

## **CHAPTER 2**

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## **CHAPTER 2**

### **REVIEW OF LITERATURE**

#### **2.1 SERVICE QUALITY**

This part of the review considers what constitutes service, characteristics of services & conceptualization of service quality. Further, it reviews the usage of “SERVQUAL” instrument –an instrument used for measuring service quality.

##### **2.1.1 Service & Characteristics of Services**

The concept of service comes from business literature. A review of literature reveals that many thinkers have approached the issue of defining services differently. As an example Zeithaml and Bitner (1996) have defined services as “Deeds, processes and performances” (p.5), while, Kotler (2003) provides a similar definition with other aspects such as intangibility & no ownership, included as “A service is any act or performance that one party can offer to another that is essentially intangible and does not result in ownership of anything. Its production may or may not be tied to a physical product” (p.444).

Services have also been defined from a view point of transactions as “The business transactions that take place between a donor (service provider) and receiver (customer) in order to produce an outcome that satisfies the customer” (Ramaswamy, 1996, p.3).

An attempt has been made by some authors to define services keeping in mind what is done by the marketer and the end result of this process on a customer. Accordingly, services have been defined as “an activity offered for

sale which yields benefits and satisfactions without leading to a physical change in the form of a good.” (Blois, 1974, p.157). In a similar vein, another definition proposes services as “separately identifiable, intangible activities which provide want satisfaction when marketed to consumers and/or industrial users and which are not necessarily tied to the sale of a product or another service.” (Stanton, 1974, p.545). Services have been proposed to be a change as given by the following definition “A service may be defined as a change in the condition of a person, or of a good belonging to some economic unit, which is brought about as the result of the activity of some other economic unit, with the prior agreement of the former person or economic unit” (Hill, 1977, p.318).

Yet another view proposed is that services produce some useful effects given as “Any purchase of services by an economic agent B (whether an individual or organization) would, therefore, be the purchase from organization A of the right to use, generally for a specified period, a technical and human capacity owned or controlled by A in order to produce useful effects on agent B or on goods C owned by agent B or for which he or she is responsible.” (Gadrey, 2000, pp. 382-383).

Services have been analysed from a system thinking paradigm as “A production system where various inputs are processed, transformed and value added to produce some outputs which have utility to the service seekers, not merely in an economic sense but from supporting the life of the human system in general, even may be for the sake of pleasure.” (Lakhe & Mohanty, 1995, p.140).

Other views on services which incorporate characteristics of services is given by Bowen & Cummings (1990) as:

1. Services are more or less intangible
2. Services are activities or a series of activities rather than things
3. Services are heterogeneous – service to one customer is not exactly the same as the “same” service to the next customer
4. Services are, at least to some extent, produced and consumed simultaneously.

5. The customer participates in the production process, at least to some extent.

One of the most comprehensive definitions of Service is expressed by Gronröos (1983):

“A service is an activity or series of activities of more or less intangible nature that normally, but not necessarily, take place in interactions between the customer and service employees and/or systems of the service provider, which are provided as solutions to customer problems.” (p.27).

Review of literature on the definitions of services reveal the following characteristics that facilitate better understanding of their nature:

1. Services are intangible ( Kotler, 2003; Bowen & Cummings, 1990; Rathmell, 1966; Shostack, 1977; Shostack, 1982; Berry, 1975; Zeithaml et.al, 1985; Lovelock, 1983)
2. Services are perishable (Bowen & Cummings, 1990; Zeithaml et.al, 1985; Lovelock, 1983; Fitzsimmons & Fitzsimmons, 2004)
3. Services are characterized by heterogeneity (Bowen & Cummings, 1990; Zeithaml et.al, 1985; Lovelock, 1983; Gronröos, 1984)
4. Services are characterized by inseparability ( Hill, 1977; Zeithaml et.al, 1985; Lovelock, 1983; Gronröos, 1984).
5. Physical resources or environments play an important medium role in the process of service production and consumption(Gronröos, 1990; Collier, 1994).
6. Services is needed by consumers to provide certain functions such as problem-solving (Ramaswamy, 1996)

### **2.1.2 Service Quality**

Because of the intangibility, perishability, heterogeneity and inseparability, service quality is more difficult to define than product quality. Different theoretical perspectives on service quality were developed during the

1980's. Gronröos (1984) identified three components of service quality, namely: technical quality; functional quality; and image. Technical quality refers to the delivery of the core service or outcome of the service (i.e. what is offered and received). Functional quality refers to the service delivery process, or the way in which the customer receives the service (i.e. how the service is offered and received). Image is very important to service firms and is dependent on technical quality, functional quality and other factors (tradition, ideology, word of mouth, pricing and public relations).

Lehtinen and Lehtinen (1982) discussed three distinct service quality dimensions namely: physical quality, interactive quality and corporate quality. Physical quality includes the physical aspects associated with the service such as the reception area and equipment. Interactive quality involves the interaction between the customer and the service personnel, while corporate quality includes the firm's image or reputation.

Service quality research got a fillip with the work carried out by Parsuraman *et al.* (1985). They carried out exploratory research with 12 focus groups of consumers in four service industries (retail banking, telecommunications, securities brokerage, and product repair & maintenance). The initial findings yielded 10 dimensions of service quality that included tangibles, reliability, responsiveness, competence, courtesy, credibility, security, access, communication, and understanding the customer. They described service quality as: "Service quality is more difficult to evaluate than goods quality, beliefs about service quality are derived from a comparison of consumer expectations against the actual service being fulfilled (performance) and the result of a service being performed is not the only basis for evaluating quality."(p.42). Further studies by Parsuraman *et al.*(1988) resulted in a 22 item scale, called "SERVQUAL" which measures service quality based on five dimensions viz. tangibles, reliability, responsiveness, assurance, and empathy. According to them service quality is the difference between the customer's expectations of the service and his/her perceptions of the service that is

actually received on the five dimensions. Service quality hence is the disconfirmation or disparity i.e. the mismatch, between the consumer's expectations and perceived service performance.

Cronin and Taylor (1992) argued on the framework of Parsuraman *et al.* (1985) with respect to conceptualization and measurement of service quality and developed a performance only measure of service quality called "SERVPERF" by illustrating that service quality is a form of consumer attitude. They argued that the performance-only measure was an enhanced means of measuring the service quality. Also it is worth noting that SERVQUAL's five dimensions are not universals. The number of dimensions comprising service quality is contextually determined. Babakus and Boller (1992) suggested that the number of service quality dimensions is dependent on the particular service being offered.

Teas (1993) examined conceptual and operational issues associated with the "perceptions-minus-expectations" (P-E) of perceived service quality model. The author proposed alternative models of perceived service quality based on Evaluated Performance (EP) and Normed Quality (NQ). He concluded that the EP model could overcome some of the problems associated with the P-E gap conceptualization of service quality. In another study Parsuraman *et al.* (1994) responded to the concerns raised by Cronin and Taylor (1992) and Teas (1993) by demonstrating that the validity and alleged severity of many of these concerns were questionable. They further stated that though their approach to service quality could and should be refined, but dropping it altogether for the approaches proposed by Cronin & Taylor (1992) and Teas (1993) did not seem necessary.

Review of literature reveals that while a number of service quality models have been developed (Seth *et al.*, 2005) to study service quality, there has been no general agreement on how to measure it. To measure service quality, majority of the researchers (Chaston, 1994; Reynoso & Moore, 1995; Edvardsson *et al.*, 1997; Lings & Brooks, 1998; Sahney *et al.*, 2004) have used SERVQUAL (Parsuraman *et al.*, 1988) methodology.

Hence present study incorporates an adapted version of the SERVQUAL instrument for measurement of service quality of non-fuel offerings at petro retail outlets.

### **2.1.3 The SERVQUAL Instrument**

The SERVQUAL (Parsuraman et al., 1988) instrument is used to assess consumer perceptions and expectations regarding the quality of the service. Respondents are asked to rate their level of agreement or disagreement with the given 22 statements (Annexure-I) on a seven point Likert Scale. Consumer's perceptions are based on the actual service they receive, while consumer's expectations are based on past experiences and information received. These statements represent the determinants or dimensions of service quality.

It has five generic dimensions or factors which include:

1. Tangibles: physical facilities, equipment and appearance of personnel.
2. Reliability: ability to perform the promised service dependably and accurately.
3. Responsiveness: willingness to help customers and provide prompt service.
4. Assurance: knowledge and courtesy of employees and their ability to inspire trust and confidence.
5. Empathy: caring and individualized attention that the firm provides to its customers.

## **2.2 OIL & GAS SECTOR IN INDIA**

### **2.2.1 Primary Energy Consumption: World Vs India**

Energy is consumed by us at home, at work and for leisure. It helps us to improve the quality of our lives. Energy is also the driving factor for economic development. We need an abundant and uninterrupted supply of energy for living and working.

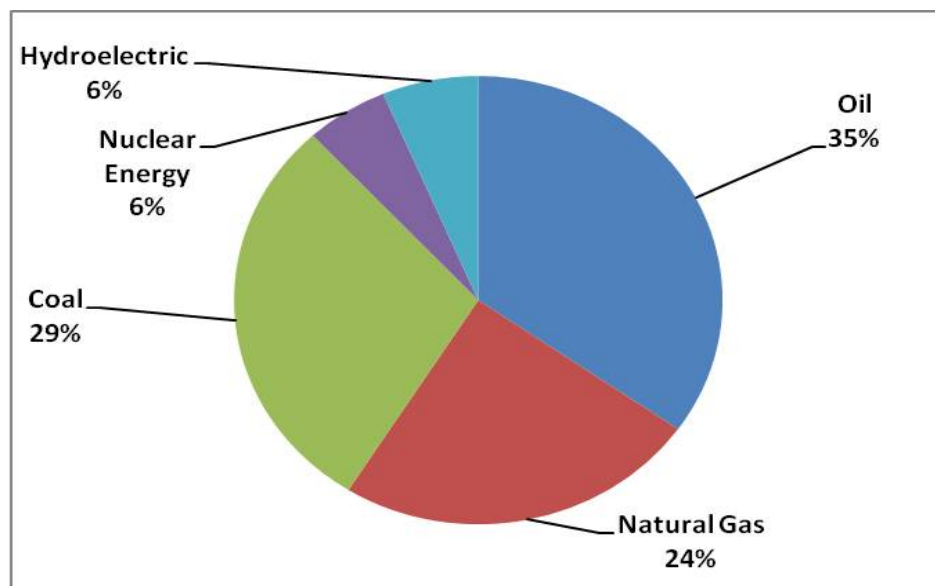
Review of studies reveals that India is the fifth largest consumer of primary energy in the world (Table 2.1). India's primary energy consumption has grown at a Compounded Annual Growth Rate (CAGR) of 4.76 % during the period 1998-2008 against world's primary consumption growth of 2.42 % CAGR over the same period ("BP Statistical Review," 2009).

**Table 2.1: Primary Energy Consumption (MMTOE)**  
("BP Statistical Review," 2009)

Country	1998	2008	World Share 2008 (%)	CAGR 1998-2008 (%)
US	2219.2	2299.0	20.4	0.35
China	917.4	2002.5	17.7	8.12
Russian Federation	602.3	684.6	6.1	1.29
Japan	496.9	507.5	4.5	0.21
India	272.1	433.3	3.8	4.76
Canada	283.9	329.8	2.9	1.51
Germany	333.6	311.1	2.8	-0.69
France	246.3	257.9	2.3	0.46
South Korea	165.1	240.1	2.1	3.82
Brazil	173.8	228.1	2	2.76
<b>Total World</b>	<b>8888.5</b>	<b>11294.9</b>	<b>100</b>	<b>2.42</b>

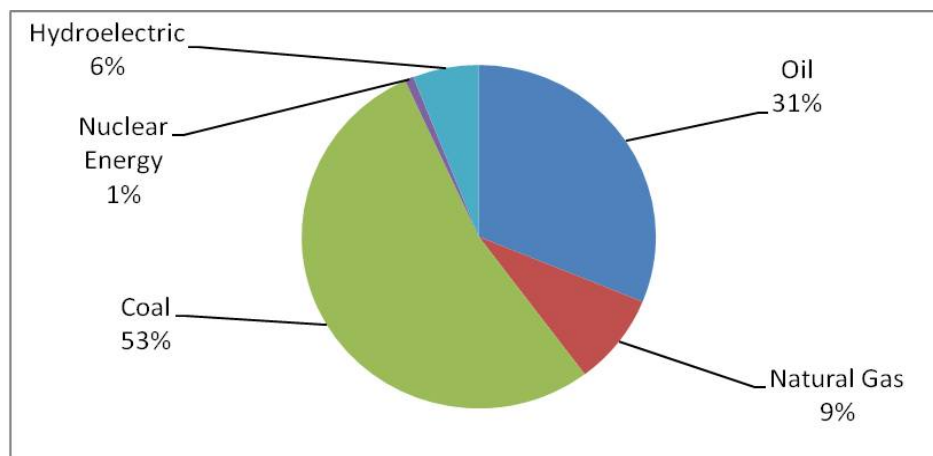
The world primary energy mix ("BP Statistical Review," 2009) is dominated by oil and by coal. The fuel-wise world primary energy consumption trend for 2008 is shown in Fig.2.1.





**Fig. 2.1: Fuel-wise Primary Energy Consumption Trend for 2008 (World)**  
("BP Statistical Review," 2009)

Figure 2.2, gives the fuel-wise breakup of primary energy consumption trend in India ("BP Statistical Review," 2009) for 2008. Of the total primary energy consumption in India, oil accounts for 31% , second only to coal, which accounts for 53%.

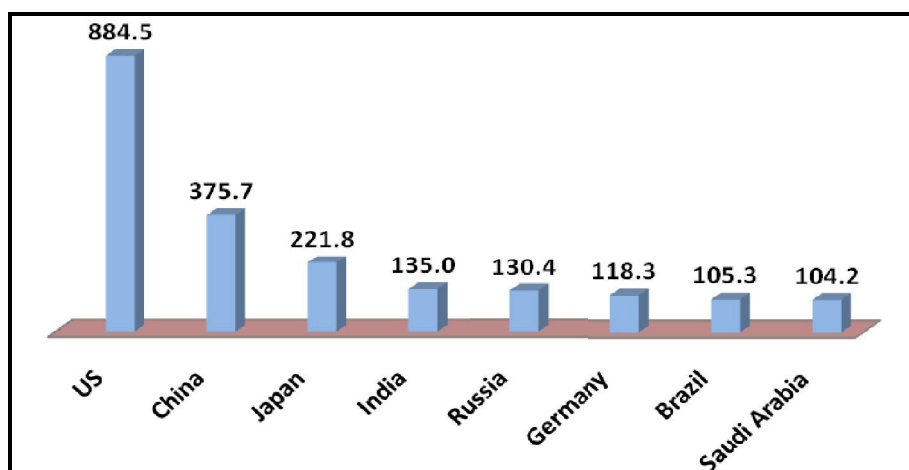


**Fig. 2.2: Fuel-Wise Primary Energy Consumption Trend for 2008 (India)**  
("BP Statistical Review," 2009)

## 2.2.2 India's Oil Scenario

### A. Consumption

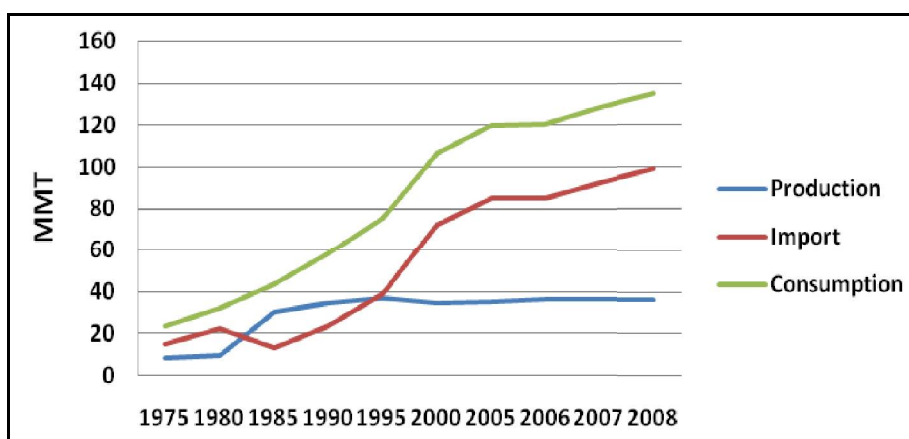
India's oil consumption in 2008, was 135.0 Million Tonnes. As indicated in Fig. 2.3, this consumption level makes India the 4<sup>th</sup> largest consumer of oil representing 3.4 % of world's total consumption. During 1998-2008 oil consumption has increased at CAGR of 3.85% against world CAGR of 1.33 %.



**Fig. 2.3: World's Largest Oil Consuming Countries (MMT)**  
("BP Statistical Review," 2009)

### B. Demand-Supply Gap

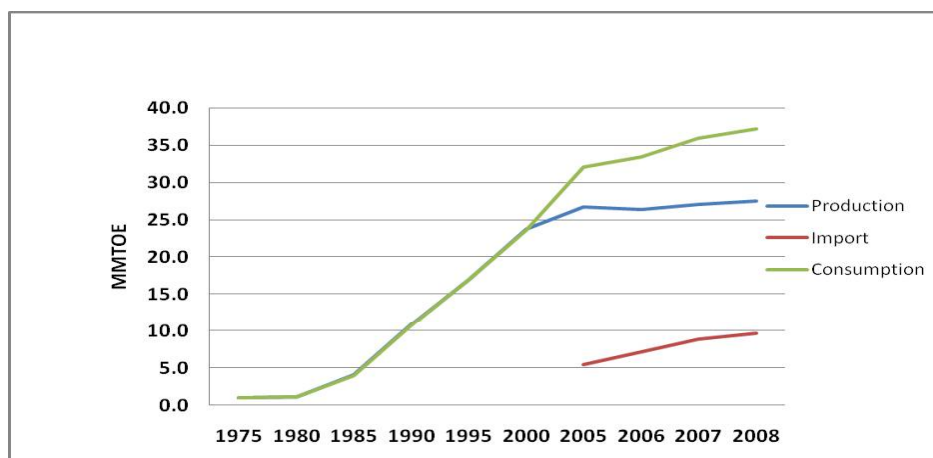
Demand Supply gap has always been there (Fig. 2.4) and is expected to exist in future also. India's dependence on imports of oil increased from 69.5 % in 2002-03 to 73.25 % in 2008-09.



**Fig. 2.4: Oil Demand-Supply Gap**  
("BP Statistical Review," 2009)

### 2.2.3 India's Gas Scenario

Presently gas forms 9% in the primary energy consumption. This will increase as gas has been discovered at the East Coast. Gas situation is expected to improve by 2012. However as shown in Fig. 2.5, the demand-supply gap is expected to exist in future.



**Fig. 2.5: Gas Demand-Supply Gap**  
(“BP Statistical Review,” 2009)

### 2.2.4 Oil and Gas Industry Structure in India (“Oil and Gas,” 2008)

A review of literature reveals that Ministry of Petroleum and Natural Gas (MoPNG) is the apex body that supervises all the activities in the oil & gas industry in India. It is entrusted with the responsibility of exploration and production of oil & natural gas, their refining, distribution & marketing, import, export, and conservation of petroleum products and Liquefied Natural Gas (LNG) (“Ministry of Petroleum,” 2009).

The Oil and Gas Industry (Fig 2.6) can be categorized as consisting of Upstream, Downstream and Industry Bodies/Others. Upstream includes exploration and production of oil & gas. Downstream includes refining of crude oil, marketing of petroleum products & natural gas and transportation of the same. Industry Bodies/Others include a number of organizations that facilitate delivery of various functions of MoPNG.

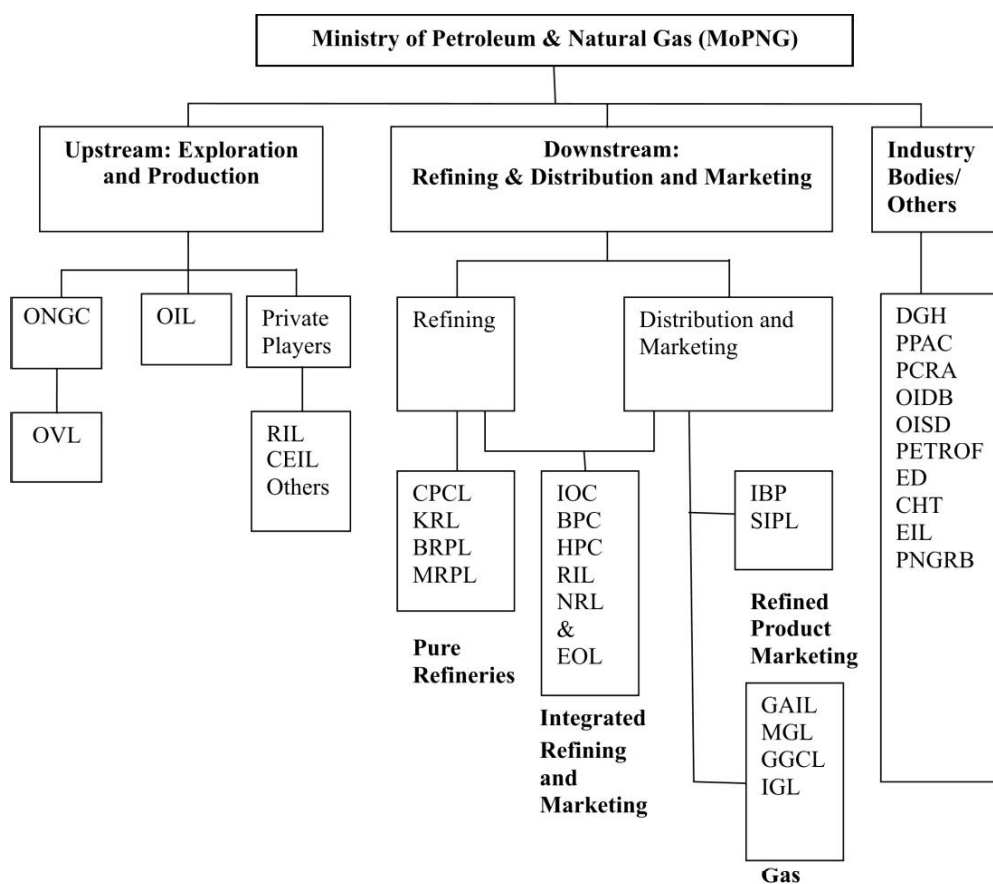


Fig. 2.6: Oil and Gas Industry Structure

### A. Upstream

The exploration and production of oil and natural gas in the country is primarily undertaken by Oil and Natural Gas Corporation Limited (ONGC) and Oil India Limited (OIL). ONGC has also set up a wholly-owned subsidiary, ONGC Videsh Ltd. (OVL) for its overseas operations. Post New Exploration and Licensing Policy (NELP) rounds the presence of private players in upstream has been increasing. Cairn Energy India Pvt. Ltd. (CEIL) and Reliance Industries Limited (RIL) are major players in exploration.

### B. Downstream

Includes first category of companies which have only refinery operations and include, Chennai Petroleum Corporation (CPCL), Kochi

Refineries Limited (KRL), Bongaigaon Refineries & Petrochemicals Limited (BRPL), and Mangalore Refineries & Petrochemicals Limited (MRPL).

This sector has also a number of companies which are integrated refining and marketing companies, such as Indian Oil Corporation Limited (IOC), Bharat Petroleum Corporation Limited (BPC), Hindustan Petroleum Corporation Limited (HPC), Numaligarh Refineries Limited (NRL), Reliance Industries Limited (RIL), and Essar Oil Limited (EOL).

Indo Burmah Petroleum Company Limited (IBP), a subsidiary of IOC and Shell India Pvt. Ltd. (SIPL) are pure an oil-marketing companies.

Gas Authority of India Limited (GAIL) set up in 1984, is responsible for natural gas transmission and marketing. Regional Natural Gas marketing companies include Mahanagar Gas Limited (MGL) in Mumbai, Gujarat Gas Company Limited (GGCL) in Ahemadabad, and Indraprastha Gas Limited (IGL) in New Delhi.

### **C. Industry Bodies/Others**

- **Directorate General of Hydrocarbons (DGH)**

(“About DGH,” 2009)

This body was established under the administrative control of Ministry of Petroleum & Natural Gas by a Government of India Resolution in 1993 to promote sound management of the Indian petroleum and natural gas resources having balanced regard to the environment, safety, technological and economic aspects of the petroleum activity and to review the exploration programmes of companies and advise the Government on the adequacy of these programmes. It is also mandated to advise on development plans for commercial discoveries, audit petroleum reservoirs, regulate preservation, up-keep and storage of data, give advice to Government on compliance issues of safety norms, environmental pollution, etc., in oilfield operations. Additionally it is also engaged in opening up of new unexplored areas for future exploration

and development of non-conventional hydrocarbon energy sources like Coal Bed Methane (CBM) as also futuristic hydrocarbon energy resources like Gas Hydrates and Oil Shale.

- **Petroleum Planning and Analysis Cell (PPAC)**

(“Petroleum Planning,” 2009)

It was set up subsequent to the dismantling of Administered Pricing Mechanism (APM) in the petroleum sector with effect from 1st April 2002 and the abolishing of Oil Coordination Committee (OCC). This cell was attached to the Ministry of Petroleum & Natural Gas to assist in discharge of some of the functions earlier performed by OCC. These functions include, analyzing the trends in the international oil market and domestic prices, subsidy on public distribution system kerosene & domestic LPG, maintenance of data bank to deal with emergencies, forecasting and evaluation of import and export trends. It has also been assigned to wind up the Oil Pool Account.(OPA).

- **Petroleum Conservation Research Association (PCRA)**

(“Corporate Profile,” 2007)

In response to the oil crisis of 1970s, Government of India (GOI) setup Petroleum Conservation Action Group in 1976 for conservation of petroleum products. The group was subsequently reconstituted as Petroleum Conservation Research Association (PCRA) in 1978. The major activities of this body include, conducting education campaigns, literature development, sponsoring R&D activities, field activities, Training and Development & giving conservation awards.

- **Oil Industry Development Board (OIDB)**

(“Oil Industry Development,” 2009)

This body is the outcome of the environment of early 1973 when steep increase in the international prices of crude oil made India realize the need of self-reliance in petroleum & petroleum based industrial raw materials.

The objectives of this board, setup under the Oil Industry (Development) Act, 1974 include:

- (i) Programs for securing self-reliance in petroleum & petroleum based raw materials.
- (ii) Assure necessary resources for execution of such programs.
- (iii) Levying of cess on crude oil and natural gas for the above purposes and to create an Oil Industry (Development) Fund.
- (iv) The fund would be used exclusively to provide financial assistance to the organizations engaged in development programs of oil industry.

- **Oil Industry Safety Directorate ( OISD)**

(“Oil Industry Safety,” 2009)

This is a technical directorate that formulates and coordinates the implementation of a series of self regulatory measures aimed at enhancing the safety in the oil & gas industry in India.

- **Petroleum Federation of India (PETROFED)**

(“Petroleum Federation of,” 2009)

Petroleum Federation of India (PetroFed) has been registered under Societies Registration Act, 1860. The federation members include oil & gas companies and other organizations related to the oil and gas sector.

The aims of PetroFed are:

- (i) Promote interest of petroleum industry.
- (ii) Function as a facilitator for the oil industry in India.
- (iii) Coordinate with governments, regulatory agencies and other representative bodies in the petroleum industry.
- (iv) Work for global competitiveness of the petroleum industry.
- (v) Optimize resources and integration effort.
- (vi) Promote safety, healthy environment, and energy conservation.
- (vii) Coordinate with oil marketing companies for ensuring compliance of “Good Business Practices”.

- (viii) Provide forums for deliberating issues of common interest to industry members.
- (ix) Organize seminars, conferences, training programmes, lectures and publication of technical papers & newsletters.

- **Centre for High Technology (CHT)**

(“Centre for High,” 2009)

This organization has been functioning as a nodal agency for research, exchange of information, assessment of technological requirements etc. in respect of refining and marketing organizations in India. It is also carrying out Integrated Refinery Business Improvement Programme (IRBIP), a special study through Shell GSI in four refineries. A Scientific Advisory Committee on Hydrocarbons set up by MoPNG is advising CHT on R&D matters related to downstream sector. OADB has been funding activities of CHT since its inception.

- **Engineers India Ltd. (EIL)**

(“Engineers India Limited,” 2009)

This organization was established in 1965 to provide engineering and related technical services for petroleum refineries and other industrial projects. However, it has diversified into and excelled in other fields, such as pipelines, petrochemicals, oil & gas processing, offshore structures and platforms, fertilizers, metallurgy and power. EIL now provides a complete range of project services in these fields and has emerged as Asia’s leading design and engineering Company.

- **Petroleum & Natural Gas Regulatory Board (PNGRB)**

(“Petroleum & Natural,” 2009)

This body is the downstream regulator which was formed by the Petroleum and Natural Gas Regulatory Board Act, 2006. It has been entrusted with the task to regulate the refining, processing, storage, transportation, distribution, marketing and sale of petroleum, petroleum products and natural



gas excluding production of crude oil and natural gas. It is also assigned to protect the interests of consumers and other entities engaged in the specified activities, ensure uninterrupted & adequate supply, and promote competitive markets.

### **2.2.5 The Indian Upstream Sector** (“Exploration and Production,” 2007; “Indian Upstream Sector,” 2009)

A review of literature revealed that India has an estimated sedimentary area of 3.14 million square kilometers comprising 26 sedimentary basins. Of the total sedimentary area 1.35 million sq. km are in deep water while 1.79 million sq. km area is on land and in shallow offshore areas. There is a huge untapped potential as only 22% of the total area is moderate to well explored. The Indian upstream sector has traditionally been dominated by ONGC & OIL. However in order to ensure tapping of the potential in unexplored areas, energy security & inviting global technical expertise, GOI opened the sector in 1991-92 for private participation and awarded 35 blocks to private players on a nomination and/or bidding basis.

However the sector received a boost when GOI announced the New Exploration and Licensing Policy (NELP) in 1997-98, with the objective of institutionalizing the bidding process for oil and gas blocks and providing a level playing field for all companies in the upstream sector. Before implementing the NELP, only 11% of Indian sedimentary basinal area was under exploration. Since operationalizing NELP in 1999, in seven rounds of NELP held so far, 203 Production Sharing Contract (PSC) have been signed. The area under exploration has been increased more than four times, covering 47.5% of the Indian sedimentary basinal area.

During XI plan period, area under exploration has been targeted as 80% of total area of Indian sedimentary basins. In NELP, 68 oil and gas discoveries have been made by private/joint venture (JV) companies in 19 blocks, which have added more than 600 MMT of oil equivalent hydrocarbon

reserves. Bidding for NELP VIII has recently been concluded with the award of 36 blocks out of the 70 on offer.

Energy sources other than oil and gas that are also being focused on in the Upstream Sector include coal bed methane (CBM), gas hydrate & shale gas. CBM (mainly methane gas trapped in coal) is the area where progress has been made and so far three rounds of bidding have been completed. CBM IV with 10 blocks on offer has recently been concluded and bids were received for eight blocks. As India is the fourth largest coal producer and boasts of the third largest proven coal reserves there is a huge potential for CBM recovery estimated at 162.38 trillion cubic feet (tcf). Of the 26 blocks awarded so far in CBM, commercial production has commenced in one block, that is GEECL's block located in south Raniganj, West Bengal (estimated gas-in-place reserves of 1.92 tcf). The other CBM projects that have made some progress on the development front include Essar Oil Limited's block in Raniganj (estimated gas in place reserves of 3.1 tcf) and ONGC-Coal India Limited's block also in Raniganj (estimated reserves of 1.51 tcf).

### **2.2.6 The Indian Downstream Sector**

The downstream sector includes two major areas – refining and petro retailing (marketing of petroleum products).

#### **2.2.6.1 Refining in India**

Since independence there has been significant growth in the number of refineries from one to twenty. The increase in the refining capacity which stood at 0.25 MMTPA at the time of independence is presently 177.97 MMTPA. Earlier refining in India witnessed nationalization of private oil companies operating in India. In 1974, Hindustan Petroleum Corporation Limited (HPCL) was created after the takeover and merger of Esso and Lube India Undertaking (“Our Roots,” 2008). In 1976, Caltex was taken over by GOI and merged with HPCL in 1978. Also in 1976 GOI took over the assets of Burmah-Shell Group of Companies to form Bharat Refineries Limited (“The Journey,” 2008), which was renamed as Bharat Petroleum Corporation

Limited in 1977. It was the first refinery to process the newly found indigenous Bombay High crude.

The Indian refining sector was de-licensed (“Petroleum and Natural,” 1999) effective from June 1998. Some of the other measures introduced by the Government included:

- The private and joint sector refineries were permitted to import crude oil for actual use in their refineries with effect from July 1998.
- Introduction of a 5 year tax holiday up to 2003, for refineries setup after October 1, 1998.

Following this, Reliance Petroleum Limited (RPL) setup a refinery in 1999 with a capacity of 27 MMTPA at Jamnagar (“Refineries in India,” 2005). Later on, Essar Oil Limited commissioned its 10.5 MMTPA refinery at Jamnagar in 2006 (“Essar Oil Limited,” 2009). RPL commissioned its second refinery (export oriented) with capacity of 29 MMTPA at Jamnagar in 2008 (“Reliance Petroleum Commissions,” 2009). RPL was merged with Reliance Industries Limited (RIL) in 2009 (“Merger of Reliance,” 2009).

With the objective to make stand-alone refineries more strong and competitive in the de-regulated environment, GOI undertook the following measures in 2001:

- Bongaigaon Refinery & Petrochemical Limited (BRPL) and Chennai Petroleum Corporation Limited (CPCL), were made subsidiaries of Indian Oil Corporation Limited (IOCL). In March 2009, BRPL was amalgamated with IOCL (“Milestones,” 2009).
- Numaligarh Refinery Limited (NRL) and Kochi Refinery Limited (KRL), were made subsidiaries of Bharat Petroleum Corporation Limited.

**Present Status**

The Indian crude oil refining sector consists of ten companies operating a total of 20 refineries, with a combined annual installed capacity of 177.97 MMTPA as on January 1, 2009 (“Oil and Gas,” 2009). All the refineries except RIL & EOL are public sector enterprises. A total of 91.99 MMTPA capacity would be added by the year 2012 (“Report of the,” 2006).

India is now poised to become a refining hub as:

- It enjoys cost competitiveness and location advantage. The cost competitiveness arises due to lower power and labour costs as well as lower capital costs by as much as 25 to 50 percent over other Asian counterparts. As for location, India is strategically located en route of Middle East crude for East Asian and Pacific rim countries (“India Energy Outlook,” 2007).
- India is having surplus refining capacity and is a net exporter of petroleum products since 2001 (“Refining Outlook,” 2008).
- GOI has been providing tax incentives and fiscal incentives to new refineries. As an example, RPL export oriented refinery at Jamnagar has benefited from its Special Economic Zone Status (“Investing in India,” 2009). As per Budget 2009 tax holiday eligibility has been modified. Now all undertakings will be eligible for the tax holiday as long as the undertaking commences refining before April 1, 2012 (The Economic Times, 17 July, 2009).

**2.2.6.2 Petro Retailing in India****2.2.6.2.1 Background**

Review of literature reveals that it was in 1882 that Petro Retailing started in India with the supply of kerosene by Standard Oil Company (“Reaching Petroleum Products,” 2000). STANVAC (ESSO), Burmah Shell, Caltex and Indo-Burma Petroleum Co.(IBP) were marketing petroleum products in the country at the time of Independence (“Reaching Petroleum Products,” 2000). In 1959 GOI setup the Indian Oil Company (IOC), a government

company, for marketing of petroleum products. This company was entrusted with the task of setting up marketing infrastructure and distribution network. It was the only company permitted to handle imports of refined products and their marketing in the country (“Reaching Petroleum Products,” 2000).

Following the World Oil Crisis of the early 1970’s and Indo-Pak war of 1971 GOI started nationalizing (“Subsidies Driving Top,” 2008) the assets of the multinational companies operating in India. IBP, Esso, Caltex and Burmah-Shell were nationalized in 1972, 1974, 1976 and 1976, respectively. The Esso group operating in India became HPC, into which Caltex was merged in 1978. Burmah-Shell became Bharat Refineries Limited (now BPC). Following nationalisation, only PSUs were allowed to participate in the petroleum industry. The only exception being Castrol which was permitted to continue operating in the lubricant sector. Virtually all aspects of the oil industry were highly regulated, including investment, production, pricing and distribution of petroleum products sold in the market.

Administered Pricing Mechanism (APM) came into existence in 1977 (“Pricing Petroleum,” 2005). APM was further amended in 1986 as per recommendations of the Oil Costs Review Committee (OCRC). Under APM the pricing of petroleum products was based on a “cost plus” pricing system under which the exploration and production companies, refineries and oil marketing companies were all guaranteed fixed returns on net worth plus reimbursement of eligible operating costs. The selling prices of any given petroleum product were uniform for each marketing company within a specific area except for differences arising out of variation of tax rates of different states. “Oil Pool” accounts were maintained to operate APM, whereby cash flows relating to subsidies, adjustments & various charges were managed in such a way that cross-subsidization of Public Distribution System (PDS) kerosene and domestic Liquefied Petroleum Gas (LPG) could be carried out by income from other products like Motor Spirit (MS). An Oil Coordination Committee (OCC) was setup to manage oil pool accounts. APM insulated the exploration & production companies, refineries and marketing

companies from international price fluctuations. APM broke down due to insufficient recovery under all the heads of pool accounts.

In November 1997, the government announced a phased dismantling of APM with full dismantling by April 2002 (“Pricing Petroleum,” 2005). Effective April 1, 1998 prices of all petroleum products excepting MS, HSD, Aviation Turbine Fuel (ATF) , PDS kerosene and domestic LPG were decontrolled (“IBP Co.,” 2004, p.70; “Marketing & Distribution,” 2001). Also effective April 1, 2001 the price of ATF was decontrolled (“IBP Co.,” 2004, p.70; Marketing & Distribution,” 2001). Finally effective April 1, 2002, prices of MS and HSD were also decontrolled (“IBP Co.,” 2004, p.70; “Marketing Division,” 2005). This marked the complete dismantling of APM excepting for PDS kerosene and domestic LPG (“IBP Co.,” 2004, p.70).

The petro retail business was deregulated in 2002 with the following changes:

**1. Selection & Augmentation of Retail Dealerships of existing players**  
(“IBP Co.,” 2004, p.71)

The Sales Plan Entitlement was dismantled and the use of Dealer Selection Boards discontinued. The Oil Marketing companies were free to setup new retail outlets at locations which they desired.

**2. Marketing Rights to New Entrants**

GOI vide notification dated March 8, 2002 permitted private and other companies to set up retail outlets for dispensing transportation fuels – MS, HSD & ATF subject to them meeting the investment criteria and other conditions laid down vide notification (“IBP Co.,” 2004, p.150).

- Companies owning and operating refineries with an investment of at least Rs. 20 bn or oil exploration and production companies producing at least 3 million tonnes of crude oil annually, entitled to marketing rights for transportation fuels.

- Authorization to market transportation fuels is also available to a company investing or proposing to invest Rs. 20 bn in exploration and production, refining, pipelines or terminals.
- The requirement of the specified amount of actual or proposed investment would be applicable to the total of the various investments/proposed investments by the company in the eligible activities and would not be restricted to any single activity.
- The investment made or proposed to be made in the eligible activities would be in form of equity, equity-like instruments such as convertible debentures (fully or partially), or debt with recourse to the company.

**3. Other Conditions** (“Marketing Division,” 2005)

- Permission granted for setting up specific number of retail outlets.
- New entrants required to setup at least 5.6% of the sanctioned retail outlets in remote areas and 5.3% of their sanctioned retail outlets in low service areas.
- New entrants would abide by marketing service obligations and retail service obligations as notified by the GOI from time to time.

**2.2.6.2.2 Scenario Post Deregulation**

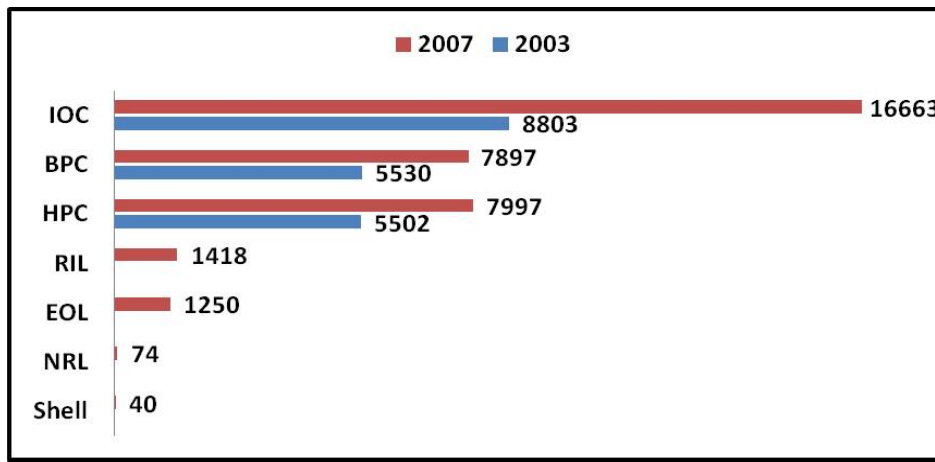
**A. Entry of New Players**

Post de-regulation Reliance Industries Limited, Essar Oil Limited, Numaligarh Refineries Limited and Shell India have entered the petro retailing market in India.

**B. Tremendous Retail Network Expansion** (Thangapandian, 2007)

Deregulation resulted in an explosion of retail outlets setup by the National Oil Companies (NOC) and private companies between 2003 to 2007.

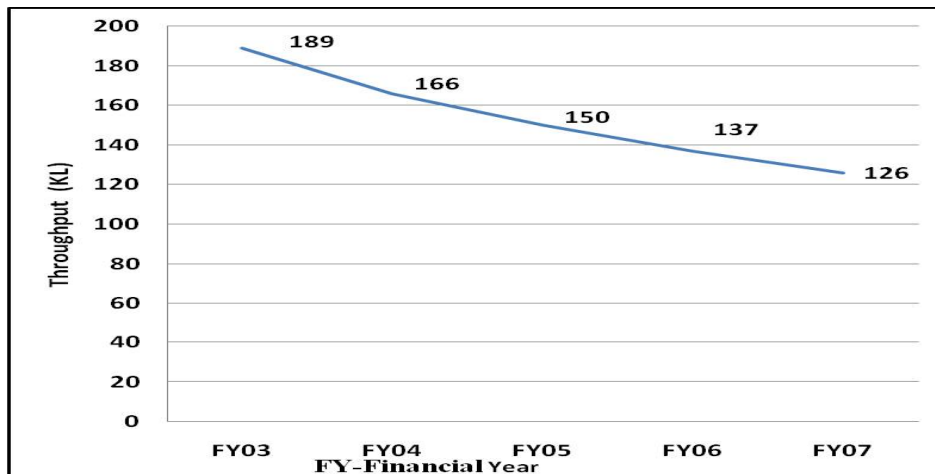
As shown in Fig 2.7., the number of retail outlets has almost doubled from 19835 to 35339 respectively.



**Fig. 2.7: Retail Network Expansion**  
(Thangapandian, 2007)

**C. Perceptible Drop in the Average Throughput per Retail Outlet**  
(Thangapandian, 2007)

The market for MS and HSD has increased only at an annual growth rate of 5%. As there has been tremendous growth in the number of retail outlets - the average throughput per retail outlet has decreased substantially as shown in Fig. 2.8. This has resulted in lower ROI and delayed payback period for the stakeholders.



**Fig. 2.8: Throughput Per Retail Outlet**  
(Thangapandian, 2007)

**2.2.6.2.3 Present Status**

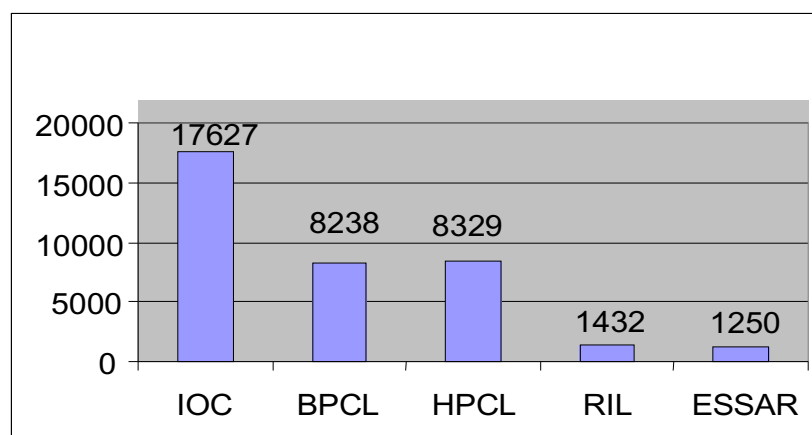


### A. Subsidizing of Fuel Retail Prices (“Oil and Gas,” 2009)

GOI has been subsidizing the prices of retail MS/HSD in order to protect the Indian consumer from the volatility of international crude oil prices. This subsidy is being shared between the NOC, the Government (by issuing oil bonds to the NOC to compensate the for their under-recoveries), and the upstream PSU firms of ONGC and OIL. In May 2008 the NOC incurred daily losses of Rs.600 crores on the retail sales of diesel, petrol, LPG and kerosene when the international crude oil prices were at peak level of \$128 plus (“Subsidies Driving Top,” 2008).

### B. Continued Dominance of NOC (“Oil and Gas,” 2009)

As a result of the indirect control of the GOI over retail fuel prices, the petro retail market continues to be dominated even after deregulation by the NOC’s as shown in Fig. 2.9. Indian Oil has a 50 % market share, HPCL and BPCL have about the same market share of 25% each (“Oil and Gas,” 2009). The private players like Reliance, however, could not sustain operations because it could not match the subsidized retail prices of NOC, and their sales were almost nil. As a result Reliance had to shut down all its 1432 petrol pumps (“Reliance closes all,” 2008).








**Fig. 2.9: Company-wise retail outlets as on FY08-09**  
 (“Oil and Gas,” 2009)

### C. Evolution from Commodity Marketing to differentiation through Brands

Prior to deregulation only plain vanilla MS/HSD were sold by the petro retailing companies. Subsequent to deregulation all the petro retailers have launched branded fuels as shown in Table 2.2.

**Table 2.2: Branded MS and HSD of NOC**

Company	MS		HSD	
IOC	XTRAPREMIUM (91 Octane Petrol with Friction Buster)		XTRAMIL E (Super Diesel)	
BPC	SPEED 93 (93 Octane Petrol)		Hi Speed Diesel	
	SPEED 97 (97 Octane Petrol)			
HPC	POWER		Turbojet	

### D. Assured Quality & Quantity (Q&Q) of Products

There has been an increased focus of the petro retailing companies on ensuring the correct quality and quantity (Q&Q) for the customers.

Some of the major efforts undertaken to assure Q& Q include:

- Retail automation** (“Product Responsibility,” 2008; “Sustainability Outlook,” 2008; “Annual Report,” 2008)  
Automation of petrol pumps selling more than 200KL per month.
- Delivery vehicle tracking** (“Product Responsibility,” 2008; “Sustainability Outlook,” 2008; “Annual Report,” 2008)  
Installation of Global Positioning System for complete monitoring of movement of all the company owned/dealer owned/contractor owned tank trucks.

3. **Marker system** (“Product Responsibility,” 2008; “Sustainability Outlook,” 2008; “Annual Report,” 2008)

Introduction of marker on kerosene at all the depots. With marker, adulteration with kerosene of even low level can be detected.

4. **Tank trucks fitted with tamper proof locks** (“Club HP,” 2008; “Annual Report,” 2008). The NOCs have introduced new tamper proof tank-truck locking systems to prevent en-route adulteration by transporters.

5. **Branding of ‘Q&Q’ by NOC’s**

*Indian Oil Corporation Limited*

IndianOil’s XTRAcare E branded full service petrol stations assure ‘Q&Q’ for it’s customers. These pumps are third-party certified by M/S Bureau Veritas (“Annual Report,” 2008)

*Bharat Petroleum Corporation Limited* (“Pure for Sure,” 2009)

Has introduced Q&Q by branding Q&Q in form of ‘Pure for Sure’ on it’s retail outlets. ‘Pure for Sure’ sign - an outturned palm forming a circle with the thumb and the first finger - also imprinted on the dispensing units and on the back of the blue uniform sported by pump attendants, and TUV’s certificate displayed at the outlet. At such retail outlets, Bharat Petroleum guarantees that the correct quality and quantity are dispensed.

*Hindustan Petroleum Corporation Limited* (“Club HP,” 2008)

Assures Q&Q through it’s ‘Club HP’ outlets. These outlets carry the assurance of HPCL’s ‘Good Fuel Promise’ and delivers the right quality and quantity of the products on offer.

## **E. Customer Centric Forecourt Services**

### **1. Courteous Service**

Customers are recognized and acknowledged, greeted with a smile, made to feel special and cared for by the employees (“Pure for Sure,” 2009). The highly trained attendants and forecourt managers in the petrol pump make this possible.

## **2. Efficient fuelling (“Pure for Sure,” 2009)**

Every attempt is made to ensure that the fueling is quick and efficient so that the customer’s time is not wasted.

## **3. Value Added Services**

Windshield wipes and free tyre pressure checks are carried out in shortest time to provide valuable services to customers.

### **2.3 NON-FUEL OFFERINGS**

#### **2.3.1 Definition of Non-Fuel Offerings**

A study of literature reveals no definition for “Non-Fuel Offerings”. Hence the following definition of “Non-Fuel Offerings” is proposed:

*All offerings, products and services other than auto fuels and those used along with auto fuels i.e. petrol, diesel, auto LPG, CNG, lubricants, and fuel additives which do not affect the norms of petro retail outlets and are sold on petro retail outlets, are non fuel offerings.*

#### **2.3.2 Need for Non-Fuel Offerings**

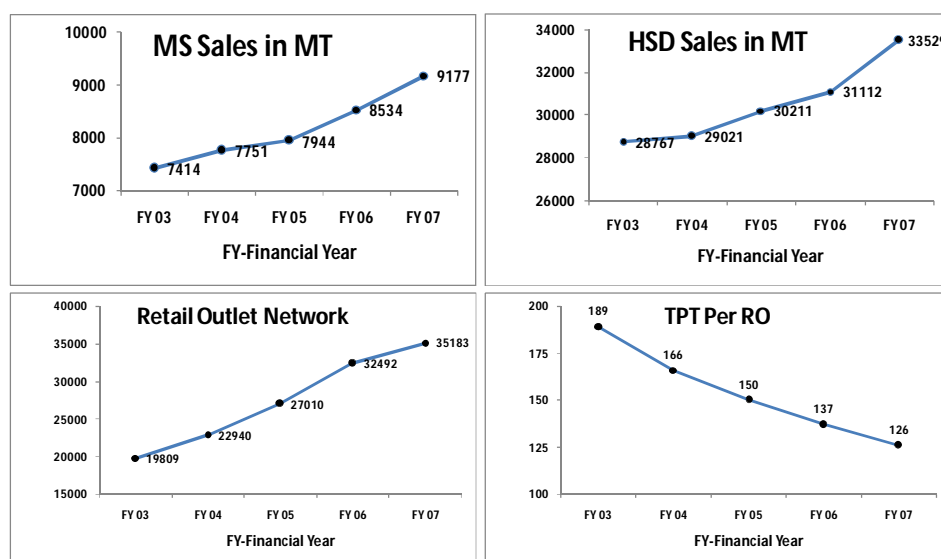
The need for non-fuel offerings at the petro retail outlets can be understood in the context of challenges of the petro retailing companies and how the non-fuel offerings offer the biggest opportunities for facing the challenges.

##### **2.3.2.1 Challenges of Petro Retailing**

With the de regulation of the petroleum sector and the change in the retail scenario of the petro business, more and more oil companies are moving towards a customer centric and services oriented approach. They are competing with each other to reinvent themselves and capture the biggest market share. In this process they are also facing challenges.

Review of literature reveals that some of the common challenges facing the Oil companies which have been identified by industry experts are:

- a. Rising crude prices from US\$ 40 (Jan. 2004) to US \$ 109 (Mar.2008) but not proportional increase of the petrol and diesel pump prices in India (as government is under political pressure to keep the inflation in check) (Thangapandian, 2007; “Shell India,” 2008; Sinha, 2007)
- b. High and increasing real estate prices for setting up of Petroleum retail outlets (Thangapandian, 2007; “Shell India,” 2008; Suri, 2007; Unnikrishnan, 2007)
- c. Profitability of Retail Outlets: ( Thangapandian, 2007; “Shell India,” 2008; Sahi, 2007; Sinha, 2007; Unnikrishnan, 2007)
  - Unplanned growth of Retail Outlets
  - Volumes have only increased at an annual growth of about 5 %
  - The result is that average throughput per RO has declined substantially. Consequently there is lower ROI and delayed payback period for the stakeholders. These are shown in Fig. 2.10 below:



**Fig. 2.10: Motor Spirit (MS) Sales, High Speed Diesel (HSD) Sales, Retail Outlet Network and Throughput (TPT) per Retail Outlet (RO) for Financial Year 2003 to 2007**  
(Thangapandian, 2007) (FY-Financial Year)

### 2.3.2.2 Non-Fuel Offerings to the Rescue

The oil companies have realized that of the above challenges it is only the last challenge in which they can influence the outcome. Profitability of the petro retail outlet can be improved if the petro retail outlet can increase its revenue. Revenues can be improved by offering non-fuel services.

The concept of offering non-fuel services at petrol stations is not new. It began in the 1980's when British Petroleum launched its first convenience store. Non-fuel business contributes as high as 50% to the profits in UK as compared to 10% in India – Fig.2.11 (“Fuel Retailing,” 2008).

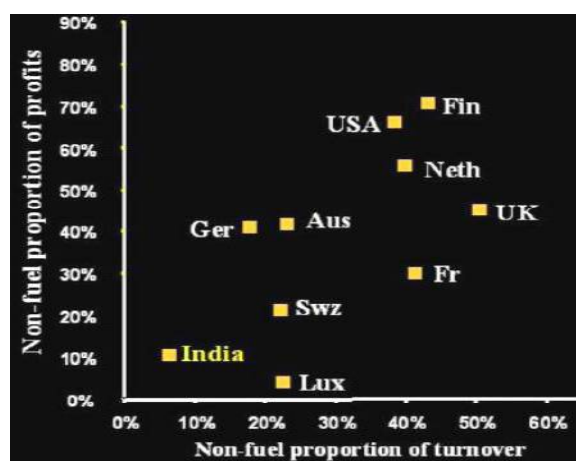


Fig. 2.11: Non-Fuel proportion of profits vs. Non-fuel proportion of turnover (“Fuel Retailing,” 2008)

Hence there is a huge opportunity for non-fuel offerings in India which the Oil companies want to cash on.

Literature available on the subject reveals that besides making the pump profitable, non-fuel services also enable the oil company to:

#### 1. Provide Convenience to Customers (Hira, 2005)

Convenience stores which form a part of non-fuel offerings at petro retail outlets help the customers to save time by shopping at the same location where they fill their vehicles with fuel.

## 2. Drive Positive rub-off on Fuel Sales (Hira, 2005)

Industry estimates confirm that there are positive rub-off of 2-20% on fuel sales.

## 3. Create Differentiation (Sen, 2005)

Literature points to an interesting fact that petro retail outlets with non-fuel offerings will raise the entry-barriers for new entrants.

Also the view of the Oil companies has been reiterated by oil industry consultants who have estimated that non-fuel offerings could contribute up to 20 % share of revenues (“Succeeding in Indian,” 2005)

### 2.3.3 Non-Fuel Offerings of NOC

Although there a large number of non-fuel offerings possible at the petro retail outlets, the NOC have focused on certain of them only. After an in depth review of literature, the non-fuel offerings listed in Table 2.3 were found being offered by the NOC.

**Table 2.3: Select Non-Fuel Offerings of NOC**

S.No.	Non-Fuel Offering	Source
1.	Convenience Store (Stores that provide a wide range of convenience items to customers).	(Chaudhary, 2003; “Indian Oil launches,” 2004; Hira, 2005; Sen, 2005; “Bharat Petroleum targets,” 2008)
2.	Food Outlet	(“Indian Oil launches,” 2004; Hira, 2005; “Bharat Petroleum targets,” 2008)
3.	ATM	(“Indian Oil launches,” 2004; Hira, 2005; “BPCL Retail,” 2008; “Bharat Petroleum targets,” 2008)
4.	Car wash	(Hira, 2005)
5.	Pollution Under Control check	Available at majority of pumps.

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<b>S.No.</b>	<b>Non-Fuel Offering</b>	<b>Source</b>
6.	Fleet Card Facility Are cards for fleet management of leet operators. These are primarily for centralized billing & vehicle tracking.	(“Indian Oil launches,” 2004; Hira, 2005)
7.	Vehicle Servicing	(Hira, 2005; “Club HP,” 2008)
8.	Money Transfer	(Hira, 2005; “Bharat Petroleum targets,” 2008)
9.	Dhaba	(Chaudhary, 2003; “Welcome to Bharat,” 2006; “BPCL Retail,” 2008)
10.	Dormitory	(Chaudhary, 2003; “Welcome to Bharat,” 2006)
11.	Mobile Charge	(Hira, 2005, “The ‘In& Out’”, 2008)

Hence, these non-fuel offerings were selected for the present study.