TEAM ALCHEMIST

IIT KHARAGPUR

Role of Non-fuel activities in petro-retailing

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Indian Downstream Sector

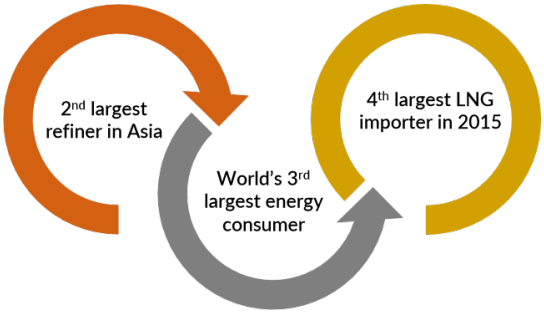


Figure 1.1: Overview of the market

1.1 Oil Supply and Demand in India

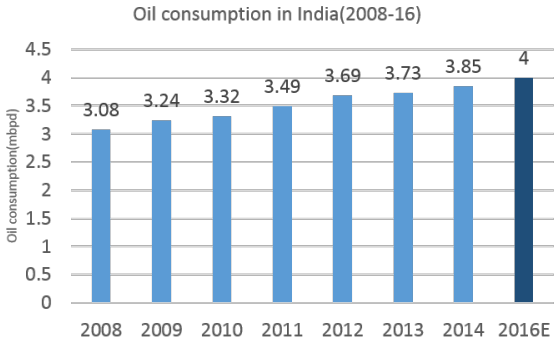


Figure 1.2: Oil consumption in India[4]

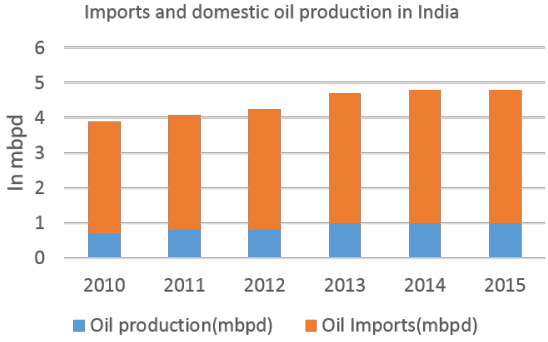


Figure 1.3: Imports and domestic oil production in India[4]

1.2 Gas Supply and Demand in India

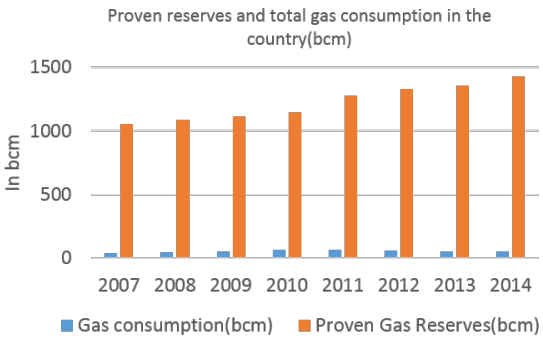


Figure 1.4: Gas reserves and consumption in India[4]

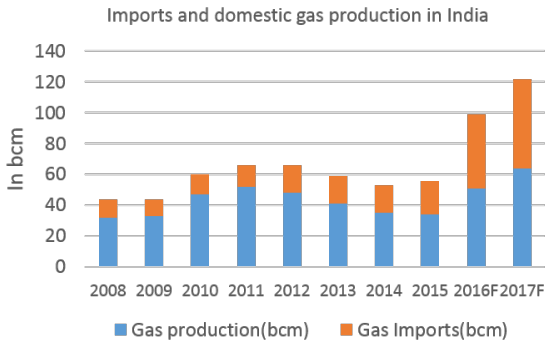


Figure 1.5: Imports and domestic gas production in India[4]

1.3 Refining capacity and Competitors

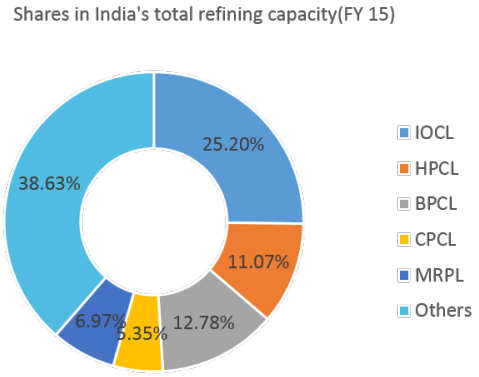


Figure 1.6: Shares in India's total refining capacity[5]

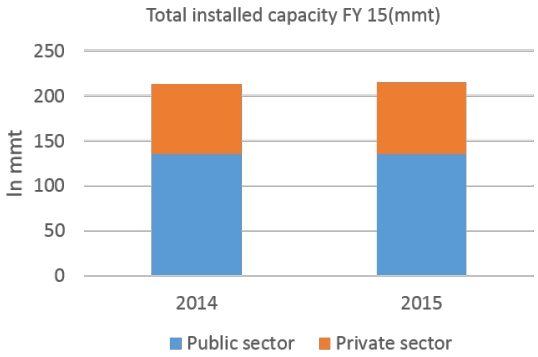


Figure 1.7: Total installed capacity[5]

The detailed competitor list is given here(sheet 1)[6].

The M&A list in the Indian Oil and Gas sector is given here(sheet 2)[7].

1.4 Distribution and Marketing

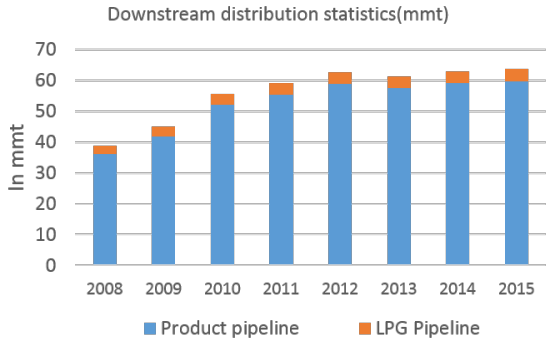
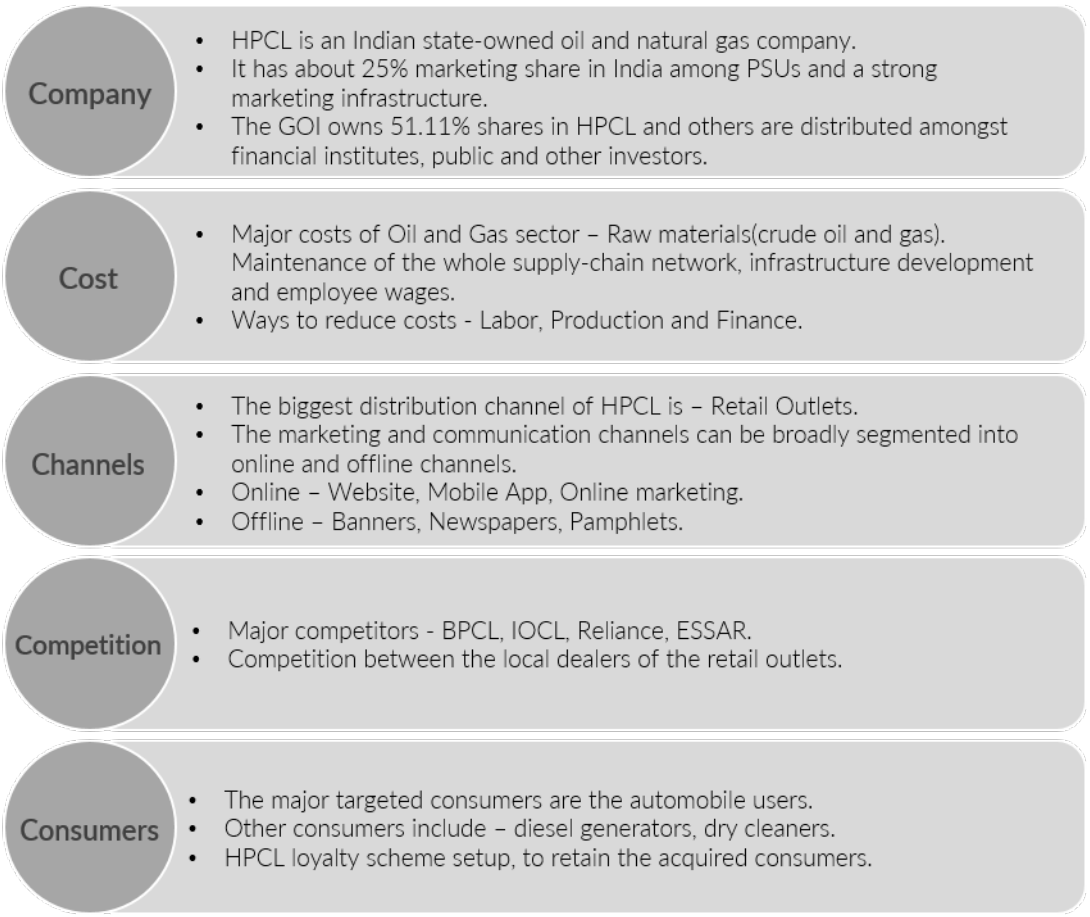


Figure 1.8: Downstream statistics[5]

Pipeline	Capacity(mmtpa); April 2015	Length(km);April 2015
Product Pipeline	86,761	14463
LPG Pipeline	5,330	2334

Figure 1.9: Pipeline statistics[5]

HPCL - Five C's


Company
HPCL is an Indian state-owned oil and natural gas company.
It has about 25% marketing share in India among PSUs and a strong marketing infrastructure.
The GOI owns 51.11% shares in HPCL and others are distributed amongst financial institutes, public and other investors.
Cost
Major costs of Oil and Gas sector – Raw materials(crude oil and gas). Maintenance of the whole supply-chain network, infrastructure development and employee wages.
Ways to reduce costs - Labor, Production and Finance.
Channels
The biggest distribution channel of HPCL is – Retail Outlets.
The marketing and communication channels can be broadly segmented into online and offline channels.
Online – Website, Mobile App, Online marketing.
Offline – Banners, Newspapers, Pamphlets.
Competition
Major competitors - BPCL, IOCL, Reliance, ESSAR.
Competition between the local dealers of the retail outlets.
Consumers
The major targeted consumers are the automobile users.
Other consumers include – diesel generators, dry cleaners.
HPCL loyalty scheme setup, to retain the acquired consumers.

Foreword[1]

3.1 Petro-retailing

HPCL has revolutionized retailing of Petroleum products in India. HPCL being one of the major contender with 13,000 odd outlets across India, is set to define new trends in the petro-retailing segment by 2030.

3.2 Special offers(already deployed)

3.2.1 Club HP

The "Club HP" concept aims to provide the assurance of "Quick Fills", "Expert, Personalised Service", "Total Vehicle Management" and "Consumer Conveniences". Under this concept, HPCL provides -

- Vehicle Insurance related counsel.
- ATMs, Bill payments and Credit cards.
- Vehicle care.
- Basic amnenities.

3.2.2 e-Fuel Stations

Retail Automation is the automation of all the operations and business processes of a Retail Outlet. This is achieved by capturing, collating and analyzing all the transactions electronically. The main objective of Retail Automation is Customer Relationship Management. Manual intervention is eliminated, and speed of transaction operations is increased, resulting in a Quick Fill Experience. These automated outlets have been branded **"e-fuel stations"**.

3.2.3 Good Fuel Promise

A quality product is one that complies with prescribed specifications and is free from any contamination or adulteration. To ensure that our consumers get contamination free products, personnel at our outlets check the products regularly - **Filter Paper Test (to check petrol), Density Check (to check petrol and diesel), Checking Lubricants.**

3.2.4 Club HP Star

In addition to Club HP concept,

- Quick Service - To reduce waiting time.
- Quality Quantity Assurance (QQ) - stricter adherence to Standard Operating Practices.
- CCTV Security.
- E-Receipt and Hi-Tech Automation - All the 'Club HP Star' retail outlets are fully automated. .

3.2.5 My HPCL mobile apps

The HPCL app(for Windows, iOS and Android platforms) has the features - Outlets services, My Vehicle, Notifications, Help Line, Feedback, Help Tips. It also provides links for Insurance Renewal(with partner company), DTPLUS(HPCL Loyalty Program for Fleet owners) and HPGAS(LPG).

3.2.6 Different campaigns

Sales campaigns confined to locations, Business model campaigns.

The Setting

4.1 Promotion of Cashless payments[1]

HPCL has already focused on this segment which is catalysed by the latest demonetisation setup.

- Online Wallets - Paytm, SBI e-BUDDY, Freecharge and other wallets across Pan India.
- Use of debit and credit cards.
- Drive Truck Plus and Payback cards.

4.2 Tie-up with an IoT Startup

Figure 4.10: Internet of Things[2]

There are a lot of Indian Startups and established companies that work in the field of Internet of Things.
Internet of Things is basically a proposed development of the Internet in which everyday objects have network connectivity, allowing them to send and receive data[3].
This tie-up will result in, setup of real time data acquisition systems across all the major HPCL outlets in every State and Union Territory in India.

4.3 Split up in Phases

Present Year - 2016
Mission - 2030
No. of Years - 14

- Phase I(2017-2021) - Development of IoT systems at major outlets across Pan India.
- Phase II(2022-2026) - Development of IoT systems at other/left-out outlets across Pan India.
- Phase III(2027-2030) - Connect all the retail outlets - 13000(old)+100(new).

The Plot

5.1 IoT Setup

The IoT setup mentioned in the earlier context will acquire the real time data of all the e-payments done at the outlets across India. This acquisition will be done on daily basis.

5.2 Scheme

A giveaway scheme to be determined which will focus on the following points -

- All the e-payments done at the retail outlets to be monitored.
- Ignore all the payments below Rs 199(urban) and Rs 499(highways) - Eligibility criteria.
- Maintain an annual database of all the eligible payments(¿199 or ¿499) state-wise and Union Territory-wise.

Now, HPCL will giveaway 100 City bikes/Scooters every year till 2030(14 Years).
This can also be overlooked towards a tie-up between automobile company(Hero, Honda, Bajaj) and HPCL for a long-term output.
The distribution of 100 prizes will be based State-wise and Union Territory-wise(population density being the essential factor of distribution), given here.

Major States	**Other States**	**Union Territories**
a) Average no. of Prizes - 5 b) Total of 2 Prizes for 1 lucky customer each in the top 2 outlets of the state, in terms of annual turnover	a) Average no. of Prizes - 2 b) 1 Prize for a lucky customer(s) in the top outlet of the state, in terms of annual turnover	a) Average no. of Prizes - 1
c) 3 Prizes for top 3 annual spenders of the state	c) 1 Prize for top annual spender(s) of the state	c) 1 Prize for top annual spender(s) of the state
d) Top 2 outlets of the state, in terms of annual turnovers, will also be awarded separately.	d) Top outlet of the state, in terms of annual turnovers, will also be awarded separately.	

Table 5.1: Prize distribution parameters

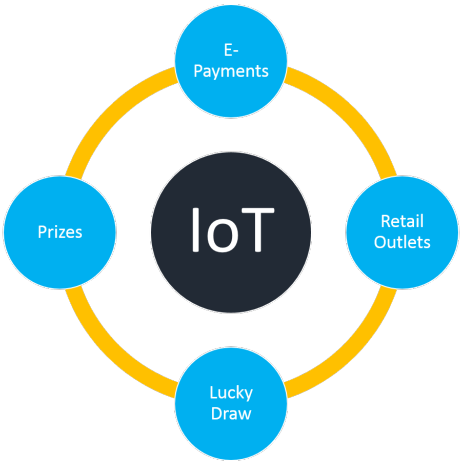
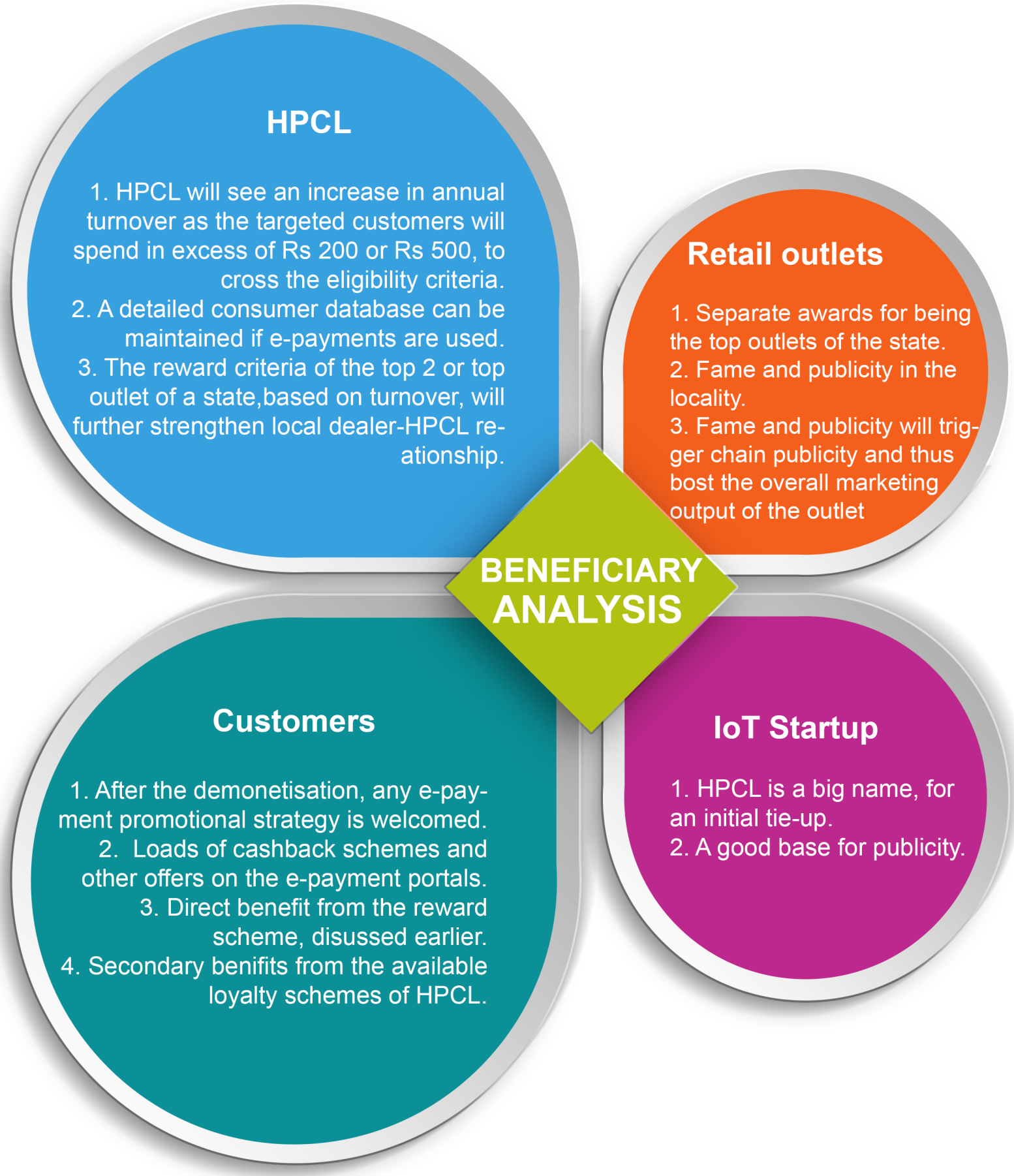


Figure 5.11: Schematic representation[2]



Inter-dependent beneficiary analysis of the overall scheme

The Financials

6.1 Annual Cost Analysis(annual)

- Cost of each Scooter/bike = Rs 70,000(Average).
- Cost of 100 vehicles = Rs 70,00,000.
- Maintenance and IoT setup cost = Rs 15,00,000.
- Miscellaneous overheads = Rs 5,00,000.
- **Total = Rs 90,00,000**.

Note: *The maintenance and setup of IoT will not cost much because it won't have to setup servers or extra hardwares in the outlets. It will just track down all the e-payments done at the outlets, which can be done sitting at a static headquarter and minimal manpower.*

6.2 Detailed cost analysis and valuation 2017-2030

Profit/Loss analysis of the last 9 years has been done here(sheet 1).
We will refer to Average Profits from here only.

6.2.1 Calculation of Growth rate

- Profit of 2007-2008 = Rs 1,134.88Cr.
- Profit of 2015-2016 = Rs 3,862.74Cr.

$$\frac{\frac{Final-Initial}{Initial} * 100}{No.of Periods} = Growth\% \tag{6.1}$$

$$\frac{\frac{3862.74-1134.88}{1134.88} * 100}{9} = \mathbf{26.70\%} \tag{6.2}$$

But for the next 14 Years, we will consider a growth rate of **15%** in the profit calculation, to minimize the deviation from any sudden ambiguities in the Profit/Loss data. Everywhere else(cost analysis), growth rate will be assumed to be 10%(avg inflation rate of the country).

6.2.2 Calculation of Rate of Return%(Stock Price method)

- Stock price of HPCL on April 2, 2004 = Rs 176.33.
- Current Stock price of HPCL = Rs 465(avg).

$$\frac{\frac{Final-Initial}{Initial} * 100}{No.of Periods} = Rate\% \tag{6.3}$$

$$\frac{\frac{465-176.33}{176.33} * 100}{12} = \mathbf{13.64\%} \tag{6.4}$$

6.2.3 Valuation(Present Value) according to Growth rate

$$\begin{aligned} 2017 &= c \\ 2018 &= c(1+g) \\ 2019 &= c(1+g)^2 \\ &\vdots \\ 2030 &= c(1+g)^{13} \end{aligned} \tag{6.5}$$

where c = Initial Investment(Rs 90,00,000), g = Growth rate(10%)
The data is given here(sheet 2).

Note: *Growth rate here is taken to be 10%, the avg. annual inflation rate of the country, because these expenses and investments are independent of the growth rate of HPCL. Thus, only the national inflation rate will be the deciding factor herein.*

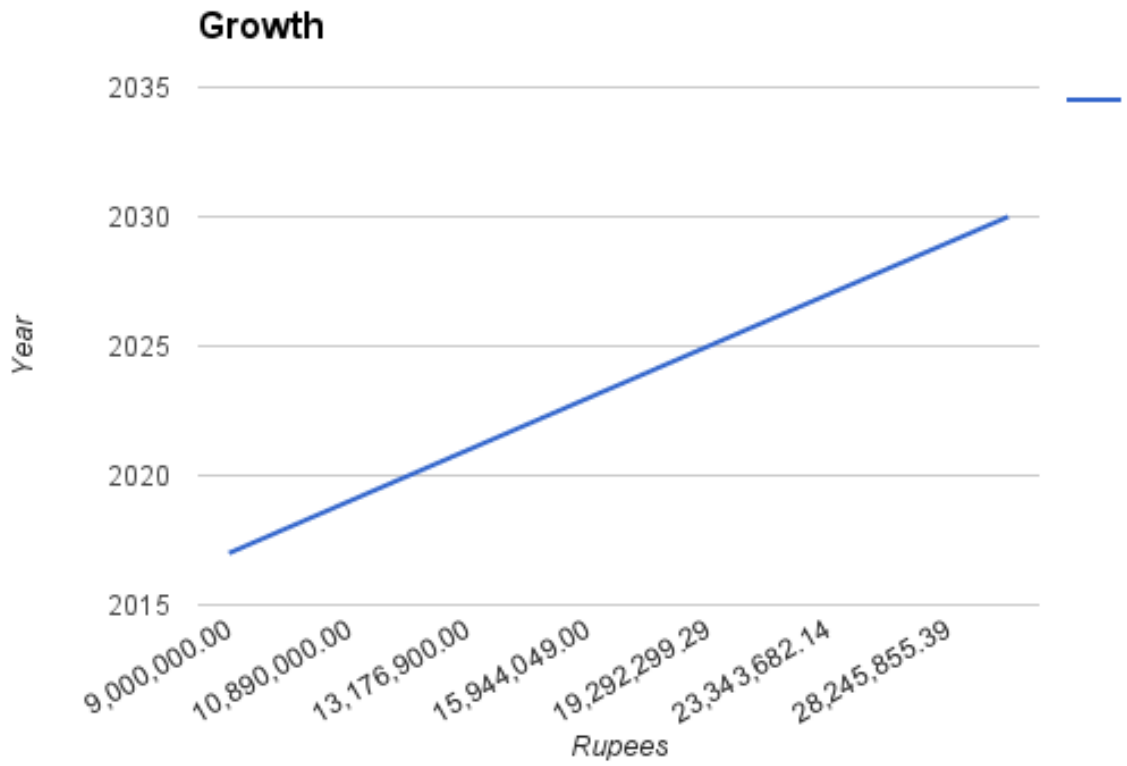


Figure 6.12: Valuation according to growth% - plot

6.2.4 Valuation(Present Value) according to Growth rate and Rate of Return

$$
\begin{aligned}
2017 &= \frac{c}{(1+r)} \\
2018 &= \frac{c(1+g)}{(1+r)^2} \\
2019 &= \frac{c(1+g)^2}{(1+r)^3} \\
&\vdots \\
2030 &= \frac{c(1+g)^{13}}{(1+r)^{14}}
\end{aligned}
\tag{6.6}
$$

where c = Initial Investment(Rs 90,00,000), g = Growth rate(10%), r = Rate of Return(13.64%)
The data is given here(sheet 2).

Note: *Growth rate is taken to be 10% for the same reason mentioned above. The rate of return is taken to be 13.64% because there will be some direct/indirect return from this investment, and this rate shall be congruent with the overall rate of return of HPCL*

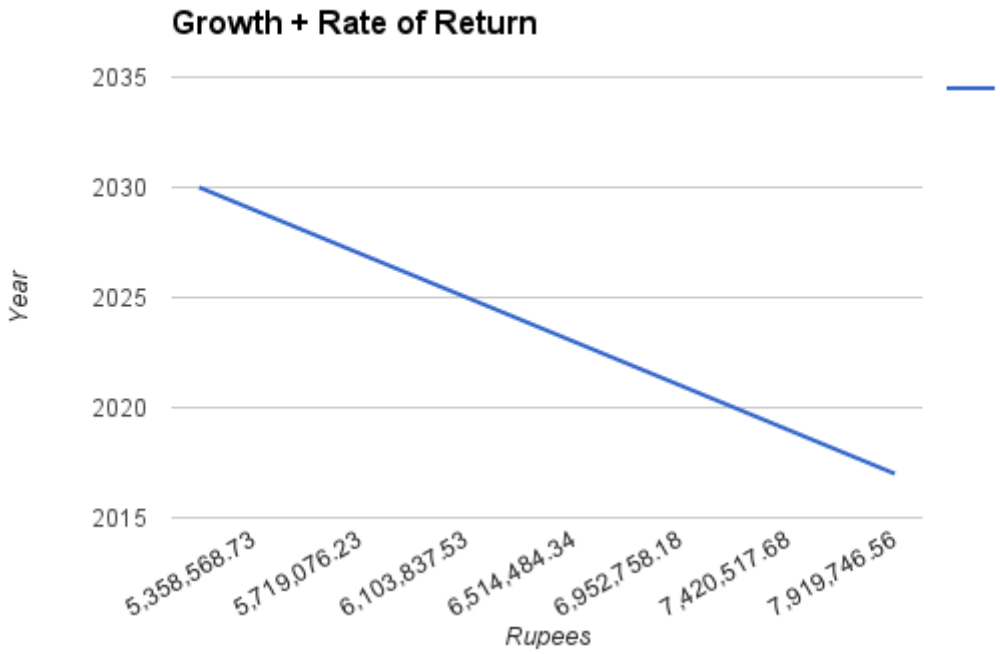


Figure 6.13: Valuation(PV) according to growth% and rate of return% - plot

6.2.5 Present Value of Initial Investment in 2030

$$PV = c * \frac{1 - (\frac{1+g}{1+r})^t}{(r-g)} \tag{6.7}$$

$$PV = \textbf{Rs 9,05,04,906.40} \tag{6.8}$$

where c = Initial Investment(Rs 90,00,000), g = Growth rate(10%), r = Rate of Return(13.64%), t = No. of time-periods(14 years)

Note: *Growth rate and rate of return are taken to be 10% and 13.64% for the same reason mentioned above.*

Thus, this(**Rs 9.05 Cr approx.**) is the Total Valuation of the investment that will be required to run this scheme over a period of 14 years(2017-2030).

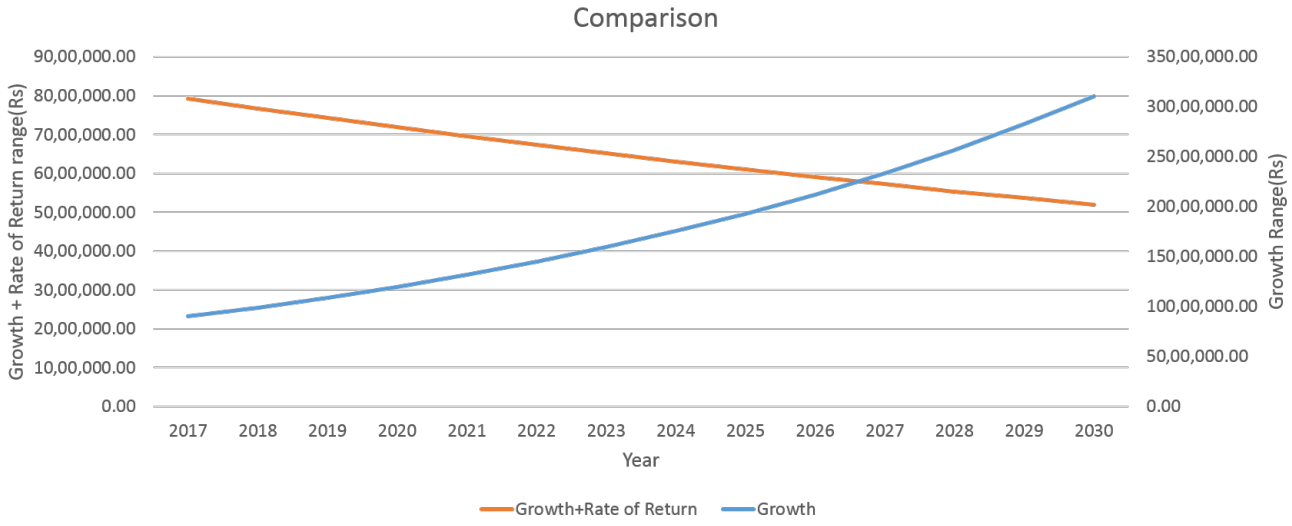


Figure 6.14: Valuation(PV) according to growth% and rate of return% - combined plot

6.3 Profit/Loss Valuation

Profit/Loss analysis of the last 9 years has been done here(sheet 1).

$$PV = c * \frac{1 - (\frac{1+g}{1+r})^t}{(r-g)} \tag{6.9}$$

$$PV = \textbf{Rs 36,999.07 Cr} \tag{6.10}$$

where c = Rs 2,776.59 Cr(avg. of last 3 years P/L),
g = Growth(15%),
r = Rate of Return(13.64%)
t = No. of time-periods(14 years)

Note: *Growth rate is taken to be 15%, because Profit/Loss quantification is dependent on the growth rate of HPCL.*

Rate of return will remain 13.64% for obvious reasons mentioned above.

Since Investment valuation(Rs 9 Cr) is nominal as compared to Profit/Loss valuation, it converges to a *feasible* and *profitable* Business Strategy.

Note: *Average (Net fixed assets-Long Term loans) is also a supportive pillar for a* feasible *Business Strategy here(sheet 1).*

Note: *All the above calculations and data analysis are done with round offs to 2-significant figures, for the sake of simplicity of calculations.*

The Growth : 2017-2030

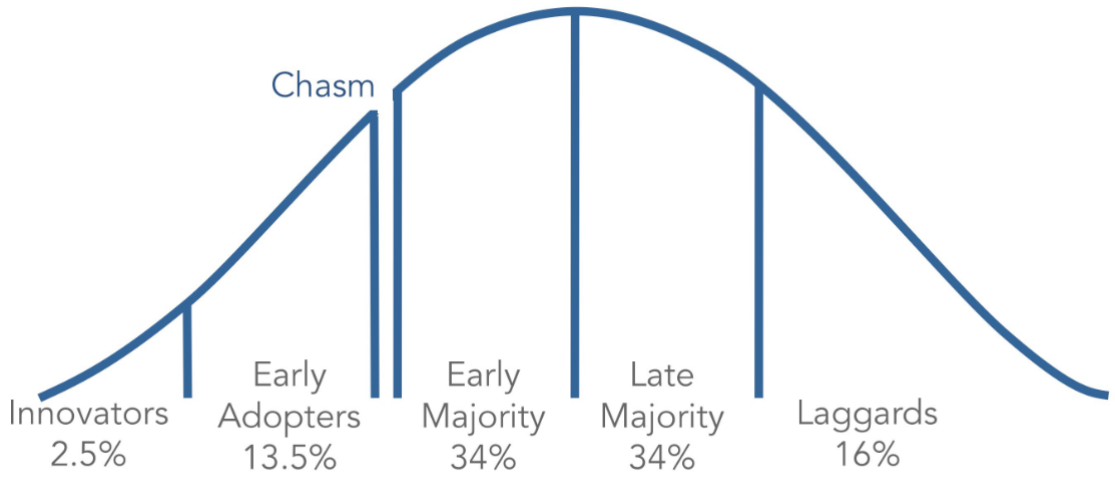


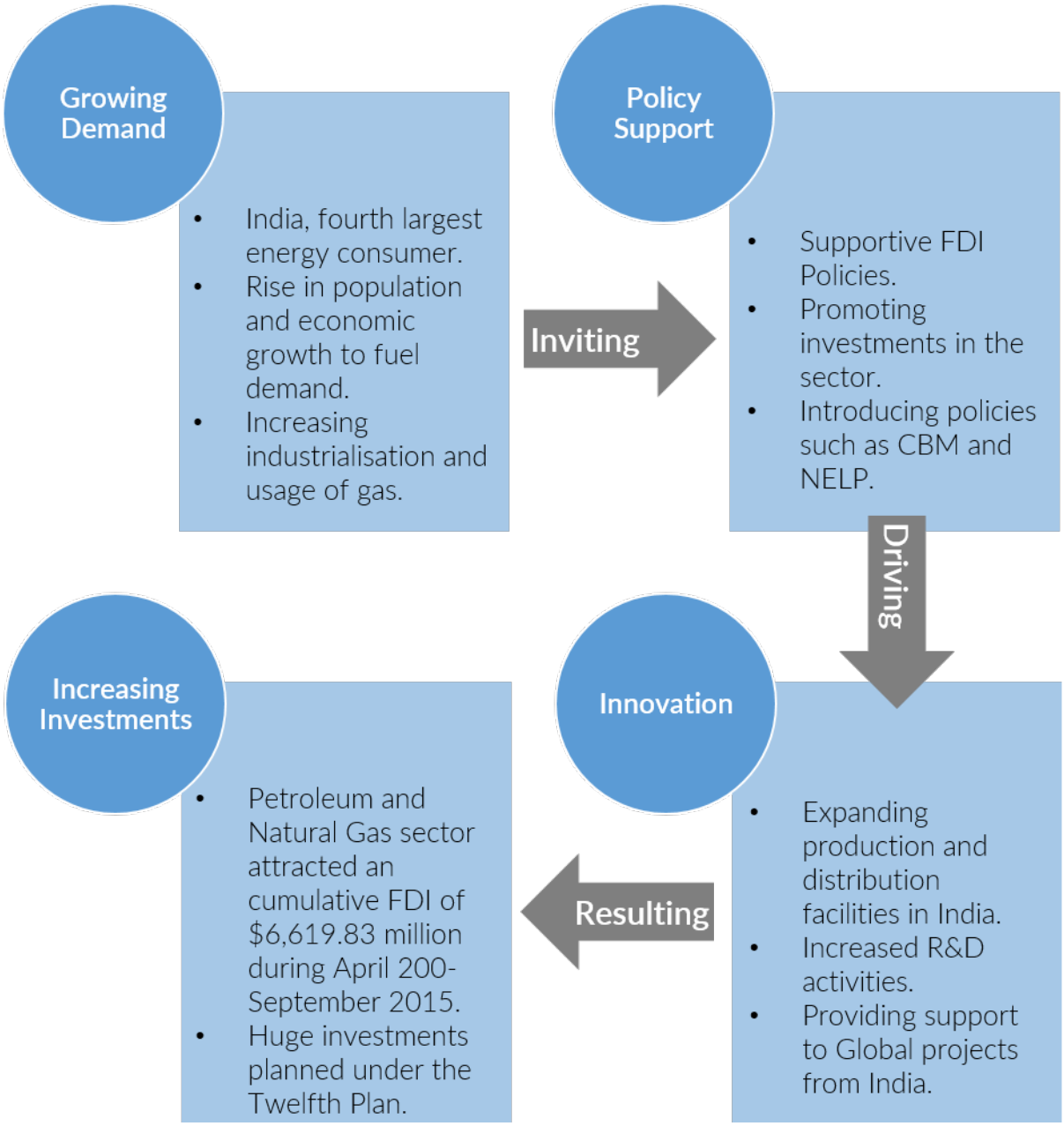
Figure 7.15: Rogers Consumer Adoption curve[8]

7.1 Growth of HPCL, post our proposed Business Strategy -

Overall growth of the industry can be correlated with the Rogers Consumer Adoption curve -

- **Innovators(2017-2018)** - 2.5% generally, but due to demonetisation and promotion of cashless economy in India, this growth rate can be assumed to be slightly on the higher side.
- **Early Adopters(2018-2020)** - 13.5% growth rate.
- **Early Majority(2020-2025)** - 34% growth rate.
- **Late Majority(2025-2028)** - 34% growth rate.
- **Laggards(2028-2030)** - 16% growth rate.

7.2 Overall Growth drivers



The Future - 2030

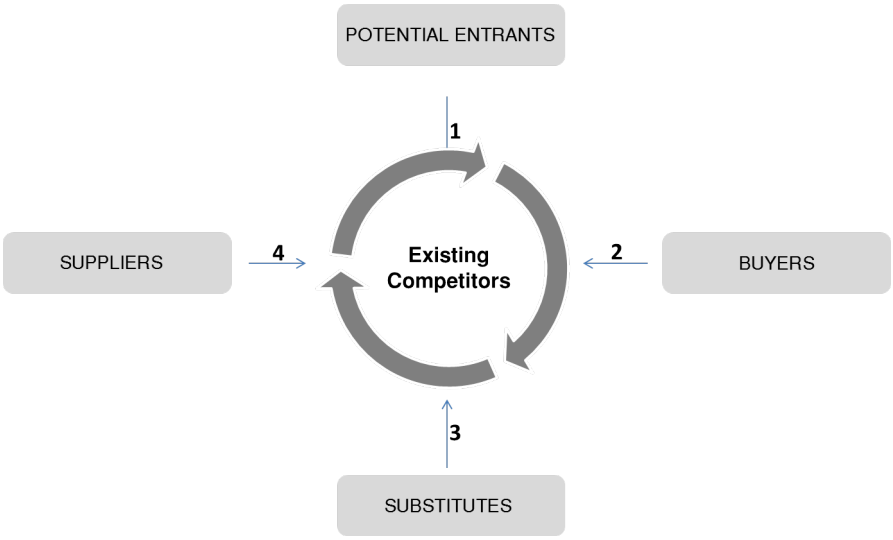


Figure 8.16: Micheal Porter's 'Five Forces'

8.1 Dependence of future aspects due to the following forces -

8.2 Substitutes - Energy consumption pattern in India

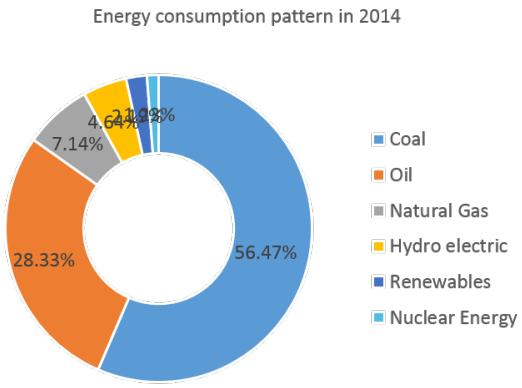


Figure 8.17: Energy consumption in India-2014[4]

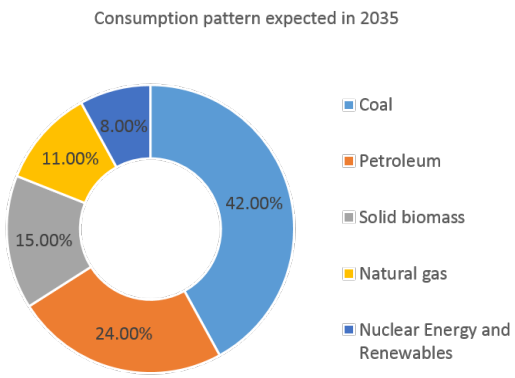


Figure 8.18: Energy consumption in India-2035(expected)[4]

8.3 Renewable sources of energy

It is evident that till 2014, only ˜10% of the total energy consumed came from the renewable energy sector.
This sector may grow to **30%-35%** by 2035,as mentioned above.

Hence HPCL shall prepare itself for the advent of the renewable sources of energy and may notice minimal fall in the growth and market penetration, post 2025.

References

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[4] Ministry of Oil & Natural Gas, BP Statistical Review 2015 BMI forecasts, TechSci Research.

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