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protecting from predators, etc. Farming also means that the cultivated stock has individual or corporate ownerships. The difference between capture and aquaculture lies in the ownership. In case of

aquaculture the aquatic organisms are harvested and reared by an identifiable owner throughout the rearing period, whereas in case of capture fisheries, the aquatic organisms are exploited by the public as a common property resource. Shrimp production in India dates back to 500 B.C. The first written evidence of aquaculture in India can be found in Kautilya's 'Arthashastra'. When the inhabitants started to use the paddy fields and low lying areas for cultivation, the trapped water of tidal waves or monsoon brought in natural seeds of fin and shell fish which got trapped when the water receded. This led to the activity of "trapping and holding" fish seeds and that marked the birth of aquaculture in India. Aquaculture was supported by the construction of ponds, which, however were used for various other purposes. After the independence in 1947, the focus of sustainability had aquaculture as a part of it. Institutes such as Central Inland Fisheries Research Institute (CIFRI) and Central Marine Fisheries Research Institute (CMFRI) were set up for research in inland and marine resources respectively. The initial focus was on development of carps, popularly known as composite fish culture. Upon emphasis from the Indian Council of Agricultural Research (ICAR), CIFRI established the Fresh water Aquaculture Research and Training Centre (FARTC) in 1977 at Bhubaneswar. The Trainers Training Centre (TTC) and Krishi Vigyan Kendra (KVK) were also established at the same time. In the 1980's FAO/ UNDP provided support to ICAR for intensifying fish culture, research and training. The ICAR granted a full fledged institution status to FARTC in 1986 and it was renamed as Central Institute of Freshwater Aquaculture (CIFA) to meet up to the emerging opportunities of the aquaculture sector. CIFRI initiated research projects on brackish water aquaculture in the early seventies. This led to the development of brackish water aquaculture where a major emphasis was on shrimp farming. Later on the ICAR established the Central Institute for Brackish water Aquaculture (CIBA) to contribute to shrimp farming.

THE CURRENT STATE OF SHRIMP FARMING IN INDIA

India is an environmentally diverse country. It boasts a coastline of 8118 km and a combined river and canal length of 195210 Km (Refer to Exhibit I and II). Along with it, the country has a considerable amount of water bodies (Refer to Exhibit II). But if we look at the fish production potential of India we will find that it is performing below the mark (Refer to Exhibit I). A similar thing was pointed out by Kutty (1999) who found out that biodiversity utilization of India was below that of its South East Asian Counterparts. India is presently the second largest producer of shrimps and prawns in the world after China. The shrimps and prawns are mostly grown through Brackish-water culture. (Refer to Exhibit III for the Life Cycle of Shrimps) In brackish water, the salinity of the water should lie between 0.5% to full strength seawater. This culture can be practiced in water bodies such as estuaries, coves, bays lagoons and fjords. The large coastline of India helps immensely in brackish water aquaculture. Even though there is considerable amount of shrimp production in India, if we look at the contribution of the different states we will find that all the states are not having the same productivity level even in similar natural conditions. (Refer to Exhibit IV) For example, the suitable area for shrimp production in West Bengal is much more than that of Kerala whereas the production yield in Kerala is much more than that of West Bengal.

GOVERNMENT INITIATIVES TO FOSTER AQUACULTURE

The fisheries sector was viewed by the Government as an important source of earning livelihood, foreign exchange and food supply. The sector grew at a compound rate of about 7% during the seventies and picked up in the eighties. The Marine Products Export Development Authority (MPEDA) was constituted in 1972 by the Ministry of Commerce of the Government of India under the Marine Products Export Development Authority Act 1972 (No.13 of 1972). The objectives with which it was established was to enhance fisheries export with a holistic perspective. The role of the MPEDA was to look into increasing exports, specifying quality standards, processing of the fish produces, marketing, extension and training in various aspects of the industry covering fisheries of all kinds. In 1975, the Food and Agriculture Organization of the United Nations (FAO) organized a three week long conference in Bangkok where Asian countries discussed on issues related to aquaculture development and formulated a ten year Aquaculture Development Plan (1975-1985). This initiated India to formulate a plan exclusively

for them. The Plan had short term, medium term and long term objectives.

Short Term Objectives:

Among the short term objectives were

- Reaching reasonable production levels with the available technology and through substantial development of aquaculture.
- Immediate focus to be given on cultivable fish seed production and rearing in selected areas in each state.
- Training and resources to be provided to create efficient fish farmers all over India.
- Appropriate leasing and finance facilities to be made available to the farmers.
- Basic infrastructure for brackish water aquaculture to be provided through development of hatcheries for organized seed production.

Medium Term Objectives:

Among the medium term objectives were

- Adoption of state of the art technology of fish production in selected areas.
- Major emphasis to be given to shrimp and brackish water fish culture.
- Establishing fish seed farms in each district.
- Development of culture of frogs, molluscs, sea weeds etc.
- Development of running water carp and catfish culture.
- Research initiatives on reproductive physiology and nutrition of fishes.
- Development of cold water aquaculture and non conventional species of fish, molluscs and crustaceans.

Long Term Objectives:

Among the long term objectives were

- Establishing an effective mechanism through which aquaculture technology could be disseminated for fish production in small water bodies.
- Adopting an integrated approach to development technology, manpower training and input provision.
- Ensuring smooth flow of finance for aquaculture.

However, in 1985, it was found out that the carps had come close to the plan projections but the brackish water fish and shrimps could not perform up to the projections. Brackish-water aquaculture got a boost in the mid eighties because of the growing export market. Besides government support, the World Bank has funded several projects on shrimp and fish culture in certain states in India. Three institutions under ICAR i.e. CIFA, CIBA and CICFRI are involved in the World Bank funded projects.

THE CHANGING SCENARIO

Up to the mid 1980's, India was the world leader in shrimp exports both in terms of export quantity and value. The major markets of India were Japan, U.S and the European Union (EU). However, the other South East Asian countries realized the huge potential of the global shrimp market and started to enter as producers and exporters. (Refer to Exhibits VI, VII, VIII) Thailand was one of the major players in the period between mid 1980's to the mid 1990's. The high demand in the overseas shrimp market led to the development of shrimp culture along the coastal areas in Thailand at a rapid pace in around 1987. However, in the last five years, the presence of Thailand in the global shrimp market has somewhat come down. This primarily happened because Thailand had shifted the focus from shrimps and had diversified into different fishes. The other large player which was emerging at the same time was China. Right from the mid 1980's China has remained the global leader in shrimp production and has experienced explosive growth in the last five years. Though China still remains the largest shrimp producer in the world, a major portion of the production is used up in domestic consumption. Indonesia also started around 1980, where the development of shrimp culture was fostered by the joint efforts of the government and private sector. Viet Nam, which emerged in the export market in the late 1990's displayed a steady and healthy growth rate of both production and exports and went on to become the largest exporter of shrimps in terms of export value share among its Asian counterparts.

Both Indonesia and Viet Nam did well in the latter half of 1990 and were able to establish themselves in the Japanese and U.S. markets. There were some other small players who need mention here which are Philippines, Malaysia, Bangladesh and Pakistan. In the 1980's the import price of the shrimps was mostly determined by the supply in the market. In the late 1990's the focus shifted from supply to quality. That is where Thailand and Viet Nam gained an upper hand over India. Besides this, different species of shrimps and prawns were differently priced. India was more dependent upon the presently low priced Tiger Prawns (Penaeus monodon) whereas Viet Nam, Thailand and China produce White Shrimp (Penaeus vannamei) (Refer to Exhibit V).

THE ANTI-DUMPING ALLEGATION AND THE TSUNAMI

In spite of increasing competition, India was performing well in the global shrimp export market. Though it somewhat lost its leadership position in the Japanese market, it was still among the top two or three importers of Japan. The U.S. market, which surpassed Japan as the largest importer of shrimps in the late 1990's, was still a big market for India. Majority of the Indian shrimp exports were to the U.S. However, trouble started around early 2002 when there were allegations against India as well as other countries of dumping shrimp in the U.S. market. On October 22, 2002, the Southern Shrimp Alliance (SSA) was formed by the representatives of the shrimp industry located in the eight states of Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina and Texas. The protest culminated in an anti-dumping petition which was filed by the Ad Hoc Shrimp Trade Action Committee (ASTAC) of the SSA on December 31, 2003. The six countries against whom the petition was filed were Brazil, China, Ecuador, India, Thailand and Viet Nam. Ultimately, on February 17, 2004, the International Trade Commission (ITC) announced its decision in favour of U.S. and imposed duties ranging from 3.56 % to 27.49 % on all varieties of shrimp products. This was a big jolt to India who, till now, had the U.S. as a large buyer of the shrimp export basket. But even before India could recover, a major part of the East coast of India, which used to contribute a significant amount in the aquaculture of the country was devastated by the December 2004 tsunami. Other than these external problems, the Indian shrimp industry was facing a host of issues in the home front.

INTERNAL PROBLEMS

The production technology used for shrimp production in India was still based on age old forms of technology and good management practices were not being employed in a large scale. This in turn led to environmental degradation and increased susceptibility to disease outbreaks. Disease Management posed a big challenge for the India shrimp farmers. Various reasons led to disease outbreaks, some of which were:

- Purchase of low priced, poor quality seeds.
- Sporadic incidents of implementation of best practices, whereas there was a need for country wide up-gradation of practices.
- Lack of proper training facilities for the farmers who were not well equipped with the do's and don'ts of disease management.

Funding posed another major issue for the Indian farmers. Majority of shrimp cultivation took place in rural areas where adequate funding facilities for the farmers were absent. Most of the loans were provided by the local lenders where the interest rate used to go up to 36.5 % per annum. Though nationalized banks specialized in rural credit such as the National Bank for Rural and Agricultural Development (NABARD) and the Regional Rural Banks (RRB) have tried to provide loan facilities in the rural, the initiatives have fallen far less of the demand. Costs are another important issue. Most of the shrimp farmers use diesel-fuelled pumps for performing water exchange. The increase in the cost of fuel, which is taking place due to the substantial increase in oil price in the recent years, has led to increase in the cost of production. In such a scenario, the only solution is large scale electrification of the farms, which could offset the increase in prices. However that is again difficult for the farmers themselves because of lack of funds.

The unsustainable patterns of shrimp production have led to severe environmental degradation in various areas in India. The wild shrimp cultivation in the estuaries and rivers of India is led to loss of other species of fish. Besides this, shrimp cultivation has contributed to huge loss of mangrove vegetation in India. In Andhra Pradesh

alone, there had been a loss of 8,000 ha of land followed by West Bengal with a loss of 5,000 ha. Besides this, shrimp cultivation in paddy and other crop fields have rendered them useless for further cultivation of food grains. Lastly, shrimp farming is still practiced in India in an unorganized form. There were considerable lack of coordination and cooperation among the farmers, which in turn led to disease outbreak and environmental problems. Though, in this regard the Aquaclubs have helped in providing remedies to a lot of the issues.

THE WAY OUT

The government as well as the private sector is trying to cope up with the problems in their own ways. The government institutions under ICAR have been doing research to provide solutions to various issues. A considerable number of courses are now being offered in the central institutions on fisheries management to impart scientific knowledge on aquaculture. One of the important private initiatives that have been gaining importance is the Aquaclubs (Refer to Exhibit IX). An Aquaclub is formed by a group of farmers whose farms are closely situated together in a cluster or locality of a village. The club provides a mechanism for farmers to organize themselves in planning and managing their crop activities and to solve their local problems. Regarding the external issue, most of the experts feel that overdependence on shrimp has badly hurt Indian aquaculture exports. According to Mr S. Santhanakrishnan, President, Society of Aquaculture Professionals, India needed to look into value added products rather than export of raw shrimp, as quoted early in the case. Value added products such as such as breaded shrimp; ready-to-cook, ready-to-eat and ready-to-fry products do not attract duty. But moving away from raw shrimp to value added products is a capital intensive activity and given the fragmented nature of Indian shrimp farmers, this seems to be a difficult job. Big companies such as Hindustan Lever Limited (HLL) have geared up to face the challenge. According to Mr. Salim David, General Manager, HLL, "From a predominantly frozen and cooked shrimp exporter with little value addition, Hindustan Lever Ltd has geared up to meet the fresh challenges and is concentrating on the breaded and other value-added segments in shrimp exports". The other advantage India would have in producing value added shrimp products would be in the labour cost which is almost eight to ten times lower than its European or US counterparts. There is a big market in the U.S. for packaged and branded shrimp products and there is an opportunity for the major international brands to go for outsourcing from India as well.

LOOKING FORWARD

At this point it can only be inferred that the Indian shrimp in India is presently in a very delicate state as there are problems in various fronts. Though there are some movements in the right directions such as the formation of the aquaclubs, it is too early to comment on it. The lack of spread has been a major hurdle for India. India was over dependent on the Japanese and U.S markets and currently it is in a bad position in both the markets. As according to Mr. Abraham Tharakan (Tharakan), President, Seafood Exporters Association of India (SEAI), India should now look into other markets and have a diversified approach. Diversification has brought some fruits as the Indian live crabs have already started to create a big market in the South East Asian countries such as Singapore, Taiwan and Indonesia. In the 2004-05 fiscal the net exports of live crabs totaled a figure of 1,749 tonnes which was almost a 10 % increase over the previous year. Thus diversifying into aquaculture products other than shrimp needed to be done. Lastly, the government and the private sector should work in tandem to facilitate trade and create an environment which facilitates proper flow of knowledge, funds and know-how. But all these activities need time and have an element of uncertainty. The future of the Indian shrimp can be summarized in the quote of Mr. Tharakan.

> *"…it will be a long drawn-out process. It is not easy to establish your presence."*

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EXHIBIT I

FIGURES AT A GLANCE

1. Area of the country — 3.29 million sq. km.
2. Length of Coastline — 8118 kms
3. Exclusive Economic Zone — 2.02 million sq. km.
4. Continental shelf area (approx.) — 0.53 million sq. km.
5. Fish Production and potential (million tonnes)

	Marine	Inland	Total
a) Fish Production 2004-05	2.78	3.52	6.30
b) Production potential (Est.)	3.90	4.5	8.4

6. Export of fisheries products, 2004-05
   a) Quantity (000 Tonnes) — 437.00
   b) Value (Rs crores) — 6188.92
7. Contribution of fisheries to Gross Domestic Product (GDP), 2003-04 at current prices
   a) GDP from fisheries — Rs. 29,707 crore
   b) Contribution of fisheries sector to
      i. Total GDP — 1.04 per cent
      ii. GDP from Agriculture sector — 5.34 per cent
9. Fishermen population (as per Livestock Census, 2003)
   a) No. of family members
      i. Total — 14,485,354
      ii. Males — 4,696,158
      iii. Females — 4,033,963
      iv. Children — 5,755,233
   b) Engaged in fishing operations
      i. Full time — 933,124
      ii. Part time — 1,072,079
   c) Engaged in fishing related activities other than actual fishing
      i. Marketing of fish — 391,000
      ii. Repair of fishing nets — 245,100
      iii. Processing of fish — 46,200
      iv. Other activities — 334,700

Source: Handbook of Fisheries Statistics, Collected from http://dahd.nic.in/rtia2005/Hand%20Book%202004%20-%2011.07.05/abstracts.htm

Source: Handbook of Fisheries Statistics, Collected from http://dahd.nic.in/rtia2005/Hand%20Book%202004%20-%2011.07.05/abstracts.htm

EXHIBIT II

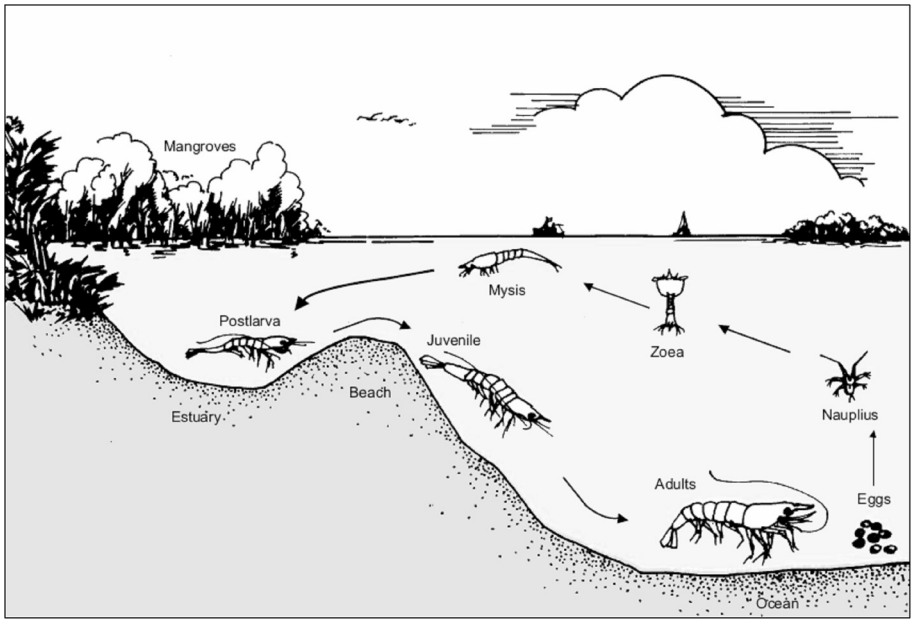
INLAND FISHERY RESOURCES BY STATES AND UNION TERRITORIES (2005)

Sl.No.	State/Union Territory	Rivers & Canals	Reservoirs	Tanks & Ponds	Floodplain Lakes & Derelict Water	Brackish Water	Total Water Bodies
		(Kms.)	(Lakh[1] Ha)	(Lakh Ha)	(Lakh Ha)	(Lakh Ha)	(Lakh Ha)
1	Andhra Pradesh	11514	2.34	5.17	-	0.60	8.11
2	Arunachal Pradesh	2000	-	2.76	0.42	-	3.18
3	Assam	4820	0.02	0.23	1.10	-	1.35
4	Bihar	3200	0.60	0.95	0.05	-	1.60
5	Goa	250	0.03	0.03	-	Neg.	0.06
6	Gujarat	3865	2.43	0.71	0.12	1.00	4.26
7	Haryana	5000	Neg.	0.10	0.10	-	0.20
8	Himachal Pradesh	3000	0.42	0.01	-	-	0.43
9	Jammu & Kashmir	27781	0.07	0.17	0.06	-	0.30
10	Karnataka	9000	4.40	2.90	-	0.10	7.40
11	Kerala	3092	0.30	0.30	2.43	2.40	5.43
12	Madhya Pradesh	17088	2.27	0.60	-	-	2.87
13	Maharashtra	16000	2.79	0.59	-	0.10	3.48
14	Manipur	3360	0.01	0.05	0.04	-	0.10
15	Meghalaya	5600	0.08	0.02	Neg	-	0.10
16	Mizoram	1395	-	0.02	-	-	0.02
17	Nagaland	1600	0.17	0.50	Neg	-	0.67
18	Orissa	4500	2.56	1.14	1.80	4.30	9.80
19	Punjab	15270	Neg	0.07	-	-	0.07
20	Rajasthan	5290	1.20	1.80	-	-	3.00
21	Sikkim	900	-	-	0.03	-	0.03
22	Tamil Nadu	7420	5.70	0.56	0.07	0.60	6.93
23	Tripura	1200	0.05	0.13	-	-	0.18
24	Uttar Pradesh	28500	1.38	1.61	1.33	-	4.32
25	West Bengal	2526	0.17	2.76	0.42	2.10	5.45
26	A and N Islands	115	0.01	0.03	-	1.20	1.24
27	Chandigarh	2	-	Neg	Neg	-	0.00
28	Dadra and Nagar Haveli	54	0.05	-	-	-	0.05
29	Daman and Diu	12	-	Neg.	-	Neg.	0.00
30	Delhi	150	0.04	-	-	-	0.04
31	Lakshadweep	-	-	-	-	-	0.00
32	Pondicherry	247	-	Neg	0.01	Neg.	0.01
33	Chhattisgarh	3573	0.84	0.63	-	-	1.47
34	Uttaranchal	2686	0.20	0.01	0.00	-	0.21
35	Jharkhand	4200	0.94	0.29	-	-	1.23
	Total	**195210**	**29.07**	**24.14**	**7.98**	**12.40**	**73.59**

Source: Handbook of Fisheries Statistics, Collected from http://dahd.nic.in/rtia2005/Hand%20Book%202004%20 %2011.07.05/abstracts.htm

EXHIBIT III

LIFE CYCLE OF PENAEID PRAWN



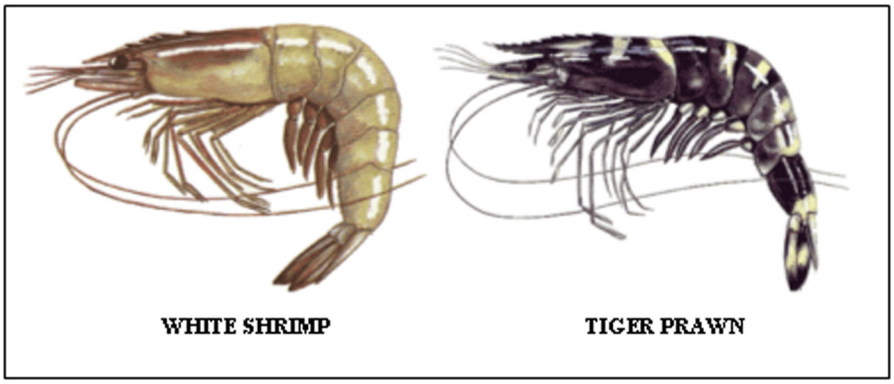
Source: http://aquaculture.tn.nic.in/pdf/farming.pdf

EXHIBIT IV

STATE-WISE COMPARISON OF SHRIMP FARMING IN INDIA

EXHIBIT V

THE TWO MAIN VARIETIES OF SHRIMP



Source: http://www.maritime.co.za/products.html

EXHIBIT VI SHRIMP PRODUCTION FIGURES (In Metric Tonnes)

Year	Bangladesh	China	India	Indonesia	Malaysia	Pakistan	Philippines	Thailand	Viet Nam	Total
1976	3,760	125,054	197,844	122,088	58,335	22,274	57,017	110,801	41,900	741049
1977	4,230	196,938	232,694	149,914	64,230	20,515	41,894	137,519	40,200	890111
1978	4,760	246,022	186,682	153,858	82,133	19,399	32,537	143,141	39,200	909710
1979	5,360	162,752	183,159	158,293	85,663	24,217	32,233	130,663	40,400	824719
1980	6,030	184,182	250,314	140,683	83,902	25,943	34,254	133,312	41,200	901800
1981	6,780	187,283	164,165	145,180	94,521	30,000	42,439	148,266	41,500	862115
1982	7,630	189,028	209,678	135,290	79,038	26,542	55,370	187,460	42,800	934818
1983	8,000	220,492	192,897	142,302	83,218	27,502	48,848	160,287	49,100	934629
1984	8,219	249,482	213,186	136,969	85,877	28,436	65,674	136,211	47,000	973038
1985	11,282	366,957	245,489	149,164	89,743	26,685	79,272	126,290	50,000	1146867
1986	14,658	426,595	229,324	162,995	100,417	26,842	91,138	139,472	45,476	1238903
1987	14,773	457,696	212,171	195,102	84,112	29,854	78,886	149,822	48,651	1273054
1988	16,577	583,825	216,394	236,836	106,843	29,447	86,497	164,522	68,609	1511538
1989	18,235	502,355	226,119	247,884	109,620	23,492	91,117	203,130	61,146	1485087
1990	18,624	532,154	251,041	257,953	106,732	27,921	95,931	224,357	65,264	1581967
1991	19,555	564,132	304,974	290,168	104,724	32,060	93,756	289,862	82,299	1783521
1992	21,000	574,140	297,163	311,105	129,368	26,328	127,543	300,565	87,224	1876428
1993	28,525	488,653	352,760	300,698	109,755	34,920	131,461	343,094	95,572	1887431
1994	28,763	603,370	438,333	319,736	106,403	29,164	130,223	385,690	112,169	2155845
1995	32,434	665,577	378,599	332,478	99,565	25,623	131,678	390,426	138,574	2196949
1996	42,038	751,776	390,819	343,137	107,986	27,772	117,705	371,720	133,295	2288244
1997	47,738	829,612	367,889	382,006	100,959	29,638	78,076	350,723	144,629	2333267
1998	56,416	970,941	417,026	345,548	57,066	26,204	74,002	345,380	146,510	2441091
1999	57,770	1,222,737	430,767	384,472	102,662	25,692	80,225	359,598	147,408	2813330
2000	59,143	1,241,871	440,575	390,937	111,870	25,130	83,120	394,487	186,689	2935822
2001	55,499	1,213,265	431,871	415,436	104,482	24,936	90,788	365,122	244,261	2947661
2002	56,020	1,295,979	515,748	401,935	101,602	22,532	80,865	345,920	275,639	3098242
2003	56,503	2,241,363	530,279	431,891	99,377	24,411	83,406	409,807	334,556	4213596
2004	58,044	2,417,375	554,626	490,347	109,541	24,774	84,079	471,282	382,638	4594710

Source: FAO Datasets in FISHSTAT PLUS

EXHIBIT VII EXPORT QUANTITY (In Metric Tonnes)

Year	Bangladesh	China	India	Indonesia	Malaysia	Pakistan	Philippines	Thailand	Viet Nam	TOTAL
1976	3,825	.	47,952	29,089	22,735	4,836	2,469	15,217	.	126,123
1977	2,707	.	47,239	29,582	14,427	4,450	2,549	13,663	.	114,617
1978	2,163	.	51,223	30,539	15,723	4,229	3,200	15,378	.	122,455
1979	4,131	.	53,511	33,739	22,087	5,497	3,829	18,626	.	141,420
1980	8,564	.	47,762	30,471	11,175	6,721	2,569	17,915	.	125,177
1981	6,757	.	54,538	23,604	6,015	8,964	2,716	18,761	.	121,355
1982	8,028	.	54,625	24,583	6,076	12,595	3,938	22,647	.	132,492
1983	11,430	.	53,603	24,241	2,802	12,056	4,743	20,150	8,495	137,520
1984	14,563	13,500	55,194	26,171	6,418	15,328	6,438	19,428	11,647	168,687
1985	22,255	10,000	49,540	27,798	5,458	14,571	8,105	24,041	16,158	177,926
1986	17,448	32,000	52,131	33,931	7,096	14,063	11,211	28,717	19,062	215,659
1987	20,113	60,665	51,629	40,794	8,567	18,382	14,935	53,911	21,861	290,857
1988	20,017	102,495	55,973	53,002	9,392	18,634	23,536	42,841	30,507	356,397
1989	20,585	92,969	61,746	67,568	10,532	13,704	26,052	68,510	21,555	383,221
1990	25,996	115,962	61,896	85,315	11,687	14,134	24,146	79,983	30,057	449,176
1991	22,203	82,829	83,409	85,180	13,994	15,926	29,607	115,714	40,942	489,804
1992	23,849	90,097	78,409	82,265	13,507	15,640	23,003	134,324	48,356	509,450
1993	25,191	64,461	96,130	85,232	11,460	14,851	22,206	141,709	55,430	516,670
1994	31,314	60,898	110,459	83,788	12,927	15,535	21,676	178,545	63,095	578,237
1995	27,741	47,052	98,456	76,565	14,590	14,868	17,826	165,661	37,722	500,481
1996	27,579	35,071	110,681	79,589	14,864	15,558	21,776	151,974	36,790	493,882
1997	31,425	43,065	110,605	77,642	16,622	17,721	10,139	128,066	65,688	500,973
1998	22,875	38,684	118,073	123,888	12,803	20,843	17,559	147,379	64,976	567,080
1999	20,127	49,559	124,515	84,035	11,074	13,108	10,807	127,230	61,334	501,789
2000	28,514	67,359	128,198	97,555	12,586	14,580	18,834	136,182	66,704	570,512
2001	33,441	66,990	138,836	108,744	12,327	14,638	18,289	134,944	87,151	615,360
2002	29,214	61,769	166,258	104,945	21,559	13,588	13,621	92,884	114,580	618,418
2003	30,167	92,459	158,768	115,857	17,530	9,902	14,731	113,369	124,780	677,563
2004	36,180	90,584	140,474	114,059	42,521	10,782	11,796	116,774	141,122	704,292

Source: FAO Datasets in FISHSTAT PLUS

EXHIBIT VIII EXPORT VALUE (In USD '000)

Year	Bangladesh	China	India	Indonesia	Malaysia	Pakistan	Philippines	Thailand	Viet Nam	TOTAL
1976	11,701	.	179,928	114,814	68,800	26,656	14,413	66,047	.	482,359
1977	14,141	.	178,091	138,036	50,689	24,277	16,608	57,426	.	479,268
1978	10,348	.	218,459	155,602	61,706	25,297	23,836	73,783	.	569,031
1979	26,951	.	274,447	198,428	103,464	39,882	35,750	116,146	.	795,068
1980	38,320	.	233,260	177,894	55,076	33,369	20,681	95,783	.	654,383
1981	35,953	.	287,733	156,460	35,945	52,411	22,773	98,133	.	689,408
1982	44,583	.	318,468	177,434	41,639	69,524	32,735	120,152	.	804,535
1983	62,491	.	307,436	185,499	20,433	58,623	36,076	137,584	33,290	841,432
1984	69,199	95,719	289,264	190,782	38,993	65,043	34,801	118,779	48,540	951,120
1985	78,045	66,916	254,468	193,348	34,294	61,570	62,523	126,689	58,336	936,189
1986	98,955	226,794	300,826	280,273	44,983	73,820	103,828	167,023	72,463	1,368,965
1987	125,084	368,801	309,107	342,139	56,794	93,180	154,596	223,426	112,106	1,785,233
1988	141,369	579,682	332,242	485,662	68,720	89,611	249,590	345,605	142,887	2,435,368
1989	146,448	529,063	300,828	515,471	65,932	61,220	231,214	601,687	74,026	2,525,889
1990	151,079	695,953	346,436	643,928	74,246	59,953	218,729	781,496	112,273	3,084,093
1991	140,112	504,721	460,694	715,909	96,965	78,023	269,459	1,026,421	171,830	3,464,134
1992	140,591	550,081	454,126	687,791	91,758	59,717	207,919	1,224,961	209,000	3,625,944
1993	182,036	370,249	594,857	789,006	81,057	57,034	221,722	1,466,255	265,300	4,027,516
1994	268,461	351,956	802,055	889,408	100,998	76,465	240,904	1,916,485	314,330	4,961,062
1995	279,145	297,706	682,045	875,352	120,402	82,092	214,829	1,974,219	254,938	4,780,728
1996	281,744	174,351	721,014	838,760	108,196	72,404	149,097	1,669,280	226,419	4,241,265
1997	246,936	219,185	796,407	864,112	130,547	105,379	125,493	1,527,927	389,656	4,405,642
1998	245,183	188,851	751,565	837,375	73,091	81,074	128,505	1,388,212	449,003	4,142,859
1999	236,635	210,271	771,514	740,565	68,390	66,193	125,683	1,238,546	482,302	3,940,099
2000	309,436	310,325	896,561	931,018	80,959	77,896	141,249	1,474,232	654,215	4,875,891
2001	332,255	280,640	798,986	879,318	74,533	59,433	117,767	1,198,050	777,820	4,518,802
2002	272,345	272,717	889,080	784,392	143,465	53,639	119,127	774,078	949,418	4,258,261
2003	290,472	405,623	825,470	785,856	91,884	40,819	99,584	840,913	1,057,863	4,438,484
2004	348,386	410,456	734,481	770,317	243,882	40,744	91,010	781,633	1,268,039	4,688,948

Source: FAO Datasets in FISHSTAT PLUS

EXHIBIT IX

A NOTE ON AQUACLUBS

What is an Aquaclub?

An Aquaclub is formed by a group of farmers whose farms are closely situated together in a cluster or locality of a village. The club provides a mechanism for farmers to organize themselves in planning and managing their crop activities and to solve their local problems.

Benefits from Aquaclub formation

The main benefits farmers experience from Aquaclubs are:

i) Regular sharing of knowledge and awareness of Better Management Practices among farmers.

ii) Proper advanced planning of crops by group, which is a basic requirement for a high rate of success and sustainable yields.

iii) A collective approach to tackling common problems, including local environment protection.

iv) Cooperation in starting the crop at one time thus avoiding continuous stockings and harvests.

v) Cooperation in selecting/testing and buying seeds at competitive prices, which can include establishment of a contract hatchery seed production system.

vi) Cooperation in 'on-farm' common nursery management thus assuring better quality seeds to the smallest farmers.

ix) Cooperation during water supply and draining especially during disease outbreak period to reduce risks of disease spread.

x) Ability to easily implement new market requirements across the club at short notice. For example, farm management record keeping in all the ponds and even in hatcheries for traceability systems.

xi) Government support can be more easily attracted.

xii) Stronger collective bargaining power to Aquaclub farmers to purchase farm inputs (feed, lime etc) and to sell the shrimps.

xiii) Networking of Aquaclubs in a district or state can help farmers to start their own branded shrimps to gain customer loyalty.

Source: Padiyar, Arun, "Aquaclubs: The way forward for village level shrimp health & quality." Collected from http://www.enaca.org/modules/news/index.php?PHPSESSID=14200b890b6c1db774c2bdf99f4f25e5&storytopic=2&storynum=15

SHRIMP EXPORTS FROM INDIA – CHALLENGING TIMES AHEAD TEACHING NOTE

ABSTRACT AND KEY POINTS

This case traces the growth and stagnation of the Indian shrimp exports. This case also talks about the various internal and external problems faced by the Indian shrimp industry in the last five years. The case throws light on the competitive scenario of the Asian shrimp exporting countries. The key focus of the case is on International Marketing Environment and how a country can face a competition as well as other hurdles on other fronts.

POTENTIAL TARGET AUDIENCE

Ideally this case could be a part of the International Business/Marketing course in a Graduate Program in Business Management. This case could be taken as a part of International Marketing and Trading Environment in the specialization courses of the same program. In case of an Executive Education Program, this case can be used to facilitate issues in International Marketing and Competition.

BASIC ISSUES

The audience of the case is supposed to get idea on the following concepts after reading the case:

1. Understand how a country can be successful in the international business and trade.

2. Examine the role of internal policies and structure for strengthening and enhancing foreign trade.

3. Highlight on the issue of International competition and how a country can fall into trouble and loose its market.

4. Understand why a country needs to change its trade practices to cope up with the challenges in the international market place.

5. Examine the effect of trade barriers in international trade.

DISCUSSION QUESTIONS

The moderator can initiate a discussion by asking any/all of the following questions:

- What do you think are the main reasons that led to the decline of Indian shrimp exports in the new millennium?

- What was the role of the internal policies and the production structure in aggravating the already troubled shrimp exports of India?

- How far do you think that the competition from the other Asian countries have affected Indian shrimp exports?

- Was the anti dumping duty imposed on the Indian shrimp exports justified?

- How should India try to cope up with the current crisis?

TEACHING APPROACH AND SESSION PLAN

The case can be handled in the class in two ways:

i. Case Discussion in Groups.

ii. Role playing.

In both cases students will be given the case in advance and will be supposed to come prepared in the class.

i. Case Discussion in Groups:

In this approach the moderator should divide the class into groups with 3-5 members depending on the batch strength. Then he should provide the triggers which will lead the students to discuss the case in a structured. In this case, the discussion questions mentioned above can be used. The groups will be given some time to gather their thoughts and will be asked to give presentations of the case which will include:

• The Key issue/s.

• The subsequent issues.

• The learning from the Case.

• Their own suggestions about solutions of the key issues.

ii. Role Playing:

In the second method, the moderator would take some 15 students of the class and form 3 groups consisting of five students in each group. Each group will play the role of separate entities. One group will represent the Government of India (i.e. the policy makers), the second group will represent the Shrimp Producers and the last group will represent the Competitors. The groups would be asked to devise policies and action plans, which they think to be ideal given the context of the case. The groups should also discuss about the present stance of the shrimp export market and where they think the market to be heading. The role-playing will be iterated for some rounds and then the groups can evaluate each others as well as the students can evaluate the action plans suggested by the groups. This method can be particularly useful in Executive Education Programs.

Session Plan

(i) Case Discussion:

0-5 mins Brief Introduction

5-20 mins Gathering of Ideas

20-75 mins Presentation by the group representative

75-90 mins Gathering of relevant information & conclusion

(ii) Role Playing:

0-10 mins Introduction & Idea about Role Playing

10-15 mins Group formation & general discussion

15-60 mins Role playing Session

60-75 mins Feedback from rest of the Class and new ideas (if there are any)

75-90 mins Wrap up & conclusion

ASSIGNMENT QUESTIONS

The following questions could be given to the students as part of home assignments .

1. Elaborate on the reasons which have led to the decline of the Indian shrimp exports in the period from 2000-2004.

2. Using Exhibits VI, VII and VIII, perform a comparative analysis of the Indian shrimp exports vis-à-vis the other Asian countries.

3. Looking into the global shrimp exports industry from an overall perspective analyze the industry facets using 'Michael Porter's Five Forces Model'.

4. Use Igor Ansoff's 'Product Market Growth Strategy Matrix'; analyze the possible strategies available for the Indian aquaculture products.

ANSWERS TO ASSIGNMENT QUESTIONS

A suggested pattern of answers to the written assignment questions are given below. The students may be given the flexibility in arranging the relevant points to be covered in their own way.

Answer to Assignment Question 1

There are various reasons which have led to the fall of Indian shrimp exports in the last four or five years. There are internal as well as external reasons behind this. The internal reasons are concerned with the production pattern, disease management, quality issues, finance facilities, etc. The external reasons are concerned with competition from other countries, shift of taste and preferences, anti dumping issues, etc.

Internal Problems

Indian shrimp industry is suffering from a host of internal problems such as:

Production Pattern: The production technology used for shrimp production in India is still based on old forms of technology and good management practices are not being employed in a large scale. This in turn leads to environmental degradation and causes hindrance to disease outbreaks.

Disease Management: Disease Management is still a big challenge for the India shrimp farmers. There are a lot of reasons which lead to disease outbreaks, such as purchase of low quality seeds, improper training etc.

Lack of Appropriate Financing Facilities: Majority of shrimp cultivation takes place in rural areas where adequate funding facilities for the farmers are absent. Government loan initiatives have fallen far less of the demand.

Increasing Cost of Production: The increase in the cost of fuel, which is taking place due to the substantial increase in oil price in the recent years, has led to increase in the cost of production, which can only be offset with large scale electrification of the farms.

Environmental Degradation: The unsustainable patterns of shrimp production are leading to severe environmental degradation in various areas in India. Besides this, excessive nutrient loading is leading to self pollution of water bodies.

Lack of Proper Organization: Shrimp farming is still practiced in India in an unorganized form. There considerable lack of coordination and cooperation among the farmers, which in turn led to disease outbreak and environmental problems.

External Problems

The external problems mainly relate to the export performance of India compared to its competitors. The most important external issues are:

Competition: Till the late 1980's competition in the export market of shrimps was not that high and India used to enjoy a very good position. The 1990's have seen the entry of a lot of players in the international scenario and the competition has intensified. Added to that major shrimp producing countries such as China, Thailand and Viet Nam have shifted to production of white shrimp which gave a high yield at a low production cost.

Shift of Preferences: India primarily grows Tiger Prawns which used to be very popular in Japan and European Union. However of late, there has been a shit of preference of the Japanese from tiger prawns to white shrimps.

Anti Dumping Duties: India's exports to the U.S. have suffered setbacks due to the antidumping duties imposed by the U.S government on five countries including India.

Quality Restrictions: Of late, most of the importing countries are imposing stringent quality measures such as absence of chemical residues in shrimps, trace-ability of the whole production chain of the product right from stock to the final selling point. All these quality restrictions are proving to be difficult for Indian farmers to handle.

Answer to Assignment Question 2

In the last 30 odd years, the South East Asian countries have remained the leaders in aquaculture production and trade, to be specific in global shrimp exports. The largest importers of shrimp are Japan, U.S.A, The European Union and the Middle East countries. In the year 2004, China, India, Thailand, Viet Nam, Indonesia, Philippines, Bangladesh and Malaysia have together produced more than 80 % of the total global output of shrimps. Among them China was the clear leader with over 40 % share. India was second with above 10 % share. Because the production and exports of the South East Asian countries will affect the exports of India, a study of the production and exports of shrimp and prawns only of India would not have been sufficient to understand the scenario. Thus the study consisted of analysis of production and exports trends of nine Asian countries, namely, China, India, Viet Nam, Thailand, Indonesia, Malaysia, Bangladesh, Philippines and Pakistan.

Sample: The production and exports datasets provided in Exhibits VI, VII and VIII of the case have been considered as the sample for analysis.

Production Trend: It could be observed that from the mid 1980's China has remained the global leader in shrimp production and has experienced explosive growth in the last five years. On the other hand, production in India, Thailand and Indonesia has been stagnating since mid 1990's. Malaysia and Philippines have seen some fluctuating patterns. Viet Nam is experiencing a steady growth since the early 2000's.

Export Trend: The export trend is different from the production trend. With respect to export quantity, India has been experiencing a steady decline in the last four-five years while Viet Nam is having a rise. Presently, Viet Nam is the largest exporter of shrimp in the world. All the other countries have experienced major fluctuations in the last 30 years at some point of time or other. An interesting thing that can be noted here is that even though China is the largest producer of shrimps and prawns, it ranks fifth in terms of export quantity. It can also be observed that Thailand, the leading exporter in the 1990's has come down to third place in terms of export volume. This primarily happened because Thailand have shifted the focus from shrimps and have diversified into different fishes. Yet another different

picture came out in the analysis of the exports by value. India was the clear leader up to mid eighties. That is where other Asian countries started to take over. Thailand dominated the 1990's whereas Viet Nam emerged as the leader of the new millennium. India in the meantime had slipped to fourth position in terms of export values. In 2004, out of the nine selected countries, the export value share of Viet Nam was the highest with 27% share. This was followed by Thailand (16.7%), Indonesia (16.4%), India (15.7%) and China (8.8%).

A detailed analysis of the Compounded Annual Growth Rates (CAGR) of India and the other Asian countries was required to judge India's relative performance. All the 9 Asian countries were not selected in this part of the analysis. Other than India, four other countries i.e. China, Viet Nam, Thailand and Indonesia were selected since the combined production of these four countries and India command a share of more than 70 % of the global production. The time period from 1976-2004 was divided into three phases. Phase I is the period from 1976 to 1986. In this period, India was the leading nation in terms of production, export volume and export value. Phase II covers the period from 1987 to 1999. This period experienced the rise of China as the leader in production and Thailand as the leader in exports. Phase III is the period from 2000 to 2004. This period witnessed the decline in exports of India and the rise of Viet Nam in the world export market. All quantities are in metric tons and value in US$ 1000.

Phase I (1976-1986)

This is the phase where shrimp cultivation was at a nascent stage in most of the Asian countries. India however, was the leader in export volume and value and was well ahead of its present competitors.

Production: In terms of global production, this period witnessed a reasonable CAGR of 4.09 %. (Refer to Table 1) However, the CAGR of the Nine Asian Countries Taken Together (NATT) was more than that of the global figures and stood at 4.78 %. India (CAGR 1.35 %) was relatively lower compared to the global figures as well as the CAGR of the NATT. Viet Nam also had a low CAGR of 0.75 % whereas Thailand and Indonesia were at 2.11 % and 2.66 % respectively. China, however, recorded a healthy CAGR of 11.80 %.

Export Volume: In Phase I the CAGR of export volume of the NATT stood at 5 % whereas India had a poor growth of 0.76 %. (Refer to Table 2) Viet Nam, which started exporting Shrimp in 1983, registered a high CAGR of 22.39 %. Likewise China, which started exporting in 1984, had a high CAGR of 33.33 %. Thailand reported a modest figure of 5.94 % which was still higher than that of the NATT. Indonesia had a CAGR of 1.41 % only.

Export Value: Going by the value of exports, (in US$ 1000) the NATT registered a healthy CAGR of 9.95 % in this period. (Refer to Table 3) India was at a figure of 4.78 %. China and Viet Nam outperformed the others and witnessed CAGR's of 33.31 % and 21.46 % respectively. Thailand and Indonesia were close to each other with CAGR's of 8.80 % and 8.45 % respectively.

Phase II (1986-1999)

There was a lot of government support for shrimp production and export and India performed reasonably well in this period.

Production: In terms of production, the NATT (CAGR 6.29 %) again outperformed the world production (4.20 %). (Refer to Table 1) India had modest growth of 5.60 %. Viet Nam however was the leader with a CAGR of 8.90 %, followed by China (7.85 %), Thailand (6.97 %), India and Indonesia (5.36 %).

Export Volume: In terms of export volume, India had a healthy CAGR of 7.01 % which was only next to that of Viet Nam (8.26 %) and much higher than the NATT (4.28 %). (Refer to Table 2) Thailand (6.83 %) has improved marginally from its corresponding figures of Phase I (5.94 %). Indonesia registered a significant increase to 5.72 %. It is interesting to note that China, which had a CAGR of 33.33 % in Phase I, had a negative CAGR of –1.54 % in Phase II.

Export Value: Though Viet Nam had the highest CAGR in terms of export volume, it had a lower CAGR (11.8 %) than Thailand (14.08 %) in terms of export value. (Refer to Table 3) The prime reason behind this was the better quality provided by Thailand which helped it to command a higher price. India was placed after Thailand and Viet Nam with a CAGR of 7.29 %. Indonesia was close to India with 6.12 %. The CAGR of China (-4.23 %) reflected a similar picture as that of export volumes. The reason behind this may be the fact that the domestic consumption in China increased during this period.

Phase III (2000-2004)

Phase III came up with yet another set of CAGRs with the relative position of the countries changing once more.

Production: In terms of production, India again went down with a CAGR of 4.71 % compared to 9.37 % of the NATT and 7.31 % of the global production. (Refer to Table 1) Viet Nam emerged with the highest CAGR of 15.43 %. China recorded a CAGR of 14.25 %, which was almost twice that of the global production. Thailand registered a CAGR of 3.62 % but the reason behind that being the shift of focus from Shrimps to other varieties of fish.

Export Volume: In terms of export volume, India's CAGR fell to 1.85 % from that of 7.01 % in Phase II, and was much lower than that of the NATT (4.30 %). (Refer to Table 2) Viet Nam recorded a CAGR of 16.17 % which was almost four times that of the NATT. China recovered from its negative CAGR of Phase II to register 6.10 %. Indonesia had a CAGR of 3.18 % which was lower than the corresponding figures in Phase II. The negative CAGR of Thailand (-3.03%) can be justified on grounds of diversification, which took place in Indonesia as well.

Export Value: The CAGR of the export values of the NATT suffered a decline and stood at a negative value of -0.78 %. (Refer to Table 3) Only two out of the five selected countries i.e. Viet Nam (14.15 %) and China (5.75 %) registered a positive CAGR and Viet Nam's figure was impressive. India suffered from a negative CAGR of -3.91% and was close to Indonesia (-3.72 %). Though Thailand had a negative CAGR of -11.92 %, it is pretty obvious since Thailand has now shifted to other varieties of fish which are more profitable and where the competition is less.

Answer to Assignment Question 3

The "Five Forces Model" of Industry Analysis given by Michael Porter can be depicted as in Figure 1.

The assumption here is that the global shrimp export market is considered to be an industry and then each facet of Porter's model is analyzed in the context.

Threat of New Entrants: Because of the fact that some of the key elements which affect the threat of new entrants are essentially available to all countries such as resources, low switching costs, access to distribution, the threat of new entrants is high. In the last decade some of the Latin American countries such as Brazil have done pretty well in the U.S. market. Similarly, Middle Eastern countries have done well in the European Market. The threat of retaliation from other players in form of price wars is minimal because of the presence of anti-dumping duties.

Inter-firm Rivalry: In this case inter-firm rivalry boils down to inter-country rivalry. The competition is tough in all the major markets such as Japan, U.S and Europe. Though majority of the shrimp imports is done by the mentioned three, all the players are always in search of new countries to explore. The shift of preference from one species of shrimp to another has been effectively utilized by countries such as Indonesia and Viet Nam in the Japanese market.

Bargaining Power of Suppliers: This point is not very relevant in this case. However, one point needs to be highlighted. The cost of production of raw shrimp is higher in countries where the production pattern is not organized and utilizes old technology. This leads to higher cost in the export price and thereby loss of export market.

Bargaining Power of Buyers: The bargaining power of the buyers, who in this case are the importing countries are quite high. One of the reasons is that the there are a lot of sellers and a few major buyers. Thus the buyers can exert their influence on the prices. Anti-dumping and other duties imposed by the buyer country may also harm the exporting country. The other reason is product differentiation which has led to differential pricing of the shrimps.

Threat of Substitutes: The biggest substitute of raw shrimp is the value added products such as ready to cook and ready to eat shrimp products, which are gaining popularity in the U.S and Europe. Though the basic component is same, i.e. shrimp, everything else is different. The export pattern is totally different from that of raw shrimp. Thus, if the importing country goes into production of the value added products, it will have an impact on the exporting country. Considering all the aspects, the shrimp export industry can be considered as highly competitive.

Answer to Assignment Question 4

Igor Ansoff's 'Product Market Growth Strategy' Matrix was developed to portray alternative growth strategies available to a company. The matrix is given in Figure 2.

Assuming Indian shrimp industry to be a single entity, the alternative strategies have been studied for India.

Market Penetration: Market Penetration may prove to be a very good option for Indian shrimp producers. Given the large population there is a huge domestic market of shrimp consumers. Given the right price there will be a rise in domestic consumption which will offset the loss in the export market.

Market Development: Given the competitive scenario, market development seems to be a difficult job for the Indian shrimp exporters. However, if they can maintain strict quality standards, they can try out the European market where India did not have a strong presence earlier.

Product Development: Product Development again has a lucrative future provided India can perform well. There is a growing market for value added shrimp products as well as other value added aquaculture products. This can offset the loss developed in raw shrimp exports.

Diversification: Lastly, diversification has already been started by India. The Indian live crabs have found out a market in South East Asian countries such as Taiwan, Singapore and Indonesia. Similar opportunities should be looked into, through which India can reduce their overdependence on shrimps.

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SMART METERING LEADING TO CONSUMER BENEFITS? A SCIENTIFIC APPROACH.

JOHANNES RAGER

Rising costs for energy and water and widespread media coverage urge the utility industry to look for new possibilities increasing efficiency and creating additional value as well as consumers' options of saving money. From the companies' perspective smart metering seems to be an answer to solve these problems, but it also poses the challenge of winning consumers' acceptance.

Modus operandi

Advanced and innovative meters, so called "smart meters" offer a variety of opportunities to develop new products in order to save energy or water or to use energy in a more efficient way. Although the supporters of this technology expect considerable changes and also benefits to the parties involved (Baker 2008), there are a lot of provisos nevertheless. While the providers of these services try to implement this new technology, the advantage of the new metering services aren't clear from a consumer's perspective. Therefore the success of smart metering depends on the consumers' willingness to adopt the new products and services which have to be developed.

Historical Background

The German public utility industry offers a large variety of products such as water, electricity, natural gas and long-distance heating. All these products are grid-bound, i.e. there is the necessity of building and maintaining a grid, such as power supply lines to deliver electricity to the place where customers need them. It has usually been a public task to provide these grids as they cause on the one hand enormous capital costs and on the other hand they are of great importance to people.

In the last decade the European Union set the target to deregulate the electricity and gas markets. Therefore the EU implemented directives to separate the parts of the natural monopoly such as the tasks of a Distribution System Operator (DSO) from the parts which do not fulfil the conditions of the natural monopoly such as sales and metering.

In October 2008 the German legislature deregulated the metering services. Since then each customer has the right to choose which company should provide metering services, no matter whether it is the same provider which delivers the energy or not. The first aspect of the new regulations is to ensure a competitive market so that the metering services become more reliable and cost-effective. Secondly, the German legislature wanted to offer incentives for customers to save energy and to use energy with innovative metering services in a more efficient way.

Metering services haven't changed fundamentally during the last century. The consumption of grid-bound products like electricity, gas or water needs to be measured at the end of the line: Therefore conventional meters measure the electrical work, the amount of gas - respectively the amount of water - in a very inexpensive way.

New technologies in data communication like the Internet and power line communication allow transferring data very inexpensively. Innovative technologies in metering services enable less expensive time-dependent measuring for end consumers. Moreover network operators have the opportunity to use the consumption data at the same time. Imagining a scenario of completely so-called "smart-meter" measured customers, as well as system operators and energy suppliers with instantaneous access to consumption data, there seems to be a lot of benefits for all parties concerned, e.g. tariffs to encourage energy consumption in times of low system load and low costs in energy production (Gordon et al. 2006 pp. 13-16), display real time information about energy consumption and costs to make customers save

energy and the possibility to coordinate supply and demand in order to have a balanced utilisation of the power plants and the grids.

Environmental Limitations and Facilitations

Despite these advantages of smart meters there are many challenges concerning the adoption of this innovative technology. There are economic reasons because smart meters cost more than ordinary ones. Therefore it is necessary to design new products whose benefits outweigh additional costs. This assumes that the ecosystem at both ends of the lines has to match (Adner 2006). There is no surplus neither for the companies nor the consumer as long as technology differs. Another requirement for a successful implementation is an interoperable communication standard which allows to benefit the economies of scale. But currently there is no leading standard in Germany. Furthermore utility companies' readiness for invest is conservative because of changing technologies and also the possibility of changing in regulations (Kerstens 2008 p.26).

The author of this article works at a public utility company and regards smart metering services as an important topic. Although it seems that smart meters lead to several changes in products, the authors is interested in possible changes in consumer behaviour which could be important for the success of the new technology. For this reason the result of the research project might be a reasonable background for extensive investment decisions in smart metering. Another research objective is evaluating whether there are similarities or differences in consumer behaviour within selected countries of the European Union.

Towards the future

The aim of this PhD project is to elaborate variables to be able to make conclusions about customers: are they willing to change their behaviour in order to save energy and water and to protect the environment by introducing smart meters? And do smart metering services hold benefits for the customers as well as for the supply company and the grid operator? Evaluating this thesis will make it necessary to use several research methods. Qualitative research such as in-depth interviews and the analysis of consumption data will identify behavioural changes and their reasons. Quantitative research methods will show the range of interdependencies between the variables.

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UNIQUENESS OF AUTOMOTIVE BRANDS AND SUBSTITUTIONS EFFECTS IN THE GERMAN MARKET

DOROTHEE BIALDYGA

Germany is the home country of automobiles. In 1886 Carl Benz, a German engineer, had the first car patented. Since that time, a lot of people in the world are fascinated by cars and so am I. But my focus of interest is not the speed or the design of cars; I am fascinated by the fascination which these machines cause by other people and the reason why. In my former job as a consultant at the research company TNS (Taylor Nelson Sofres) Infratest in the automotive research department, I dealt with interesting questions concerning the image and the advertising of German premium car brands, but I was always faced with the manufacturer's problem: How to be unique and different in comparison to the competitors.

The dissertation concerns the influence of brand uniqueness in the automotive market in regard to possible substitution effects. Due to the on-going globalisation of the automotive market, the fact that German brands have been or are still very successful (Ford and Meckes, 2004), and the growing market power of Asian automotive brands in the German market, the importance of the quality criteria "Made in Germany" will also be considered. However, a lot of research about the country of origin effect already exists; this is not the topic in focus (Peterson and Jolibert, 1995). The thesis to be analysed is the following: The greater the uniqueness of an automotive brand, the lower the possibility of substitution. As the automotive market is a very important market and the market structure is not easily comparable to other markets, there is a necessity for researching in this sector. For Automobile manufacturer it is very important to intensify the work on their brands, as the international competition gets harder and harder. Hence the Importance of opportunities to differentiate and reaching a unique selling proposition is undeniable. (Gottschalk et al., 2005)

To achieve that, a deep going literature review of the topics "Automotive Market", "Uniqueness (including Country of Origin effects)" and "Substitution theory" must be made. Moreover, a continuous monitoring of the market activities is indispensable since, at the time this study begins, the market is back to square one and about to be restructured. Based on that, an empirical evaluation of German car drivers, analysed with uni- and multivariate methods using the statistical computer program SPSS will be conducted. To create the concrete content of the evaluations, additional qualitative pilot studies such as interviews with experts or group discussions among car drivers are conceivable.

A lot of studies concerning brand equity mentioning uniqueness as an influencing factor for fast moving consumer goods already exist, but fewer for consumer durable goods like automobiles. R.G. Netemeyer et al. published a paper in the Journal of Business Research (2004) concerning "Developing and validating measures of facets of consumer based brand equity". Based on Aaker (1996a) and Keller (1993) Netemeyer defines Uniqueness inter alia as core/primary facets of CBBE for frequently purchased goods and infrequently purchased non-durables, but "whether our CBBE measures hold as well for 'durable' goods has yet to be tested." (Netemeyer et al. 2004, p.223) In contrast to that thesis, Jenni Romaniuk and Elise Gaillard state in the Journal of Marketing Management (2007), that "at minimum, the position of brand uniqueness as a key indicator of CBBE seems tenuous." Their study was a post-hoc analysis of a large number of brands in a variety of categories. They suggest "a useful avenue for further research would be to take a more focussed longitudinal approach to identify brands that have focussed on building unique association as their primary strategy and assess the success in building these associations and the subsequent brand performance. This would further test the value and feasibility of a differentiation via uniqueness strategy." (Romaniuk and Gaillard, 2007, p.282). The automotive sector will be an optimal place to do such research, as uniqueness

is a key value of all automotive brand strategies. Furthermore the uniqueness of brands is always seen in context with purchase intention or price premiums and not with substitution options. This study concentrates on the relationship between uniqueness and substitution effects.

But watching the automotive market, it is impossible to ignore the upcoming or already existing problems: volatile oil prices, cost pressure from all sides and financial crises with enormous effects especially on the automotive sector. In the past decades, the automotive sector experienced a rapid growth leading to a fragmented market, which is divided into various segments, lines, body types and models (Becker, 2007):

60s	70s	80s	90s	2000
Spyder	Coupé	Convertible	Roadster	New drive systems
Sports Car	Sports Car	Coupé	Convertible	Hybride Vehicles
Saloon Car	Compact Cars	Sports Car	Coupé	Minivan
	Saloon Car	Compact Cars	Sports Car	Van
	Estate Car	Saloon Car	Compact Cars	Roadster
	Hatchback	Estate Car	Saloon Car	Convertible
		Hatchback	Estate Car	Coupé
		Multifunctional Car	Hatchback	Sports Car
			Multifunctional Car	Compact Cars
			SUV	Saloon Car
			Off-Road	Estate Car
			Pick-up	Hatchback
				Multifunctional Car
				SUV
				Off-Road
				Pick-up

In order to differentiate and thereby be more successful, the manufacturers of the big car brands serve nearly each market segment – premium models, volume models, classic lines, elegance lines, sport lines, etc. (Ebel et al., 2003).

For example, VW enlarged its product series between 1990 and 2008 from five to thirteen. At the same time, Mercedes-Benz tripled its range of models (Diez, 2008). This strategy leads to quite homogenous markets with regard to product quality and thereby diminishing uniqueness of car brands. The question is, what makes the difference in the image and the communication of car brands and how can this be measured? If all brands offer the customer nearly the same, they are in danger of being easily substituted. Can image-driven uniqueness hinder this substitution effect? If the cars become more homogenous concerning technical aspects, the role of the uniqueness of a car brand in terms of marketing becomes more and more important.

The financial crisis forced some manufacturers to merge. They are now faced with the problem to manage several different brands in one company. The latest example is the big challenge VW is now faced with the integration of Porsche in its portfolio. So the question is more important than ever, what the marketing can do to keep a car brand unique and if these changes influence the perception of the customer.

The two major limitations of this study are that it concerns only one country and one market. If the conclusions remain valid for other countries and other markets is yet to be researched.

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VIRTUAL TOUR EXPERIENCE AND ONLINE REVIEWS IN THE UK HOSPITALITY INDUSTRY: AN EXPLORATORY STUDY OF ONLINE EXPERIENTIAL MARKETING

Y YAP

The main reason I have chosen this topic is due to emerging importance and benefits of information technology (IT). IT has assisted many organisations in synergising various departments for more efficient operations and some has been brought to the international forefront which ultimately results in increased profit and improved corporate image. Having worked professionally in a few IT companies has widen my vision and my undertaking a research related to IT will hopefully contribute to knowledge and assist practitioners to evolve from the current level.

Hospitality industry is one of the travel related business that have been positioned as one of the largest application in successful online transaction. Figures show that online travel business has increased from US$46 billion in 2003 to US$54 billion 2004(Law and Cheong, 2006).Therefore, it is obvious that the hospitality industry is most suited for this research. IT is a wide area and thus two new internet phenomenons, the virtual tour and online reviews have been chosen for this research. Virtual tour is chosen based on the results in creating a positive experience (Williams, 2006) and online reviews increase consumer awareness of organisations' existence (Vermeulen and Seegers,2009). Hence, conclusion from this research will spark a light of knowledge in consumer behaviour.

Fundamentally, many academics have stressed the importance of technology in business. Two significant examples are Porter (2001) "Strategy and Internet" and Levitt (1984) "Globalisation of Markets". Porter initiates the fundamental concept of how technology can be used as strategy to create competitive advantage by incorporating his previous model of five forces in the analysis to bring the organisation forward. Levitt predicted that the market place will be homogenised with increased information awareness among consumers with internet. Evidences that their predictions are somehow parallel, we can observe that there is a trend that many corporations are moving from services to experience marketing (Williams, 2006). In other word, many corporations are using technology like the virtual tour to create an experience to attract consumers from the comfort of their home to the hotel premise. On the other hand, consumers are increasingly involved with online reviews for information search and thus integrating these two elements in the research will bring elevated value in contribution of knowledge towards this field.

Most research done within this sector is positivist in nature and undertakes the quantitative method mainly survey. However, many questions the reliability of this method and this research will fill the gap in that sense as it employs a qualitative approach. Using semi structured interviews to explore their views and perceptions; this will enable a more thorough understanding of the current situation. Additionally, the eye tracking technology is employed to scientifically determine the movement of the pupil. The eye tracking technology is capable to provide a scientific analysis of consumer behaviour. Moreover, a website content analysis will set the scene to provide a the current situation of the industry

A holistic approach of analysing the current UK hotel industry will gain insights of the present level and the demands and preferences of consumers. This research will fill the gap in knowledge and bring value to both academics and practitioners utilising technology as experiential marketing tools.

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INTERNAL COMMUNICATION 2.0

STEFANIA MAURIELLO

Keywords: internal communication, social media, communities of practice

I'm Stefania Mauriello, PhD student in Economics, Marketing and Organizational Communication at IULM University, Milan, Italy. Now I'm working at Leeds Metropolitan University (Leeds - UK) in Business School faculty as a PhD visiting student for four months. My topic research is Internal Communication.

My PhD dissertation focuses on the management with "approach 2.0" applied to internal communication in modern organizations. This approach is characterized by the relational mode based on engagement and partnership between the company and its internal stakeholders and the use of web 2.0 applications (Harrison, St. John, 1996; Waddock, Andriof, 2002; Payne,Calton, 2002). In particular, it analyzes the communities of practice (Wenger, 1991) a peculiar internal communication tool of web 2.0, with a multidisciplinary approach drawing on sociological, organizational and managerial contributions.

The objectives of this dissertation are:

- defining the concept of "2.0 approach" in studies of business management, with particular reference to its relational and communicational dimension;

- identify opportunities from "approach 2.0" in the government of human resources within the company, exploring its applications in the field of internal communication;

- verify the empirical potentiality in applying "approach 2.0" to the management of human resources and of internal communication (studies of cases).

Practitioners see internal communication as an important, challenging area (Robertson, 2004:17; FitzPatrick, 2004:19) which affects the ability of organisations to engage employees (Kress, 2005, p. 30).

This dissertation looks at managed communication and attempts to develop theory to assist in the management of internal communication. After this dissertation examines empirically the hypothesis that the relational mode based on engagement and partnership between the company and its internal stakeholders and the use of web 2.0 applications enablig a better internal climate. A good climate of working can help the organization to obtain competitive advantage, better job performance and to reduce turnover rates.

Preliminary step of my research has been to explore the specific literature and to revise the most important theories with a critical point of view. Three core field I have identified:

a) Organizational studies (Kreitner;Kinicki, Schermerhon;Hunt; Osb);

b) Management studies (Freeman; Andriof, Waddock;Woodward, MCAfee, Mainetti, Tapscott; Williams;Vicari;Rullani; Sciarelli;Hertzberg);

c) Communication studies (Invernizzi; Mazzei; Fiocca; Yeomans; Welch,Jackson).

The basic theory, the fil rouge which connects all other theories examined in my dissertation is the Stakeholder Theory of Freeman (1984).

Therefore in the my first PhD year I have designed theoretical structure and background useful to enabling the empirical part of my thesis. Now I'm working about methodology part of my dissertation. In particular, I'm creating a management model to apply to salient Italian companies and verifies my hypothesis of research through survey of climate investigation (quantitative research method) and structured interview to the Internal Communication CEOs (qualitative research method). The output of my dissertation will be five case of studies.

The sample of research are five companies that the Great Place to Work® Institute Italy has been identifying Best Workplaces in the Italy for the last five years. I will apply my model to verify if the characteristics that I have individuated are the very tools which helping the companies to be the Best

Workplaces. After I will verify if this characteristics really can contribute the companies to obtain competitive advantage, better job performance and to reduce turnover rates.

As main web 2.0 instrument I'm studying the CoP (communities of practice), (Wenger, 1991). Several scholars argue the importance of communities of practice as tools to enable processes of creating and developing informal social networks and better working climate (Wenger E., McDermott R., Snyder W., (2002), "Cultivating Communities of Practice", Harverd Business School Press, Cambridge, Massachussetts).

Limitation

During this two year of research I have found same limitations other than facilitations.

The main limitation is that in the literature the papers and scientific journal deals with internal communication and new media not much. The principal motif is these are very new subjects both in academic fields and within the companies.

Facilitations

The foremost facilitation is the availability of companies towards research to participate and give information useful for case of studies.

Toward the future the scholars could continue the research to compare bad and good internal communication 2.0 practice in order to benchmarking.

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COMPUTER SYSTEMS FOR CHILDREN WITH SEVERE AUTISM AND LEARNING DIFFICULTIES

SALIMA Y AWAD ELZOUKI

Children with severe autism face many challenges trying to communicate with the world. One method of helping them is to use computers. My main research question is to see if and how computers might help a group of these children in recognising facial expressions of emotions in a safe environment.

HISTORICAL BACKGROUND

When this research started there were many concerns that inspired and motivated this research. For example, children with autism have difficulty in reading and understanding other's facial expressions. On the other hand, they are interested in using computer systems (Moore et al. 2004; Parsons & Mitchell 2002; Swettenham 1996; Tucker 1997). They also could learn from them some social skills (verbal and non verbal communications). There had been an interest in research using assistive technology for people with autism (Moore et al. 2004). However, the field was largely unexplored (Moore & Taylor 2000; Moore et al. 2004; Beardon et al. 2001), especially, for children with severe autism (Moore 2007) in which this research comes in.

MODUS OPERAND

Quantitative research approach has been used quite often in preceding work related to the current research. In particular, "experiment" or "experimental design" (Robson 1993) used to evaluate prototypes where the data collected were analysed statistically e.g. Silver (2000) and Cheng (2005). The outcomes of these research projects were promising and interesting, thus, it suggested using a similar approach in evaluating the new system of this research project. However, these studies have tended to leave open the possibility that participants received help from their parents and/or teachers when completing computer based exercises.

To address this limitation, therefore, studying the interaction between the participants and the new system, was essential. To get a realistic picture of how the new system is used by participants, the researcher needs to observe the users intimately and personally. Observing the interaction between the children and the new system would enhance the validity of the results and the evaluation of the system, simultaneously.

The context for the research was a special unit of children with severe autism and learning difficulties setting in a mainstream primary school.

Given the nature of these children, familiarity between them and the observer was important to avoid distress or upset during the computer intervention. Therefore, non-participant observation which is a fundamental method of gathering data in a naturally occurring situation (Robson 1993) seemed to be a good method to get some information about the children's needs in their natural school environment.

Initially, working with the children was challenging as they seemed different in their behaviours and interests. Moreover, they seemed to have different and individual characteristics, learning attitude, communication and needs. Nevertheless, visiting the unit as a non-participant observer helped to understand the general characteristics of the children but it did not help to build the familiarity and trust between the researcher and the participant which is required for the system evaluation .

A call for another approach that could help in understanding these special children within their environment came into view. Qualitative research has been seen as the approach that would enable researchers to understand how participants "construct the world around them" (Glesne 2006)

p4. The aim of qualitative researchers, therefore, is "to study how something is and get to understand it" Lichtman (2006) p11. It could be argued, therefore, that the qualitative research approach would help in understanding these special children. In particular case study design appeared to be the most appropriate approach to follow to inform the methodology design and to look at these children's special cases. As a result, a detailed case study profile was created for each child based on the combination of non participant (neutral observer), participant (involved observer) observations and interviews with the staff members.

ENVIRONMENTAL LIMITATIONS AND FACILITATIONS

The data obtained from observing and interacting with the children in their natural sittings informed many aspects of this research. The detailed description of the children's case studies were a result of collecting this data. a detailed Case study profile created for each child based on the combination of both non participant observations (neutral observer) and participant observations (involved observer).

Non participant observation showed that the children were special and individual in many ways. On the other hand, it became obvious that to engage the children in any activity, one had to become part of their daily routine. The debate about which methodology to use to understand these children represented a major part of the initial research.

TOWARDS THE FUTURE

The tradition of the "world view" c.f. Creswell & Clark (2007) in the area of the current research used to be experimental design with the use of statistics to analyse the data. However, the different and the challenging nature of the children that participated in this research suggested the need for an "alternative approach" i.e. qualitative research (c.f. Lichtman 2006).

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EXPLORING THE PERSPECTIVES OF SERVICE QUALITY AMONG MAIN STAKEHOLDERS IN EXHIBITION INDUSTRY IN TAIWAN

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Situational summary

Exhibitions is one of the business events sectors which include conventions, meetings, and exhibitions as they all related to business activities, and have developed rapidly since the 1980s worldwide. There are an increasing number of business events taking place in Asia-Pacific region cities such as Singapore, Hong Kong, Beijing, Seoul, Bangkok, Taipei, Shanghai, Tokyo and Kyoto (ICCA 2004, cited in Davidson and Rogers 2006, p.223) recently. This has resulted in the Asian convention and exhibition market becoming highly competitive due to it will bring enormous benefit not only for economic but also for whole society impact.

For example, the Union of International Associations (UIA, 2006) reported that one of the sectors within business events, international conferences contributed approximately US$150 billion to industrial output with 60% of the conferences staged in Europe and 18% in Asia, while international exhibitions contributed approximately US$760 billion, with 57.7% held in Europe and 21.2% in Asia.

Facing on this fully competitive environment, the service quality is one of the powerful tools to survive. As the product in business events industry means professional service that provided by events organisers, it is intangible as compare with tangible product, and this specific characteristic is same as one of the nature of service. Dwyer and Mistilis (1999, p.92) mentioned that "continual improvement in service standards is essential if the industry in emerging destinations …… to compete successfully with the more established MICE destinations and counteract the growing competition". And Lee and Park (2002) indicated the service quality is one of the key factors for successful convention evaluation.

In addition, in terms of literature review related to business events and service quality subjects, the majority of researchers focused on the conference/ meeting sector more than exhibition sector. It is interested to evaluate that the main principles in conference resource development theories are suit to apply to exhibition sector or not. Also, the majority researches were conducted in Europe or USA, and there has been very little research developed related to the concepts of service quality in business events in Taiwan, particularly in exhibition area.

Thus, the research is to investigate the needs, wants, and expectations of the various stakeholders, they are, venue providers, organisers (PEOs: Professional Exhibition Organisers), exhibitors, and attendees with particular reference to whether each really understands the needs of the others, and will conduct both qualitative and quantitative methods in exhibition industry in Taiwan.

Modus operandi

Exhibitions are complex and involve a number of stakeholders; specifically the venue providers that provide venue services, organisers that arrange all aspects of the exhibition, exhibitors that offer their products and services, and attendees that attend the exhibitions. Robbe (2000, p.15) mentioned, the success and growth of the exhibition industry in recent years is in part due to 'the human element, the opportunity they offer to bring people into face-to-face contact'.

Thus, in order to assess what service factors may contribute to the development of exhibition industry, this research takes the approach of

gaining the expectations of the service quality of the current situation and satisfaction (perceived service quality) from the four major stakeholder groups in the exhibitions industry in Taiwan.

As mentioned, the exhibition industry in Taiwan has developed substantially over the last decade, but there is a dearth of research in this area. Thus, in order to develop the concepts of service quality in the beginning stage, it is necessary to consult relevant prior researches. The service quality attributes will be identified and categorised based on their high frequencies which have been mentioned in previously studies.

Then, the selected service quality attributes will be edited into a questionnaire and sent to participants to clarify the validation. It may need two or three times of questionnaire distribution in order to be accurate at the service quality attributes. Ideally, the questionnaire will be sent via email and the participants are able to reply by email, fax, or post (prepaid envelopes attached if required) for efficient responding. In addition, the researcher will make contact with the participants once the questionnaire is dispatched.

In summary, the results of this research may have a real interest for the Taiwanese government and exhibition industry as, if applied effectively, could guide great improvements. In addition, if such issues exist in a young exhibition industry such as in Taiwan, it is likely that similar issues exist in other, longer established, nations – the work may, therefore, have international importance.

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