International Diversification through Acquisition: Fundamentals and Estimations of Vedanta buyout of Cairn India

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International Diversification through Acquisition: *Fundamentals* and *Estimations* of Vedanta *buyout* of Cairn India

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Abstract

Corporate valuations, financial strength in cash flows and opening up of debt facility favour more overseas acquisitions. Historically, corporate restructuring is a strategic, mechanized and chemical formula for achieving external growth to become a globalized diverse company. The phenomenon of 'diversification' is not new, where it was born in the timeline of the Kings. Markets are becoming highly connective, accessible, communicative and are reaching maturity at a very high phase. Acquisition is a choice to enhance the emerging and diversified markets. This case-based research study presents a case discussion, case analysis and opinion based inference on Vedanta – Cairn India cross-border acquisition deal in Indian oil and exploration industry. We also suggest a new forecasting model to estimate future free cash flows and firm valuation in the upcoming research field of corporate finance. The study exclusively shows reaction of stocks against acquisition announcement and compares with market performance.

Keywords: Mergers, acquisitions, equity stake, oil & exploration, Vedanta resources Plc, Cairn energy Plc, Cairn India, deal structure

Important notes to Readers:
Thank you very much for reading my academic work.

This draft was prepared as part of my doctoral thesis carried out at the IIT Roorkee, India during the period Dec 2009 – Sept 2014. Due to paper's length, several rounds of revisions and cross-checks under the guidance of my doctoral supervisors, this draft has been extensively developed and eventually un/published in the following journals. Therefore, if you consider citing this draft, you may have to consider citing the following articles. I have also suggested my un/published work in the Case analysis for teaching purposes, see References of this draft.

You may also search my full-list of academic publications on the *Google Scholar* with full name as appeared on the first page of this draft.
Also, see http://econpapers.repec.org/RAS/pko531.htm

I hope this first draft would help MBA faculty in teaching M&A, corporate finance and strategic management.

Teaching case:
Nangia, V.K., Agarawal, R., Sharma, V., & Reddy, K.S., 2011. Conglomerate diversification through cross-continent acquisition: Vedanta weds Cairn India. *Emerald Emerging Markets Case Studies*, *1*(1), 1–15.

Case related work:
Reddy, K. S. (2015). Revisiting and reinforcing the Farmers Fox theory: A study (test) of three cases in cross-border inbound acquisitions. https://mpra.ub.uni-muenchen.de/63561/1/MPRA_paper_63561.pdf
Reddy, K. S. (2015). Why do Cross-border Merger/Acquisition Deals become Delayed, or Unsuccessful?–A Cross-Case Analysis in the Dynamic Industries. https://mpra.ub.uni-muenchen.de/63940/1/MPRA_paper_63940.pdf

1. Introduction

The rise in deal activity is the clearest indication of the executive's belief that the "commodities super cycle", driven by the industrialization of emerging countries, is sustainable. Raw material prices have risen at a rate 35 percent after the financial crisis in the early 2009, which was continued by a recovery in crude oil, copper and iron ore prices. Each deal must have its own strategic logic. However, empirical analysis of specific acquisition strategies offer only a limited insight, because of the wide variety of sizes and types of acquisitions and the lack of an objective method to classify them by strategy. The final winning strategy involves making acquisitions early in the life cycle of a new industry or product line.

According to Central Statistical Organization, Ministry of Statistics and Programme Implementation, India is one of the fastest growing large economies in the world with 9% increase in real GDP from 2007 to 2008. This growth has been driven primarily by significant increases in industrial production and investments in infrastructure. We believe that the focus on metals and power segments will allow firms to directly benefit from this growth. In addition, India is located close to other growing economies like China, Southeast Asia and the Middle East which gives us a strategic advantage. India is also having large and cheap labor and talent pools compared to other industrialized nations.

Two recent historic mergers—between Exxon - Mobil, and BP – Amoco had made a swing in the global petroleum industry. Cairn energy holds a 62.37% interest in Cairn India – which is listed on both the Bombay stock exchange and National stock exchange of India. Cairn India has interests in 11 blocks in India and Sri Lanka. On Aug 16, 2010 Cairn announced that it had entered into a conditional agreement with Vedanta Resources plc for the sale of a percentage of its shareholding in Cairn India.

Cairn India is one of the largest oil & gas exploration and production entity, which has a working interest in 10 blocks in India and 1 block in Sri Lanka. Three of these are currently producing hydrocarbons. Cairn India focuses on creating shareholder value by developing its world class resource base in Rajasthan and continues with its track record of exploration success. Cairn India's portfolio is fostered in both mature and frontier areas, as well as in regions and basins. Cairn India had made over 40 hydrocarbon discoveries in the last decade and operates the largest producing oilfield in the Indian private sector.

India imports over two-third of its oil consumption and oil imports are forecasted to grow at a rate of 5.4% per annum over the period 2010 to 2015, relative to declining domestic production. Cairn India represents a unique oil & gas exploration and production platform with the second largest reserves in India among private sector oil companies, a strong management team, and low cost production.

The present case-based research study is organized as follows: Section 2 describes about oil & exploration industry, M&A in both global and domestic trends, Section 3 exhibits the company profiles; section 4 state the acquisition mapping; section 5 presents the methodology for the case analysis; section 6 interpret the case facts with financials and section 7 concludes the findings of the study on opinion based approach.

2.0. Global oil & exploration industry

The population of the world continues to grow, as does the average standard of living, increasing demand for food, water, energy and supplement increasing pressure on the environment. The population of the world doubled from 3.2 billion in 1962 to 6.4 billion in 2005 and is forecast to reach 9.2 billion by 2050. Supplies of oil, gas, coal and uranium are forecast to peak as reserves are depleted. At the same time, fear of climate change is putting pressure on the energy sector to move away from carbon burning to nuclear, solar and other environmental friendly energy sources. Oil accounts between 34 to 37 percent of the world's primary energy.

According to BP statistical energy survey 2008, the world had proved oil reserves of 1237.87 billion barrels at the end of 2007, while consumption average of 85219.7 thousand barrels a day of oil in 2007. OPEC members hold around 75 percent of world crude oil reserves. The countries with the largest oil reserves are Saudi Arabia, Iran, Iraq, Kuwait, United Arab Emirates (UAE), Venezuela, Russia, Libya, Kazakhstan and Nigeria. The world had natural gas reserves of 177.35 trillion cubic metres and natural gas production of 2939.99 billion cubic metres in 2007 and had a refinery capacity of 87913.34 thousand barrels a day.

Oil & gas investments increased in 2009, driven by positive commodity price outlook and improved capital market conditions, investments increased by 17% in the same sector. The magnitude of Asian region's share of global consumption will nearly double in the next 20 years, to about 48 percent in oil and 22 percent in natural gas. By 2010, the region's oil consumption will surpass North America's consumption in oil and gas. This rapid growth has led the world energy markets to their most critical juncture in more than two decades. Today's tight supply and robust prices could conceivably spark an energy boom and ruin the economy like the one that shook world economy in the 1980s. Asian oil and natural-gas markets are currently neither as deep nor as transparent as are those in Europe and North America. Capital investment in Africa and the Middle East region will increase to $45 billion over the next three decades, up from $8 billion a year in history. As the global downturn continues**,** the world economy faces a period of lower oil prices and overall demand for energy.

2.1. Global Mergers &Acquisitions

Investments, including M&A, asset purchases, and capital rising through equity and debt, in oil and gas industry increased from $433.1 billion in 2008 to $505.9 billion in 2009. The growing concern over the crude oil prices, complex operating environment, ever-increasing customer demand, unstable regulatory environments and the reliability of supply had led majority of the troubled companies to dispose-off its business/assets, or look at an appropriate partner for joint venture or M&A fit, to survive in the tumbling financial market. These factors also led to an overall increase in the business consolidation activity, and few large players with abridged full of reserves has been able to cash in on the lucrative low valuation M&A or asset transactions in the oil and gas industry. However, the number of deals decreased from 2,979 deals in 2008 to 2,665 deals in 2009.

The year 2008 deal value in the Asia Pacific region rise by 73%, from $13.2bn in 2007 to $22.7bn in 2008. The dramatic rise in deal volume was almost wholly driven by deals to acquire Australian gas assets. Australia's share of total Asia-Pacific O&G deal value rose from 20% in 2007 to 75% in 2008. China and India will become favoured destinations in Asian region in near future. The value and volume of M&A hit the capital market worldwide at $267bn in August, 2010 with comparison to corresponding month in 2009 at $127bn. The total M&A announced volumes reached $1564.2bn till Aug 2010, appropriate to spur in 'Material sector' at 30%, as BHP Billiton's proposal to acquire Potash corporation for $43.2bn and this deal is registered as the biggest deal transaction, since July, 2007. It has been accounted for 13% of overall M&A announcement worldwide.

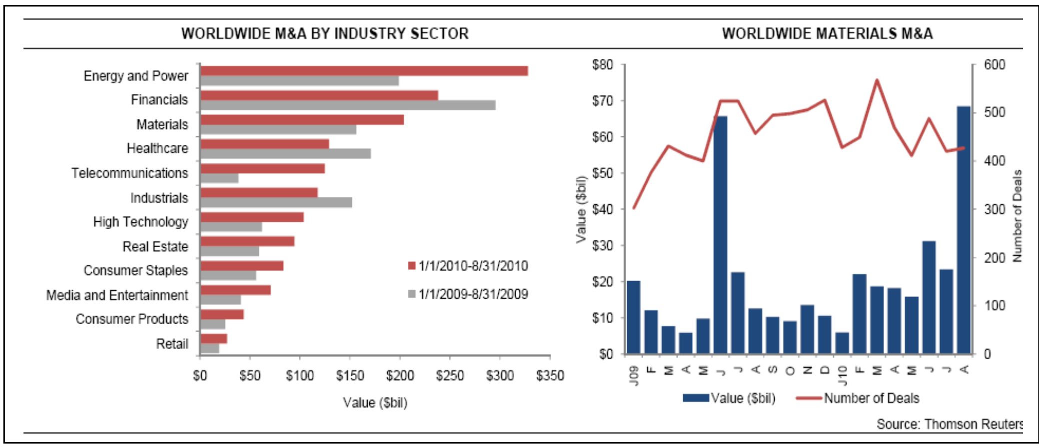
Table 1: M&A announced Volumes ($ billion) during 2009-2010

Month	Year	Worldwide	United States	Europe	Asia-Pacific*
Jan	2010	162	38	29	23
	2009	162	91	34	13
Feb	2010	167	71	32	23
	2009	152	11	105	20
Mar	2010	195	62	46	49
	2009	164	57	42	22
Apr	2010	162	75	28	33
	2009	108	59	13	20
May	2010	190	64	50	32
	2009	123	49	25	19
Jun	2010	209	64	92	31
	2009	271	93	75	90
Jul	2010	212	62	74	39
	2009	169	73	37	32
Aug	2010	267	92	41	39
	2009	127	29	52	26
Total	2010	1564	528	392	269
	2009	1276	462	383	242

Source: Deal Intelligence, Thomson Reuters, (Jul-Aug): 2010
** indicates that 'Japan' is not included*

Goldman Sachs and JP Morgan are playing vital role in advising financially and strategically both the acquirer and the target firms. These two financial advisory firms have a substantial market share of 23.9% and 21.5% in deal value at worldwide. Figure 1 depicts about M&A announcements by sector wise breakup. In 2010 (Jan-Aug), energy and power sector hit the market against financials and materials, as such we may also find the M&A deals in material wise segment.

Figure 1: Worldwide M&A by Sector wise Breakup and M&A in Materials during 2009-2010



According Dealogic report, natural resources companies, including miners, oil and natural gas producers and fertilizer makers, have occupied $316bn so far in 2010 in M&A deals; it may cross the annual record of $384bn of 2006.

2.2. Indian oil & exploration industry

Its 120 years since oil was first discovered in upper Assam at the famous Digboi well. The discovery of the Mumbai offshore fields in the 1970s added a new chapter to the hydrocarbon history in the country. The origin of oil & gas industry in India can be traced back to 1867 when oil was struck at Makum near Margherita in Assam. At the time of Independence in 1947, the oil & gas industry was controlled by international companies. India's domestic oil production was just 250,000 tonnes per annum and the entire production was from one state - Assam.

India made significant additions to its refining capacity. In the first decade after independence, three coastal refineries were established by multinational oil companies operating in India at that time. These included refineries by Burma Shell, and Esso Stanvac at Mumbai, and by Caltex at Visakhapatnam. Today, there are a total of 18 refineries in the country comprising 17 in public sector and one in the private sector. The 17 public sector refineries are located at Guwahati, Barauni, Koyali, Haldia, Mathura, Digboi, Panipat, Vishakapatnam, Chennai, Nagapatnam, Kochi, Bongaigaon, Numaligarh, Mangalore, Tatipaka, and two refineries in Mumbai. The private sector refinery built by Reliance Petroleum Ltd is in Jamnagar is the biggest oil refinery in Asia.

The Indian oil & gas industry pegged at $110bn - which is about 15% of India’s gross domestic product - is one of the focus industries in the county’s rapidly growing economy. The ever rising energy demand, which grew at a compound annual growth rate of 4.57% between 1996 and 2006 as compared to the global average of 2.07%. The demand for oil and gas rose sharply, at a CAGR of 4.02% and 6.82%, respectively during 1996–2006, and has resulted in a domestic short supply, with increased reliance on imports for meeting domestic demands. While the challenges are immense, this rapidly growing industry also offers significant opportunities.

Oil and gas sector is one of the six core industries in India and has very significant forward linkages with the entire economy. Hence, there is an emphasized need for wider and more intensive exploration for new fields, more efficient and effective recovery, a more rational and optimally balanced global price regime - as against the rather wide upward fluctuations of recent times, and a spirit of equitable common benefit in global energy cooperation.

The Indian oil and gas sector is of strategic importance and plays a predominantly pivotal role in influencing decisions in all other spheres of the economy. Oil accounts for about 30% of India's total energy consumption. According to BP statistical energy survey 2008, India had proved oil reserves of 5.45bn barrels at the end of 2007, the majority of which are allocated in the Mumbai high, upper Assam, Cambay, Krishna-Godavari, and Cauvery basins. It produced an average of 800.7 thousand barrels of crude oil per day in 2007 and consumed an average of 2748.17 thousand barrels a day, 3.25% of the world. There have been several large natural gas finds in India over the last five years, predominantly in the offshore Bay of Bengal. It is still expected that the demand for natural gas in India will outstrip any new supply in the years ahead. Indian natural gas consumption has risen faster than any other fuel over the last five years, leading India to consider the large-scale importation of natural gas via pipelines.

Domestic oil production is likely to record an accelerated growth of 5.1 percent in 2010-11. The global oil production fell by 0.7 percent to 86.3 million barrels per day (mb/d) in May, 2010 compared to the previous month. Non-OPEC output dipped by one percent to 52 mb/d due to seasonal maintenance. The International Energy Agency (IEA) has projected non-OPEC oil supply to be higher by 1.6 percent to 52.3 mb/d in 2010. The CMIE crude oil and natural gas index gained an impressive 11.3% on the bourses in June 2010. The index outperformed the broader market by 6.4%.

2.3. Domestic M&A

Indian mergers and acquisitions (M&A) has seen two distinct changes since the financial meltdown in 2007. First, the promoters giving up their flagship businesses and second, hostile takeovers are back on the agenda. The rise of corporate exposure in China and India has sparked a renewed surge in aggressive deal making in the resources sector. M&A crossed a little over $17.4 billion with a total of 747 deals for the period Jan- Dec 2009, which included both outbound and inbound investments in India. The deal value declined by 43.87% in 2009 compared to $31billion in 2008, whereas the number of deals hiked by 64.5% in 2009 compared to 454 deals in 2008.

The sectors garnering most investment during Sept – Oct, 2008 in M&A segment are Telecom with 3 deals amounting to $2.27 billion and Pharmacy, Health Care & Biotech with 9 deals amounting to $1.76 billion. The sectors with maximum number of deals were IT & ITES and Pharma, Health Care & Biotech with 12 and 9 deals respectively (Grand Thornton, 2008). According to Dealogic, mergers and acquisitions in India rose 226% as deal value in the first nine months of 2010, to $56.7 billion in 948 deals, compared with $17.4 billion in 747 transactions in 2009. Because it might be the opening up of loan markets after credit crisis and the surge in confidence of Indian corporate due to more than 25% earnings growth is raising interest in deals.

3.0. Cairn Group (Cairn Energy, Plc London)

Cairn has a Scottish heritage. The year was 1979 when Sir Bill Gammell[1], founded Castle Cairn Financial Services. The company was acquired by Caledonian Offshore Limited in 1988 and was renamed Cairn Energy Plc, prior to its flotation on the London Stock Exchange. Bill Gammell became its first CEO and has held his position for nearly two decades, overseeing the organization's transformation to one of the largest independent exploration and production companies in Europe. It has a proven track record of creating and delivering transformational value through focused exploration and development. This has resulted in over 40 oil and gas discoveries and the development of major fields in India and Bangladesh. Cairn also had an early entry and strategic frontier exploration position in Greenland.

"The group has the capacity to drive forward the Rajasthan development and the financial flexibility to pursue opportunities for growth". The Group offers an

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[1] Sir Bill Gammell, 57, holds a BA in Economics and Accountancy from Stirling University and was awarded a knighthood in 2006 for services to the industry in Scotland. He has over 25 years of experience in the international oil and gas industry.

attractive balance between the strong cash flows that will be generated in Rajasthan and high risk, transformational potential in Greenland."

- Sir Bill Gammell

Years of continued growth

Table 2 : Cairn India 20 years of Growth	
1988	Cairn Energy Plc listed on London Stock Exchange
1993	Bangladesh Joint venture with Holland Sea Search (HSSH)
1994	PSC signed for Block 16 offshore Bangladesh
	Ravva field development commenced leading to significant oil production
1995	Acquired HSSH, Amsterdam listed company
1996	Sangu gas field discovered in Bay of Bengal
1997	Bangladesh transaction with shell including Rajasthan block interest
1998	First gas from Sangu
1999	First Rajasthan discovery (Guda)
2000	Lakshmi discovery
2001	Saraswati discovery
2002	First gas from Lakshmi
2003	Rajeswari discovery
2004	Major discovery of the Mangala, Bhagyam and Aishwariya fields
	First gas from Gauri
2007	Investment by Dyas BV acquisition of Plectrum, Medoil & Greenland blocks
	Listing of Cairn India on BSE and NSE
2008	20 years of Cairn Energy Plc
2009	Production from the Mangala field, Rajasthan commences
	Farm out for existing Greenland blocks agreed with PETRONAS

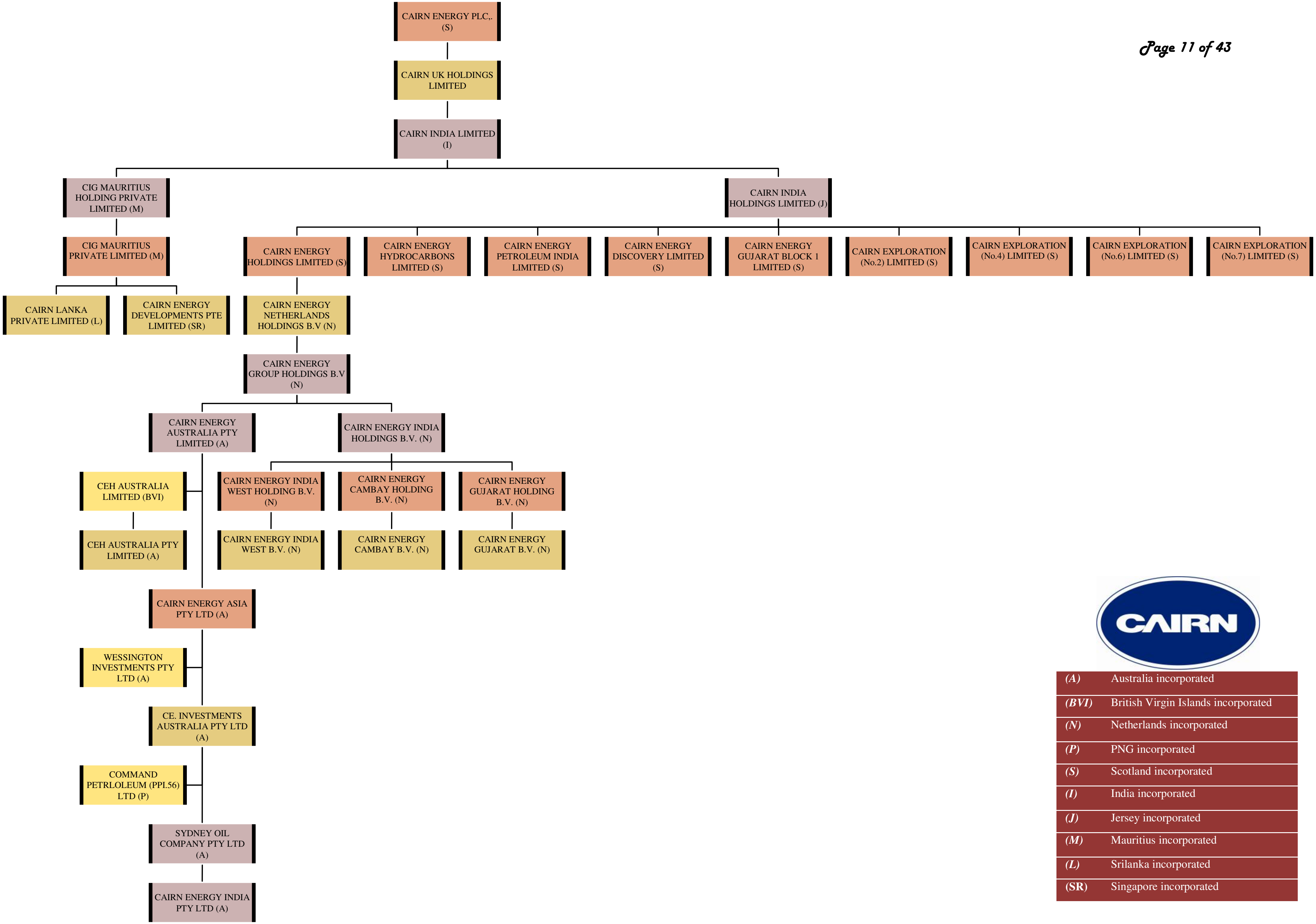
Source: Cairn Energy, Plc

As on 31 March 2010, the following shareholders held interests of 3% or more in the issued share capital of the Company:

Table 3 : Shareholding pattern of Cairn Energy Plc., London	Number of Shares	% of Share Capital
BlackRock	157.46 million	11.26
HSBC Global Asset Management	111.85 million	8.00
Baillie Gifford	86.94 million	6.22
Legal & General Investment Management	75.78 million	5.42
F&C Asset Management	51.74 million	3.70
Walter Scott & Partners	49.58 million	3.54
Schroder Investment Management	46.94 million	3.36
Fidelity Investments	42.18 million	3.02

Source: Cairn Energy Plc.,

Cairn group structure is depicted in the following chart and it shows the entire group holdings including subsidiaries and minority interests, etc.



CAIRN

(A)	Australia incorporated
(BVI)	British Virgin Islands incorporated
(N)	Netherlands incorporated
(P)	PNG incorporated
(S)	Scotland incorporated
(I)	India incorporated
(J)	Jersey incorporated
(M)	Mauritius incorporated
(L)	Srilanka incorporated
(SR)	Singapore incorporated

Cairn India Ltd

As the Indian oil and gas market deregulated in the early 1990s, Cairn turned its focus to South Asia, acquiring Command Petroleum Ltd in 1996, an Australian-quoted company with interests in India. Ravva, in Eastern India, was the first offshore oil and gas field to be developed. This was followed by the Lakshmi gas field in Western India, which was discovered in 2000 and commenced production in 2002. In India, Cairn has made 40 oil and gas discoveries. In Jan 2004, Cairn discovered the largest onshore oilfield in India since 1985 – the Mangala field, 25 discoveries has been made in Rajasthan.

Cairn India has maintained a low-cost operating base by focusing on life-cycle planning, continuous monitoring and control of operational costs and the innovative application of operating technologies. Pioneering the use of cutting-edge technology, the company began production from its Mangala oilfield in Aug 2009. Cairn India has identified more than 35 prospects in the license area and it is building a comprehensive and growing inventory, based upon analysis of the 2D and 3D seismic data and various wells. In addition to its existing exploration portfolio, Cairn is seeking out new exploration opportunities through organic growth, acquisition opportunities and by participating in New Exploration Licensing Policy (NELP) rounds.

Cairn India Ltd Values:

Operations and interests

Cairn has operated interests in India, Greenland, Albania, Bangladesh, Nepal and Tunisia.

Table 4: Operations and interests by Cairn India Ltd				
Holder/Operator	Rajasthan (RJ-ON-90/1)	Cambay (CB/OS-2)	Ravva	KG-DWN-98/2
Type	Onshore	Offshore	Offshore	Offshore
Cairn India (Operator)	70.00	40.00	22.50	10.00
ONGC	30.00	50.00	40.00	90.00*
Tata Petrodyne	-	10.00	-	-
Videocon	-	-	25.00	-
Ravva Oil	-	-	12.50	-
Total Shareholding	100.00	100.00	100.00	-

** ONGC is the operator*
Source: Official site of Cairn Energy Plc

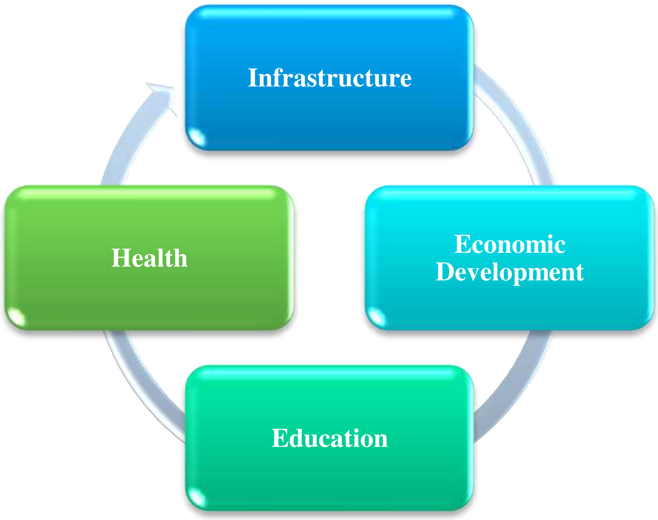
Cairn India is having a total 11 blocks, which includes two production blocks, one production & development block and eight exploration blocks (05 operated: 04 in India and 01 in Sri Lanka, 03 non-operated). Cairn India is attracted by 2lakh retail shareholders with market capitalization of $13bn and its India's among top 20 companies by market cap (June 30, 2010). It has been improved the production estimates by 200% and working interest 400%. The Cairn's strategy targeted production capacity to increase from 69059 bopd in 2010 to 200000 bopd (barrels of oil per day) in 2012. Cairn India plays an important role in development of the oil and gas sector in India. By 2011, estimates suggest that Cairn will operate 20% of India's oil production – as long as production remains at current levels and the Mangala, Bhagyam and Aishwariya fields fulfill our targeted production levels.

Financials of Cairn India Ltd

For the year ended Mar 31, 2010 the consolidated revenue of Cairn India Limited and its subsidiaries was ₹ 16,230 million. The consolidated profit after tax (PAT) for the year was ₹ 10,511 million. Cairn India was listed on the Bombay and National Stock Exchanges in Jan, 2007. It is ranked amongst the top 25 companies in term of market capitalization about $13 billion. There are 1.89bn shares in issue as on 31 Mar, 2010.

Corporate social responsibility (CSR)

Cairn India's dual commitment to maintain the highest health, safety and environment (HSE) standards as well as building local capacity, top quartile HSE standards have been achieved against global benchmarks and more than 60,000 people have been trained in HSE principles and skills in the Rajasthan project. CSR project is supplementing the millennium development goals (MDGs) through different partnership models. It focus on inclusive growth by improving social capital through their health and education initiatives and creating access to opportunities and resources through their economic development and infrastructure support initiatives. At present, the company is running CSR facilities in AP, Rajasthan, Gujarat and other areas including UP. Cairn India aims to make a difference wherever it works, and the Company's vision of its CR is encapsulated in three R's; viz., Respect, Relationships and Responsibility.



3.1. Vedanta Resources, Plc

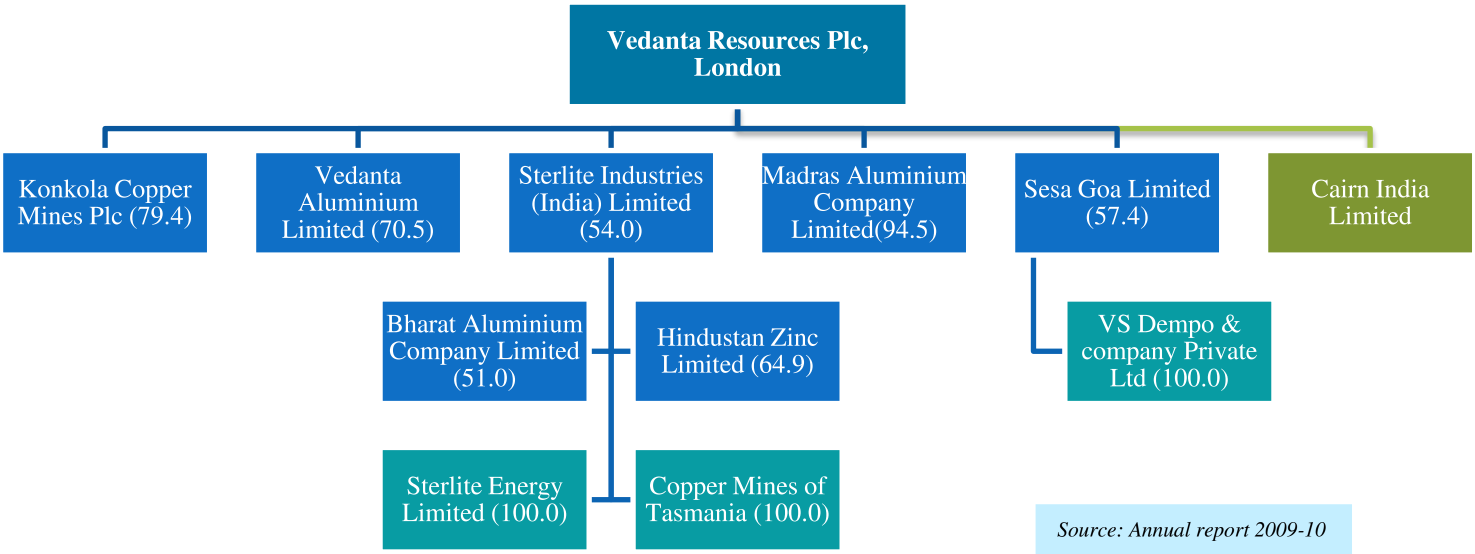
The 56-year-old founder and chairman of Vedanta resources, Anil Agarwal, was born and brought up in Patna. He belongs to a family concerned in the business of aluminium conductors. He dropped out of school at the age of 15 after completing matriculation. Former Bihar Chief Minister Mr. M. Lalu Prasad Yadav is his fellow alumnus. He well knew as a man of few words and more action. He has been persistent in the expansion of his various group companies that mostly deal in copper, zinc, aluminium and iron ore with operations in India, Australia and Zambia. His modus operandi is simple – acquire a down in the dump or relatively under-leveraged company, expand capacities manifold and ensure steady raw material linkages. Mr. Agarwal first came into the limelight when he went abroad to London to list his company in 2003. That was the first time an Indian firm went on to the scrolls of the London Stock Exchange. Around the same time, he pulled a coup thrashing bid-rivals such as Arcelor-Mittal and Birla Group to acquire India's largest private sector iron ore miner 'Sesa Goa'. Vedanta group represents the third largest business conglomerate in India (in terms of market capitalization) ahead of its more famous contemporaries like Birlas, Ruias, Mahindras and Goenkas.

His journey started back in 1976 when he landed in Bombay to start his business as a metal scrap dealer. Coming from a family which made aluminium conductors, he was not new to the metal space but those were not the days when any metal barring gold used to shine. In Bombay, his first move was to take over a firm owned by the King of Nepal that was into cable making. When the takeover happened in 2001, Balco had an annual turnover of ₹ 92 crore with a loss of ₹ 43 crore, produced 89,000 tonnes of aluminium and employed 6,000 people. In 2009-10, the company produced 268,000 tonnes of aluminium, had revenues of ₹ 2,746 crore and an operating profit of ₹ 610 crore. That was followed by another ailing PSU acquisition: Hindustan Zinc Ltd, and more recently Sesa Goa where Agarwal pipped the likes of ArcelorMittal and Birla Group. The takeover of Cairn India is only in line with vision of becoming one of world's leading natural resource companies on the lines of BHP Billiton. He remains hungry for more and importantly, did not turn them around by firing people or shutting down plants. Rather he doubled capacity ensuring that he would in turn need more people.

A conglomerate of $70 bn revenues and market capitalization of about $12 billion, it was the first Indian group to be listed in the London Stock Exchange in 2003. Its group company Sterlite Industries was listed in the New York Stock Exchange in 2007, which is the largest IPO by an Indian firm in the US. The group aims to produce 10-12 % of the world's metals. LSE-listed and FTSE 100 diversified company and India's largest non-ferrous metals & mining company based on revenues. The group has experienced significant growth through various expansion projects for copper, zinc and aluminum businesses and acquisition of Sesa Goa in April 2007, which enabled to enter the iron ore business. Revenue from businesses increased from $3,701.8 million in 2006 to $7,930.5 million in 2010, representing a compound annual growth rate of 21%.

Vedanta Resources plc is a diversified metals and mining company with revenues in excess of $6 billion. The workforce of over 30,000 people is scattered among operating locations in India, Zambia and Australia.

Vedanta Portfolio



Source: Annual report 2009-10

COPPER BUSINESS

Sterlite Industries (India) Ltd. Sterlite is headquartered in Mumbai. Sterlite has been a public listed company in India since 1988, and its equity shares are listed and traded on the NSE and the BSE, internationally traded on NYSE in the form of ADSs. Vedanta owns 53.9% of Sterlite and has management control of the company.

Konkola Copper Mines. It owns 79.4% of KCM's share capital and have management control of the company. KCM's other shareholder is ZCCM Investment Holdings Plc. The Government of Zambia has a controlling stake in ZCCM Investment Holdings Plc.

Copper Mines of Tasmania Pty Ltd. CMT is headquartered in Queenstown, Tasmania. Sterlite owns 100.0% of CMT and has management control of the company.

ZINC BUSINESS

Hindustan Zinc Limited. HZL is headquartered in Udaipur, Rajasthan. HZL's equity shares are listed and traded on both NSE and BSE. Sterlite owns 64.9% of the share capital in HZL and has management control. Sterlite has a call option to acquire the Government of India's remaining ownership interest.

ALUMINIUM BUSINESS

Bharat Aluminium Company Ltd. BALCO is headquartered at Korba, Chhattisgarh. Sterlite owns 51% of the share capital of BALCO and has management control of the company. The Government of India owns the remaining 49%. Sterlite exercised an option to acquire the Government of India's remaining ownership interest in BALCO in March 2004.

Vedanta Aluminium Ltd. It is headquartered in Lanjigarh, Orissa. Vedanta owns 70.5% of the share capital of Vedanta Aluminium and Sterlite owns the remaining 29.5% share capital of Vedanta Aluminium.

IRON ORE BUSINESS

Sesa Goa Limited. Sesa Goa is headquartered in Panaji, India, and its equity shares are listed and traded on both NSE and BSE. The group owns 57.1% of Sesa Goa and has management control of the company.

COMMERCIAL POWER GENERATION BUSINESS

Sterlite Energy Limited. Sterlite Energy is headquartered in Mumbai. Sterlite owns 100.0% of Sterlite Energy and has management control of the company.

Madras Aluminium Company Ltd. MALCO is headquartered in Mettur, India. MALCO's equity shares are listed and traded on both NSE and BSE. The group owns 93.9% of MALCO's share capital and has management control of the company.

Vedanta group is geographically well positioned in Australia, India, United Kingdom and Zambia.

Group highlights

Vedanta's mission is to be a world-class metals and mining group and generate superior financial returns.

Vedanta is a leading diversified and the largest non-ferrous metals and mining company in India based on revenue. It's having a substantial market share across copper, zinc and aluminium markets in India.

- Sterlite is the leading custom copper smelter in India based on production volume in 2008 and had a 42.6% primary market share by sales in India.
- HZL is India's only integrated zinc producer, had a 79.7% market share by volume in India in 2008, and is the world's fifth largest zinc mining company in 2007 based on mine production and is one of the top ten lead mining companies by production volumes worldwide.
- Vedanta, through its subsidiaries BALCO and MALCO, is the second largest primary producer of aluminium in India with a 31.0% primary market share by volume in India in 2008.
- Sesa Goa was India's largest producer-exporter of iron ore in the private sector by volume in 2007, according to the Federation of Indian Mineral Industries. Sesa Goa accounted for approximately 10.5% of India's total iron ore exports and 1.4% of the world trade in iron ore.
- Sterlite's Tuticorin smelter was one of the top ten custom copper smelters worldwide in 2007 and world's eighth largest refined copper producer on a production volume in 2008.

Vedanta Since 1979

The Group has grown under his leadership, vision and strategy. Mr Agarwal has over 30 years' experience as an industrialist.

Table 5: Success story of Anil Agarwal, Chairman of Vedanta Group

1979	Anil Agarwal acquires, through a family firm, Shamsher Sterling Corporation
1986	Sterlite Cables limited, acquires the Shamsher business and changes its name to Sterlite Industries in India
1988	Sterlite industries (India) ltd, makes an IPO of its shares and convertible debentures
1989	Establishes a continuous copper rod plant
1993	Sterlite communications establishes a plant for the manufacture of optical fibre in Maharashtra
1995	Acquires an 80% interest in MALCO
1997	Commissions first privately developed copper smelter I India at Tuticorin in Tamilnadu.
1999	Acquires copper mines of Tasmania Pvt ltd.
	Acquires Thalanga copper mines Pvt Ltd.
2000	MALCO acquires 38.8% interest in India Foils Ltd
	Telecom cables and optical fibre business is demerged into Sterlite Optical Technologies Ltd
2001	Acquires a 51% interest in BALCO from the Govt. of India (Disinvestment)
2002	Acquires a 26% interest in Hindustan Zinc Ltd from Govt. of India and further 20% through an open market offer
2003	Acquires a further 18.9% interest in HZL following exercise of coal option granted by GOI
	Becomes the first Indian company to list on London stock Exchange
2004	Announces $500 million global bond offering, also acquired 51% stake in Konkola copper mines in Zambia
2005	Expansion of Tuticorin Smelter to 300000 tpa and commissioned new 170000 tpa zinc smelter at Chanderiya and the associated 154MW power plant and complted the expansion of Rampura Agucha Mine.

2006	Commissioned the new 50000 tpa Ausmelt TML lead smelter at Chanderiya
	Issues $725 million convertible bonds
	Completes the BALCO expansion projects comprising 250000 tpa of aluminum smelter with associated 540 MW captive power plant
	Acquires Sterlite Gold
2007	Sterlite successfully completes its $2 billion ADS issue in the United States and lists on NYSE
	Vedanta acquires a 51% controlling stake in Sesa Goa Limited, Indias largest producer – exporter of iron ore
2008	Sterlite enters into agreement to buy certain operating assets of US based copper producer Asarco LLC
	Vedanta successfully completes $1.25 billion bond issue

Financial performance

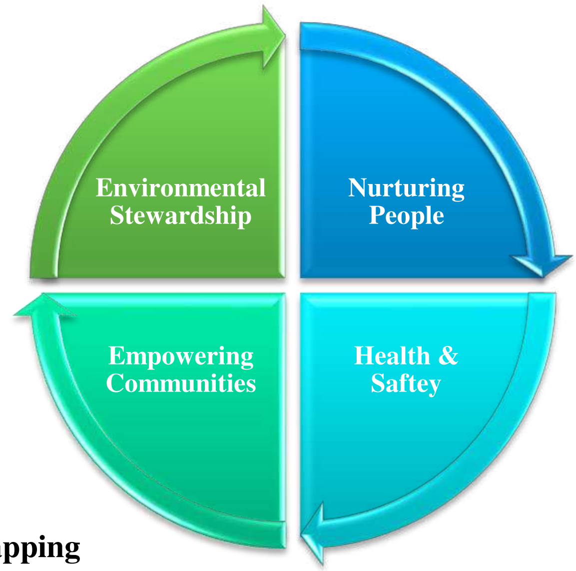
Table 6: Financial review for the year ended Mar 31 2010

Revenue	$7.9 bn
EBITDA	$2.3 bn
Free cash flow	$1.8 bn
Net Assets	$11.4 bn
EPS	219.6 US cents per share
Dividend	45.0 US cents per share

Source: Vedanta official website

Corporate Social Responsibility and awards

Sustainability is a dynamic process and is not about finding the ideal status. Consequently, they are continuously innovating on environmental and social performances. They started their sustainability journey with a focus on ensuring compliance and improving the social, health, safety and environmental performance; with emphasis on establishing robust management systems. The process deployed helps them in enhancing focus and gives direction to their sustainability roadmap.



4.0. Acquisition Mapping

Exhibit 1: Deal Structure
Cairn UK Holdings Limited, a wholly owned subsidiary of Cairn, has agreed to sell to THL Aluminium Limited, a wholly owned subsidiary of Vedanta, a maximum of 51 percent of the fully-diluted share capital of Cairn India. Vedanta will make an open offer to Cairn India shareholders, at not less than ₹355, for up to 20 percent in accordance with the requirements of the SEBI (Substantial Acquisition of Shares and Takeovers) Regulations, 1997 (Cairn will not participate in the open offer).
Put and Call options, exercisable after July 2012 and July 2013, will ensure a majority interest in Cairn India can be sold [exercisable at $8.66 (₹ 405)] to the extent the number of shares capable of being sold to Vedanta. Each option may be exercised in respect of a maximum of 5 per cent of the issued share capital of Cairn India as at the date of the exercise of the option.
Expected initial consideration of between $8480m (51 percent) and US $6,651m (40 percent) completion of the proposed transaction will occur by closing the open offer from Oct 11, 2010.
Post completion is expected that Vedanta Resources Plc., will hold 31-40% of Cairn India directly and Sesa Goa Ltd (Sesa Goa) will hold 20%.
Shares acquired from Cairn Energy Plc., to be acquired at a price of ₹355 per share; Vedanta will also pay a non-compete fee of ₹50 per share.
The non-compete fee will be paid in consideration for Cairn Energy agreeing not to engage in the business of oil or gas extraction and/or transport or processing in India, Sri Lanka, Pakistan and Bhutan, or any other business which competes with the business of Cairn India and its subsidiaries, for a period of three years. Finally, Vedanta will on closing pay of ₹405 for each Cairn India share (fixed exchange rate of ₹46.765/US$1)
Cairn Energy will have a residual interest in Cairn India for 10.6–21.6 percent dependant on the number of Cairn India shares validly tendered in the Open Offer. Cairn Energy has agreed that Vedanta shall have a pre-emption on transfer right over any subsequent disposal of Cairn India shares, where it result in the recipient of the shares holding more than 20% of the issued share capital.
Vedanta and Cairn Energy have agreed a break fee arrangement pursuant will pay an amount equal to 1% of the market capitalization of Cairn Energy on the last trading day prior to the issue of this announcement. The payment of the break fee arises if (i) approval by the Cairn Energy shareholders of the transactions contemplated under the agreement is not received by Oct 30, 2010 or (ii) Cairn Energy breaches certain non-solicitation provisions relating to the solicitation of an offer for Cairn Energy or Cairn India.
The Proposed Transaction is expected to close by the first quarter of 2011.

4.1. Deal issues

Vedanta, in its first move into the energy sector, is buying a controlling stake in India's no. 4 oil and gas company from Britain's Cairn Energy to capitalize on rising energy demand, economic growth and an expanding population. Vedanta will certainly take into account, the views of ONGC before a decision is taken. ONGC has not raised any concerns with Vedanta yet for the reason that there is no official proposal before them. Cairn India’s public shareholders, representing 37.64 percent of its paid-up equity, could have earned ₹3570 crore, had the non-compete premium been extended to them as well.

The Production Sharing Contract (PSC), which Cairn has signed with the Indian government for the Rajasthan block, provides for explicit government approval only in case of a party selling its interest in the block, but does not make the nod mandatory in case of change of ownership at corporate level. The deal will need the Indian government's approval because Cairn India has PSCs with the government for its oil and gas exploration blocks. According to their agreement, any change of ownership would require the government approval.

So, if Cairns want to sell its stake, it might have to offer Right of First refusal to ONGC. ONGC is against Vedanta into oil filed. ONGC might consider that they should acquire the stock if Cairn Energy wants to leave. Cairn cannot arbitrarily bring into picture some unrelated outsider which has little experience and necessary consents to deal in the oil field. Also ONGC is not interested for Vedanta as they don’t have experience in oil field. ONGC expects that those coming into picture should bring in their experience. ONGC Chairman, R.S. Sharma said the company was examining the implications of Vedanta's stake purchase and would respond appropriately later.

"The key issue is that Vedanta is qualified enough to own a business that it has no experience in running. However, they are likely to retain the core management of Cairn India and if that comfort is given, it would not be a major concern." The Rule says that an open offer for a minimum of 20% in the target company is required to be made by any entity that purchases 15% equity, either from the promoters or from the open market.

Petroleum minister, Mr. Murli Deora insisted that the government would ensure the requirements under the production sharing contract were adhered to, and that interests of ONGC and minority investors were protected. According to UK takeover rules, Cairn Energy Plc has to seek shareholders' nod and other regulatory approvals for the sale before Vedanta's open offer opens on Oct 11, 2010. Prior to the meeting of shareholders of Cairn Energy, the sellers are prohibited from soliciting any person to make competing proposal, as per the share purchase deed between Cairn Energy and Vedanta group. The agreement also requires a shareholder meeting to be convened on or before Oct 30, 2010.

4.1.1. Deal Financing

Vedanta will borrow as much as $6.5 billion to fund the acquisition, Vedanta group, Deputy Chairman, Navin Agarwal said in a conference call. JPMorgan Cazenove and Morgan Stanley are lead financial advisers along with Standard Chartered Plc, which is also arranging the financing together with Credit Suisse Group AG and Goldman Sachs Group Inc.

4.1.2. Road un-blocked by ONGC

Oil and Natural Gas Corporation (ONGC) is a partner in Cairn India's three producing assets, including the biggest on land oilfield in Rajasthan's Barmer district, and other exploration acreages. ONGC has decided against making a counter bid for the $10-billion offer from Vedanta Resources to buy a majority stake in Cairn India but will do everything possible to protect its interest.

Table 7: Road un-blocked for Vedanta – Cairn India acquisition deal

Aug 16, 2010	Vedanta announced to buy up to 60% stake in Cairn India Ltd for $9.6 bn.
Aug 18, 2010	Oil Minister, Mr. Murali Deora hints the ministry can approve the deal only if it protects the interests of ONGC and minority investors
Aug 19, 2010	ONGC may have to pay $13 bn if it exercises its right of first refusal to buy Cairn India.
Aug 20, 2010	The Indian government asks Cairn Energy, Plc. to submit details of its deal
Aug 23, 2010	The government is believed to have asked ONGC to study the possibility of making a counter offer with GAIL
Sept 23, 2010	The time for making a counter bid for Cairn lapses. ONGC says it consciously did not make offer

According to SEBI-Takeover code norms, a rival offer has to be made within 21 days of the open offer being issued. But ONGC still can make a counter-offer or exercise its claimed pre-emption right in certain properties of Cairn India before the extraordinary general meeting called by Cairn Energy Plc on Oct 7, 2010 to ratify the sale to Vedanta. "The date for (making) counter-offer is gone. If ONGC did not make (a rival) offer (for Cairn India), that was done consciously, after considering all commercial aspects. If the company chooses to do so, ONGC will have to approach the Cairn Energy management before Oct 7, 2010 and, upon acceptance of its offer by the board, approach the market regulator SEBI to stop Vedanta's open offer for Cairn India shares to be launched on October 11, 2010.

5.0. Research method

5.1. Objectives of the study

Mergers and Acquisitions (M&A) have become a popular vehicle for cash full and rising companies to rapidly access new markets, assets and capabilities. The objective of present study aimed to examine and empirically to investigate the acquisition facts, deal issues, deal breakers and other side, estimating the future cash flows of target firm with new approach (NRR model) in the view of benefiting the target firm stakeholders. The case based approach analyzes both facts and strategic synergies behind the acquisition. Exclusively, the study suggested a new forecasting model for building theories, concepts and strategies in emerging field of corporate finance (see published case, Nangia et al., 2011).

5.2. Data collection and analysis

The study used to collect the data from four sources was used as the case description as well as part of the analysis. The main facts of the case extracted from leading business news papers, internet sources and official publications from company's sites. The data including daily share prices and financial statements of both companies and industry information were absorbed from CMIE Prowess database and Ministry of Petroleum and Natural Gas, India. The financial data of target firm (Cairn India Ltd) has been analyzed in four phases in the research study (see how to develop cases and case research papers using archival sources, Reddy, 2015a; Reddy & Agrawal, 2012). This has been expressed in methodology section below.

5.3. Methodology

Growing importance of 'Business valuation' as a specialized area in corporate finance, we suggest the methodology to fit for both development of case and case-based research study. First, computation of forecasting hurdle rate (NRR approach), statement of free cash flows (FCFs), finding the cash flow productive rate and finally estimating future free cash flows (FFCF). Other side the study depicted financial peer comparison in the same industry with target firm and financial review of acquirer firm (Vedanta Resources, Plc.). The flow chart of methodology design is presented in Figure 2 below.

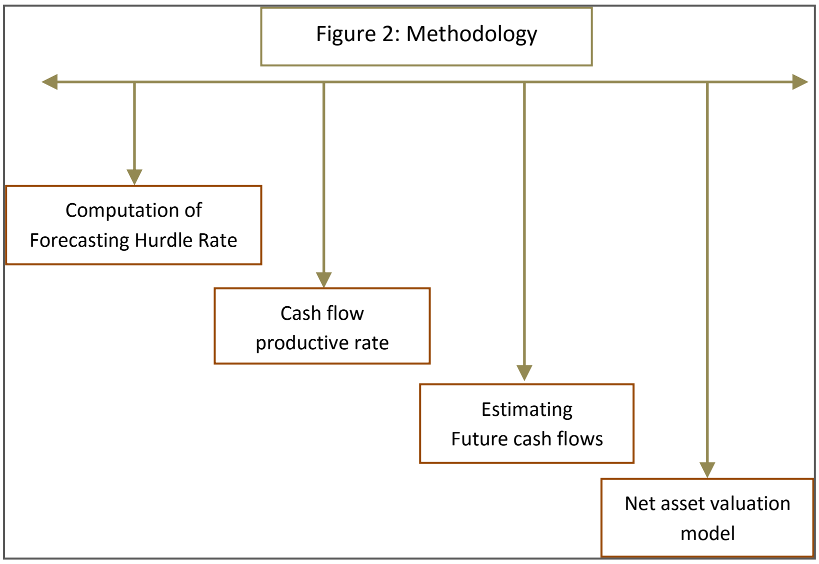


Figure 2: Methodology

5.3.1. Forecasting hurdle rate (FHR-NRR model)

Forecasting is the process of estimation in unknown situations from the historical data for the purpose of future decision making. There are various models in the context of economics and finance. Here, we develop a model that named as "Forecasting Hurdle Rate" by using various economic, political, industry, financial and production factors. The main objective of model is to find out the hurdle rate to estimate sales or revenues while the company is in a situation to sale. The acquirer shall consider various above said factors while valuating the business or company. We refer FHR model as NRR approach.

Forecasting Hurdle Rate (FHR) =

$$\frac{\beta 1\ \mathrm{NSGR}+\beta 2\ \mathrm{IGR}+\beta 3\ \mathrm{GIPGR}+\beta 4\ \mathrm{DOIPGR}+\beta 5\ \mathrm{PQ(DOIPGR)}+[\mathrm{MS}\times\mathrm{IMP.GR}]+[\mathrm{MS}\times\mathrm{DD}]-[\mathrm{PCMS}\times\mathrm{PCSGR}]}{\log \mathrm{WPI.GR}+\sigma\ \mathrm{CR}+\log \mathrm{Cm.R}+\log\ \mathrm{EX.R}+\log \mathrm{PRST}+\log \mathrm{TR}}\times 100$$

Where,

NSGR is net sales growth rate, *IGR* is industry growth rate, *GIPGR* is global oil production growth rate, *DOIPGR* is domestic oil production growth rate, *PQ* (*DOIPGR*) is previous quarter domestic oil production growth rate, *MS* is market share, *IMP.GR* is imports growth rate, *DD* is domestic demand, *PCMS* is prime competitor market share, *PCSGR* is prime competitor sales growth rate, *WPI.GR* is whole sale price index of Fuel Basket (growth rate against five preceding years), *CR* is crude oil risk, *Cm.R* is commercial risk, *EX.R* is exchange risk (Rupee vs. US$), *PRST* is political risk for special transactions, *TR* is transfer risk and *log* is logarithm.

The model is not suggestible, while estimating sales, production or any financial or any economical numeric's in the future. The model uses leading competitor performance in strategic perspective, where others are not.

5.3.2. Cash flow productive rate (CFPR)

The CFPR is computed with reference to production estimates in manufacturing or production rate. Generally these production estimates can be extracted from the firm budget proposals. CFPR is expressed by adding FHR to production estimation growth rate. At the end, we may consider this is the true future free cash flow rate.

$$\text{CFPR} = \text{Production estimate rate} + \text{Forecasting hurdle rate}$$

5.3.3. Estimating future free cash flows (FFCF)

Before estimating the future cash flows, first we compute the statement of free cash flows on the basis of last year financial information. These FCFs are the fundamental base to project the future free cash flows with respect to cash flow productive rate. Here, procedure for computing FFCFs is depicted in following equation and Table below.

$$\text{FFCF} = \text{FCF} \times \text{CFPR}$$

Where, FFCF = future free cash flows

FCF = free cash flows for last year

CFPR = cash flow productive rate

The following table depicts about computation of FCF by using various financial statements as methodological approach.

Table 8 : Computation of free cash flows (FCF)	
	Income from Operations
+	Non-operating income
=	Gross annual revenue
	operating costs & expenditure
-	(a). operating expenses
-	(b). employee costs
-	(c). legal & professional charges
-	(d). administration costs
-	(e). exploration costs
	Total operating expenses
=	**EBDIT**
-	(f). depreciation & Amortization
=	**EBIT**
-	(g). taxes for the current year
=	**NOPLAT(net operating profit less adjusted taxes)**
+	(h). depreciation & Amortization
=	**Gross cash flows**
-/+	(i). increase/decrease in working capital
=	**cash flow from operations**
-	(j). capital expenditure
=	**Free cash flows**

5.3.4. Modified net asset valuation model (MNAVM)

Wholly, we computed total value of the company or business by using 'net asset valuation model.' This model primarily used to compute the total value of company in terms of equity and debt. This is the most vibrant method in evaluating business value as a part of M&A negotiations.

$$V_C = MV_E + V_D$$

Where, V_C = value of the company

MV_E = modified value of equity

V_D = value of debt

6.0. Case analysis

"The company has a proven management team and a significant resource potential in future. Cairn India will benefit from Vedanta's track record of acquiring and growing world class companies in India." Vedanta -- which has iron ore, zinc and copper mines -- follows the world's biggest miner BHP Billiton in acquiring oil assets. The case analysis has been structured in shareholding pattern, FCF, FFCF and net asset valuation of Cairn India Ltd, other side shows the peer comparison in oil and exploration industry. At the end, it shows the financial analysis of Vedanta Group. Specifically, the study depicted strategy of target firm and synergetic benefits of acquiring company. Prior to proceed with case analysis, students are suggested to go through the market patterns of Indian M&A in and out of deals, and some basic concepts of mergers, acquisitions and joint ventures, and relevant theoretical concepts (see Reddy, 2014; Reddy, 2015b; Weston et al., 1998).

6.1. Shareholding Pattern of Cairn India Ltd, India

Table 9: Cairn India Limited - Shareholding Pattern (March 31, 2010)

		Shareholding Pattern		Total equity stake in percentage
I		*Foreign Promoters group*		
	a.	Cairn Energy Plc		62.36
II		Non-promoters/Public shareholding		
A		*Institutional Investors*		
	b.	Financial Institutions and Banks	4.91	
	c.	Foreign Institutional Investors (FIIs)	10.59	
	d.	Insurance Companies	0.1	
	e.	Mutual funds/UTI	2.31	
		Total Insti. Investors		17.91
B		*Non-institutional Investors*		
	f.	Corporate bodies	1.83	
	g.	Clearing corporation	0.08	
	h.	Directors & relatives	0.15	
	i.	Foreign corporate bodies	15.31	
	j.	NRIs/Foreign individuals/Foreign nationals	0.07	
	k.	Individual holding (in excess of Rs. 1 lakh)	0.21	
	l.	Individual holding (up to Rs. 1 lakh)	2.08	
		Total non-institutional investors		19.73
		Equity (in %)		100.00

Source: India Infoline Database

Essentially, Cairn India Ltd is promoted by London based Cairn Energy Plc with 62.36% of equity and management control of the firm. Predominantly, FII's with 10.59% of equity stake in institutional investor segment and foreign corporate bodies is having a 15.31% of equity stake in non-institutional investor segment of the shareholding pattern.

6.2. Free cash flows (FCF) of Cairn India Ltd for the year ended March 31, 2010.

The free cash flows has computed on the basis of furnished unaudited financial statements for the year ended March 31, 2010.

Table 10 : Calculating Free Cash Flows (FCFs) of Cairn India Ltd (Stand alone) for the year ended March 31, 2010

	Particulars	Amount (₹ in lakhs)	Amount (₹ in lakhs)
	Income from Operations	320	
+	Other income	16016	
=	Gross annual revenue		16336
	operating costs & expenditure		
-	(a). operating expenses	338	
-	(b). employee costs	1759	
-	(c). legal & professional charges	2123	
-	(d). administration costs	907	
-	(e). exploration costs	11912	
	Total operating expenses		17039
=	**EBDIT**		-703
-	(f). depreciation & Amortization		5
=	**EBIT**		-708
-	(g). taxes for the current year		441
=	**NOPLAT(net operating profit less adjusted taxes)**		-1149
+	(h). depreciation & Amortization		5
=	**Gross cash flows**		-1144
+	(i). decrease in working capital		2582.89
=	**cash flow from operations**		1438.89
-	(j). capital expenditure		
=	**Free cash flows**		1438.89

Source: Compiled from annual report, March, 2010.

We analyze the financial statements of Cairn India Ltd for the year ended March, 2010 and computed FCF under Indian accounting standards. Since, the company listed on both BSE and NSE in 2007 and the financial results shows as profit deficit, i.e. loss. From the FY2009-10 financial results of the company, we state that large part of the income is generating from non-operating activities of business of which 98% against gross annual revenue and 2% as operating income, this is due to heavy investment in exploration and not to proceed in sale of crude in domestic or internationally. But the future says that there is a strategic scope to generate more revenue from operational activities and to concentrate on exploration in neighboring countries.

We would like to state a comment on computed FCF, exploration cost, employee cost and legal& professional charges is 13 percent of its gross annual revenue. Other side, for the same year, it shows FCF about ₹ 14.38 crore. We also presented a peer comparison financial results and to make a notice that Cairn India Ltd is the second most admired company in oil and exploration industry (Reliance Industries Ltd not included).

6.3. Peer comparison among Indian oil & exploration industry

Table 11: Peer comparison in Indian oil and exploration industry, March, 2010.

Company	Market Cap (₹ in Cr.)	P/BV (TTM)	EV/EBIDTA	ROE (%)	ROCE (%)	D/E (x)
O N G C	269,091.23	3.11	6.41	21.6	27.3	0.19
Cairn India	65,205.87	2.04	0.00	0.0	0.0	0.02
Oil India	34,544.25	2.51	0.00	25.0	38.8	0.01
Aban Offshore	3,618.77	1.96	5.68	28.6	19.7	2.01
Hind.Oil Explor.	3,218.22	2.92	8.47	5.2	6.3	0.13
Shiv-Vani OilGas	2,099.41	2.36	6.29	13.6	13.3	1.51
Jindal Drilling	1,180.38	3.36	11.02	14.7	20.5	0.16
Selan Expl. Tech	549.74	3.83	2.11	60.0	75.3	0.27
Dolphin Offshore	454.05	2.39	7.82	31.1	30.8	0.78
Interlink Petro	184.41	4.82	0.00	-0.1	-0.1	0.02
Asian Oilfield	95.90	0.97	5.23	7.5	12.1	0.02
Alphageo (India)	88.52	1.40	1.82	11.5	17.9	0.31
Duke Offshore	13.58	5.35	30.83	7.4	8.0	0.23
Exxoteq Corpn.	2.43	0.28	0.00	0.0	0.0	6.17
Geologging Inds	1.26	1.00	0.00	4.0	7.8	2.92

Source: India Infoline Database

6.4. Financial review of Vedanta Resources, Plc.

We would like to present the financials of Vedanta Resources for the period 2004 to 2010. The data include EBITDA, EPS, free cash flows and ROCE. Vedanta resources reported the financial results for the year ended March, 2010, that 42.41 percent increase in EBITDA, EPS by 84.44 percent and FCF by 6.12 percent. But in 2009, revenues/profits dip down by an average at 40 percent.

Table 12: Financial review of Vedanta Resources, Plc.

(in $ millions)

	FY2010	FY2009	FY 2008	FY 2007	FY 2006	FY2005	FY2004
EBITDA[2]	2,295.9	1,612.2	3,010.4	2,703.0	1,101.5	454.0	322.7
Underlying EPS[3] (US cents per share)	199.2	108.0	303.9	327.0	130.2	48.9	26.6
Free cash flow[4]	1,814.3	1,709.6	2,216.9	1,504.2	634.8	204.4	335.4
ROCE[5] (excluding project capital WIP)	19.9%	24.4%	45.6%	78.5%	37.9%	32.0%	24.1%
Net (cash)/debt[6]	947.1	200.8	(2,142.7)	(432.7)	11.9	74.3	(422.3)

** Figures for FY 2007, FY 2006 and FY 2005 are under IFRS and figures for FY 2004 are under UK GAAP.*
Source: Vedanta's official website

6.5. Effect of acquisition announcement on Share price

The study presented effect of announcement of acquisition on share prices of Vedanta resources, Plc, Cairn energy Plc. and Cairn India Ltd. It also represented the performance of S&P CNX Nifty index of National Stock Exchange of India Ltd (NSE). The announcement of acquisition is declared by both Vedanta and Cairn India on Aug 16, 2010 in a press meet and officially. We analyzed, how this event impacted on stock price's of Vedanta, Cairn energy, Cairn India, ONGC and Sesa Goa. This has been referenced with FTSE-100 and S&P CNX Nifty Index. The study shows graphical representation of stock prices and how they perform before and after the event date, i.e. acquisition announcement date: Aug 16, 2010. This has been depicted in Table 14 below.

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2 EBITDA (earnings before interest, taxes, depreciation and amortization)
This measure is calculated by adjusting operating profit for special items plus depreciation and amortization. Our objective is to take advantage of our low cost base and achieve the best possible margins across our businesses.

3 Underlying EPS (earnings per share)
This is stated before special items and their attributable tax and minority interest impacts. By producing a stream of profits and EPS we will be able to pay a progressive dividend to our shareholders. EPS growth also demonstrates the management of our capital structure.

4 Free Cash Flow
This represents net cash flows before financing activities and investing activities in expansion projects and dividends paid out by Vedanta. This measure ensures that the profit generated by our assets is reflected by cash flow in order to fund the future growth and development of the Group.

5 ROCE (return on capital employed)
This is calculated on the basis of operating profit before special items and net of tax as a ratio to capital invested in operations as at the balance sheet date and excludes investment in project capital work in progress. The objective is to earn consistently a return (net of tax) above the weighted average cost of capital to ensure that capital is invested efficiently and this indicator measures the efficiency of our productive capital.

6 Net Debt
This represents long term borrowings, the debt component of convertible bonds, short term borrowings and bank overdrafts net of cash, cash equivalents and liquid investments.

Table 13: Stock returns on event date: Aug 16, 2010[7]		
Name of company/index	Listed	Stock/index returns (%)
Vedanta Resources Plc	LSE	4.87
Cairn Energy Plc	LSE	5.31
Cairn India Ltd	NSE	-6.36
ONGC Ltd	NSE	-0.56
Sesa Goa Ltd	NSE	-8.94
S&P CNX Nifty	NSE	-0.62
FTSE-100	LSE	0.01

- In Vedanta case, stock returns showing a positive sign before and after the event date.
- Cairn energy is interesting to make a comment that, the stock price is reached peak level ever in its history before the event, but it is slip down after the event.
- We observe that increase in share price of target firm (Cairn India) after an event, but it is actually plunge before an event and swell.
- We may also observe the performance of FTSE-100 and S&P CNX Nifty Index respectively to compare the stock returns with index returns.
- Specifically we represent a graphical picture that, how this acquisition announcement is effected on 'co-partner' as well as prime competitor ONGC in the oil and exploration industry. Before and on the event day, there is no change in stock price, then after it falls down and up.
- Vedanta acquired company in Indian iron ore industry and listed on NSE, SesaGoa shares downward before and tramp after an event.

6.6. Analysis of strategic benefits from acquisition

We have been compiled the data from various sources and explicated the views on acquisition benefits for both the companies, i.e. Vedanta and Cairn energy Plc. Cairn's strategy is to establish commercial reserves from strategic positions in high-potential exploration plays in order to create and deliver shareholder value. Cairn has focused on gaining early entry into frontier basin plays such as in India and Greenland. Following completion of the Proposed Transaction, the Cairn Group's

[7] Graphical presentation regarding impact of acquisition announcement on stock prices on Aug 16, 2010 is placed in Appendix.

principal focus will be to advance its exploration programme in its frontier basin positions in Greenland and continue to pursue its proven strategy of building shareholder value from growth opportunities. Greenland is increasingly recognized as a world-class prospective area. Cairn has built the largest portfolio of exploration assets in Greenland, a frontier exploration area where management sees extensive potential. Cairn's acreage spans three separate prospective basins offshore South, South-West and West Greenland.

"The proposed acquisition enhances Vedanta's position as a natural resources leader in India. Cairn India's Rajasthan asset is world-class in terms of scale and cost, delivering strong and growing cash flow." Vedanta Resources can achieve its ambition to become the world's third largest diversified miner after Anglo-Australian BHP Billiton and Rio Tinto. The acquisition may also position Vedanta as a major oil player in India.

6.7. Estimation of future free cash flows of Cairn India Ltd for the period 2011 – 2020

We have been estimated the future cash flows on the basis of last year financial statements (income statement and balance sheet), i.e. 2009-10. First we show the graphical representation (Figure below) of cash flows from 2011 to 2020 and the table for the reference is depicted in Table 15 below.

For readers and teaching faculty in corporate finance and M&A electives, I suggest you to go through my relevant work, which may help in estimating valuation of the firm, forecasting hurdle rate, and future free cash flows (see Reddy et al., 2013a; Reddy et al., 2013b). In this direction, one can see how to use the event study method in analyzing the impact of global financial crisis on cross-border M&A deals (Reddy et al., 2014).

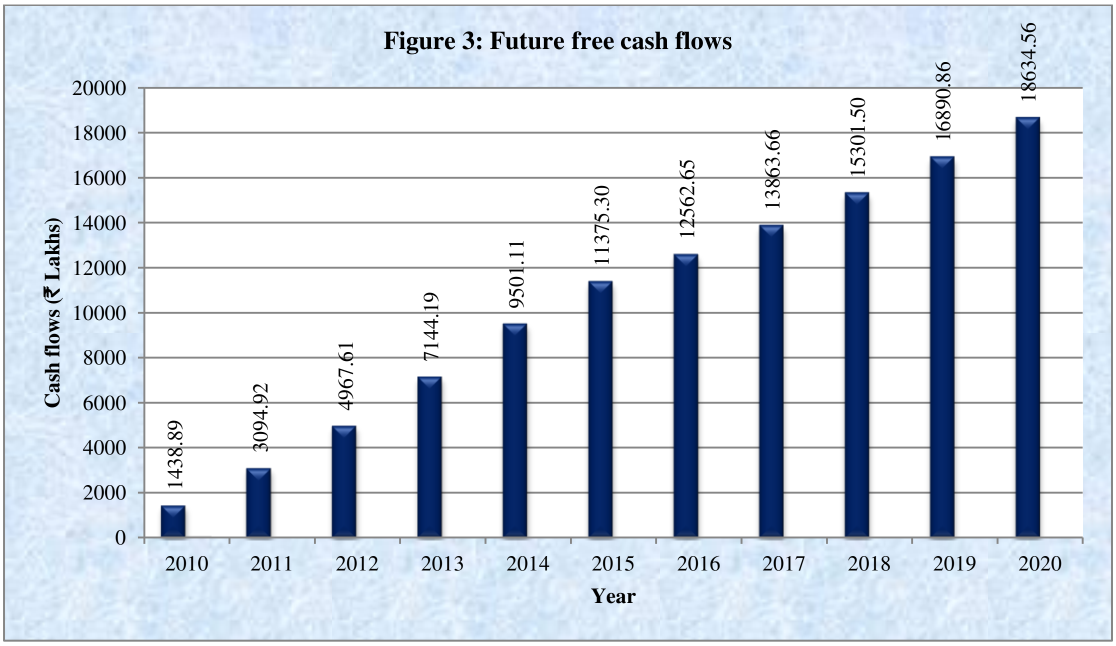
Figure 3: Future free cash flows
Cash flows (₹ Lakhs)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
1438.89
3094.92
4967.61
7144.19
9501.11
11375.30
12562.65
13863.66
15301.50
16890.86
18634.56
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Year

Table 14: Estimating Future Free Cash Flows (FFCFs) of Cairn India Ltd for the period 2011 – 2020												*(in ₹ Lakhs)*
	Particulars	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	Income from Operations	320	687.58	1145.10	1363.13	1588.59	1851.34	2157.56	2482.05	2855.35	3284.80	3745.99
+	Other income	16016	17617.60	19379.36	21317.30	23449.03	25793.93	28373.32	31210.65	34331.72	37764.89	41541.38
=	Gross annual revenue	16336	18305.18	20524.46	22680.43	25037.62	27645.27	30530.88	33692.71	37187.07	41049.69	45287.36
	operating costs & expenditure											
-	(a). operating expenses	338	401.65	450.35	497.65	549.38	606.59	669.91	739.29	815.96	900.71	993.70
-	(b). employee costs	1759	2129.19	2387.32	2638.10	2912.28	3215.59	3551.23	3919.00	4325.45	4774.74	5267.65
-	(c). legal & professional charges	2123	1940.35	1740.47	1442.48	1326.99	1465.20	1618.14	1785.71	1970.91	2175.63	2400.23
-	(d). administration costs	907	1066.73	1196.06	1321.70	1459.07	1611.03	1779.19	1963.44	2167.08	2392.17	2639.12
-	(e). exploration costs	11912	11898.37	11904.19	11567.02	11016.55	11058.11	12212.35	13477.08	14874.83	16419.88	18114.95
	total operating expenses	17039	17436.29	17678.40	17466.94	17264.26	17956.52	19830.81	21884.52	24154.23	26663.13	29415.64
=	**EBDIT**	-703	868.89	2846.07	5213.48	7773.35	9688.76	10700.07	11808.18	13032.84	14386.56	15871.73
-	(f). depreciation & Amortization	5	17.38	56.92	104.27	155.47	193.78	214.00	236.16	260.66	287.73	317.43
=	**EBIT**	-708	851.51	2789.14	5109.21	7617.89	9494.98	10486.06	11572.02	12772.19	14098.83	15554.29
-	(g). taxes for the current year	441	494.24	554.16	612.37	676.02	746.42	824.33	909.70	1004.05	1108.34	1222.76
=	**NOPLAT(net operating profit less adjusted taxes)**	-1149	357.27	2234.98	4496.84	6941.87	8748.56	9661.73	10662.32	11768.13	12990.49	14331.53
+	(h). depreciation & Amortization	5	17.38	56.92	104.27	155.47	193.78	214.00	236.16	260.66	287.73	317.43
=	**Gross cash flows**	-1144	374.65	2291.91	4601.11	7097.34	8942.33	9875.73	10898.48	12028.79	13278.22	14648.97
+	(i). decrease in working capital	2582.89	2894.05	3244.92	3585.78	3958.45	4370.72	4826.93	5326.82	5879.28	6489.96	7159.93
=	**Cash flow from operations**	1438.89	3268.70	5536.82	8186.89	11055.79	13313.05	14702.66	16225.30	17908.07	19768.18	21808.90
-	(j). capital expenditure		173.78	569.21	1042.70	1554.67	1937.75	2140.01	2361.64	2606.57	2877.31	3174.35
=	**Free cash flows (FCF)**	1438.89	3094.92	4967.61	7144.19	9501.11	11375.30	12562.65	13863.66	15301.50	16890.86	18634.56

Source: Cairn India annual report, March, 2010 and authors estimated cash flows manually from 2011 – 2020.
**Working notes placed as "endnotes"*

6.8. Valuation of company under NRR approach by using net asset valuation model

We determine the value of company under NRR approach by using net asset valuation model as a base method. We suggest that the value can be achieving the shareholders satisfaction while negotiating deals in industrial sector. Here, we determine the value of Cairn India Ltd by using current market information and last year financial statements as standalone and not consolidated, which expressed in the following Table 16 below.

Table 15: Valuation of Cairn India Ltd under NRR approach by using Net asset valuation model

Value of Equity:	Amount (₹ Crore)	Amount (₹ Crore)
we considered the average of two maximum values of market cap in last 21 continuous trading days on NSE before the announcement date, i.e. Aug 16, 2010		
Therefore, First maximum:	67441.21	
Second maximum	65752.57	
Average:	66596.89	
Forecasting hurdle rate:	6.54	
Modified value of equity:	Average + (Average*6.54/100)	70952.33
Value of Debt:		1345.00
Value of Company (Adjusted Value of equity + value of debt)		72297.33
We converted in to US dollars (billion) at standard exchange rate ₹46.765/US$.		$15.46 bn
If $15.46 bn is equal to 100 percent market value of company, the proposed transaction is 51% - 60%, Therefore, the value will be:		$7.88 – $9.28 bn

Note: we did not consider non-compete fee, the fee which paid by Vedanta to Cairn Energy at ₹ 55 per share.

7.0. Conclusion

The globalization of India and the emergence of corporate businesses as global rather than local is a key factor that has aided in surge of mergers and acquisitions. Acquisition strategy is the most common means of implementing diversification. We believe that Vedanta resources will creates a value by resources, which include board structure, technical staff, capabilities and core competencies of Cairn India Ltd. Practically, Vedanta is new to the business of oil & exploration, it has to care about implementing the footsteps in Indian oil industry. Cairn energy's strategy is to and interest in exploration rather than refining and marketing. The deal value which is offered by Vedanta is higher than NRR model, so we recommend the Vedanta offer price paid to shareholders of Cairn India. The study is not reference for non-competence fee. There are failures in 'diversification through acquisition' in past, where Vedanta assembles its business in various geographical networks through acquisition only. So, Vedanta will craft a new plan and design an implementation program to add success its twenty years of growth.

7.1. Limitations of study

The study conducted and prepared by using various data from both official sources and public sources. The study is not for the purpose of Vedanta or Cairn or any media as official recommendation. We recommend NRR model to the practitioners, business consultants, investment bankers and academia in valuation and estimating future cash flows of a firm.

ENDNOTES

I. Forecasting hurdle rate has computed by using various parameters, which compiled from believable sources.

NSGR	Net sales growth rate in oil and exploration industry	0.177
IGR	Industry composite growth rate	0.051
GIPGR	Global crude oil production growth rate	-0.007
DOIPGR	Domestic crude oil production growth rate	0.026
PQ(DOIPGR)	Previous quarter domestic crude oil production growth rate	
MS	Market share of Cairn India Ltd (RIL-Cairn India Composite market share: 0.15)	0.075
IMP.GR	Growth rate in crude oil imports	0.053
DD	Estimated domestic demand	0.2
PCMS	Prime competitor market share (ONGC)	0.73
PCSGR	Prime competitor sales growth rate	0.155
log WPI	log Whole sale price index (fuel basket) change {(2010 index – average of 2009-2005 index)/ average of 2009-2005 index}× 100	0.89
σ CR	Std. dev of crude oil prices (Sept 4, 2009 to Aug 27, 2010)	4.35
log Cm.R	log Commercial risk	log 3
log EX.R	log Exchange risk (Rupee vs. US dollar) {(present rate – 184 day average)/184 day average} × 100	-0.084
log PRST	log Political risk for special transactions	log 2
log TR	log Transfer risk	log 3
FHR	Forecasting hurdle rate	6.54%

II. Endnotes for estimated cash flow from 2011 - 2020.

1. *Production estimates*: the prime information was absorbed from the annual report and media news by Cairn India Ltd from time to time. With the reference, we estimate the production as 108.33% in 2011, 60% in 2012, 12.5% in 2013, 10% in 2014 – 2016, 8.5% in 2017 – 2019 and 8% in 2020.

2. *Estimated income from operations*: We add the computed forecasting hurdle rate to the production estimates in future year and FHR never change. This is represented as revenue productive rate. We estimate the future cash flows with the base of 'income from operations at the end of March, 2010'.

3. *We used some ratios to figure out the values in future cash flows*:

(a). *operating expenses to GAR*: here we added inflation rate at 6 percent to each future year

(b). *employee costs to GAR*: here we added increment rate at 8 percent to each future year

(c). *legal and professional costs to GAR*: here we assumed 10% to 2011, 8% to 2012, 6% to 2013 & 5% to 2014 -2020 and added inflation rate at 6 percent to each future year

(d). *administration costs to GAR*: here we assume that costs may increase at 5 percent and added to each future year.

(e). *exploration costs to GAR*: here we assume that there will be down in exploration expenses in future years. Then we estimate the figures like, 65% to 2011, 58% to 2012, 51% to 2013, 44% to 2014 and 40% to 2015 - 2020.

(f). *taxes to GAR*: we assume that there will be no change in corporate tax rate by state/government. Therefore, we took current tax at 2.7 percent of GAR.

(g). *decrease in working capital (DWC) to GAR*: we consider the 15.81 percent of GAR which in 2010 and assume that the same will be in future years.

(h). *Capital expenditure to EBDIT*: we assume that there is 20 percent of EBDIT will be the capital expenditure every future year. This is also reference to compute the depreciation.

(i). *Depreciation*: we estimate that 10 percent of capital expenditure will be equal to depreciation in future years.

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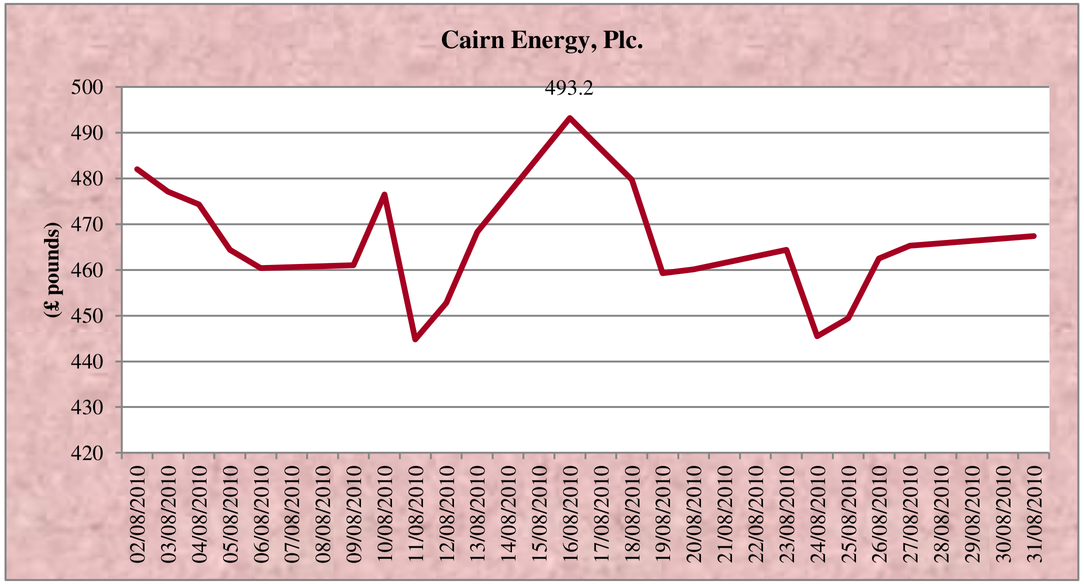
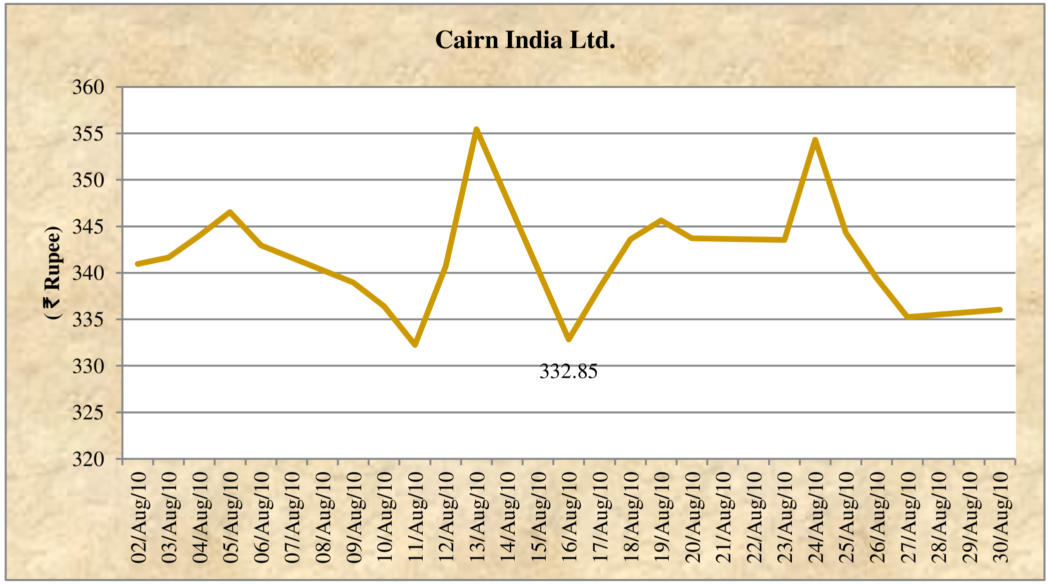
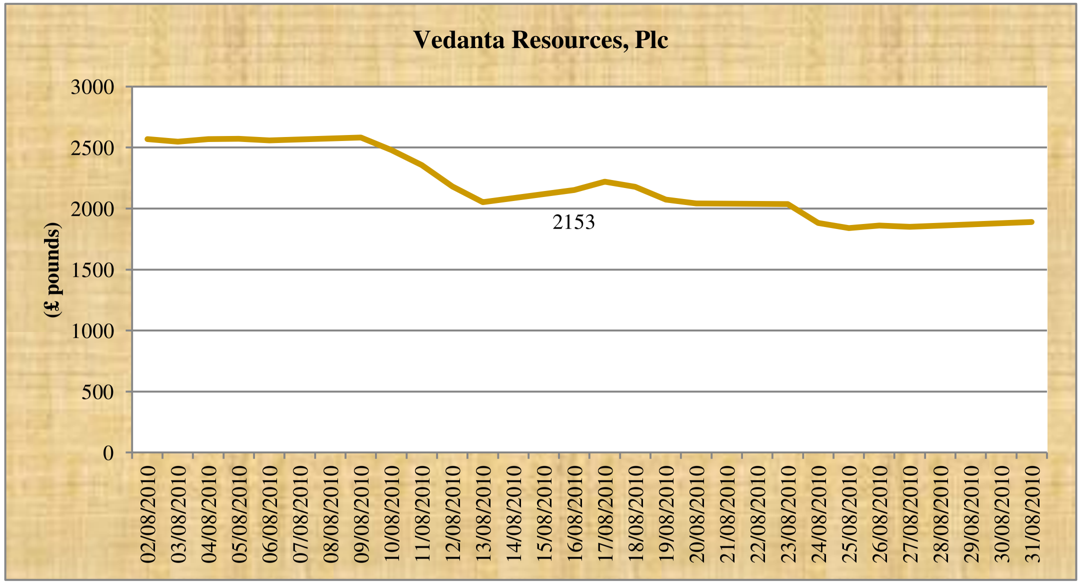
APPENDIX

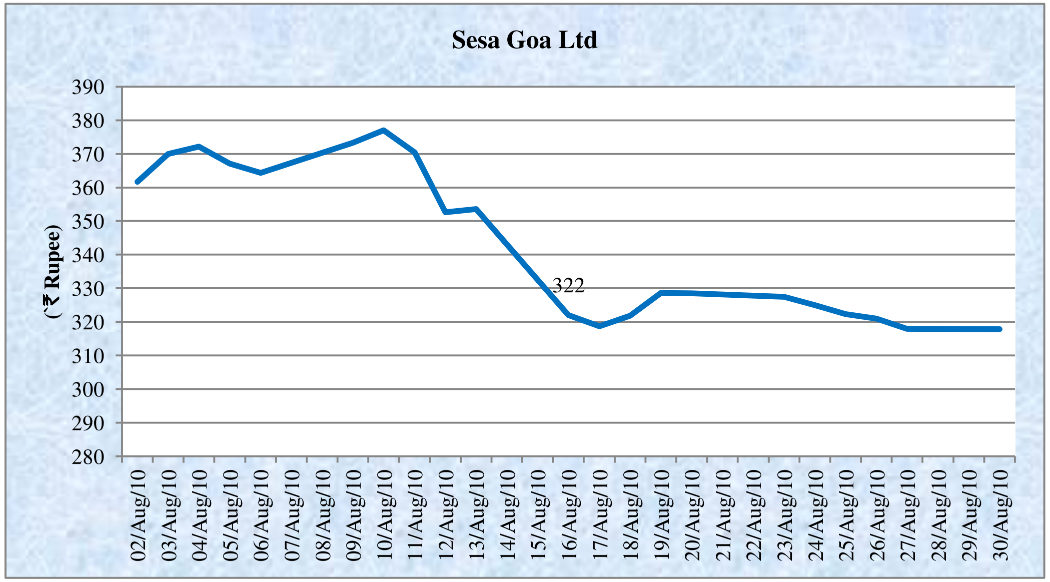
Appendix I: Balance Sheet of Cairn India Ltd		(in ₹ Crore)
Particulars	Mar-2010 (12 Months)	Mar-2009 (15 Months)
SOURCES OF FUNDS :		
Share Capital	1,896.97	1,896.67
Reserves Total	29,993.37	30,055.23
Total Shareholders' Funds	31,890.34	31,951.90
Secured Loans	1,345.00	0.00
Total Debt	1,345.00	0.00
Total Liabilities	33,235.34	31,951.90
APPLICATION OF FUNDS :		
Gross Block	0.10	0.10
Less : Accumulated Depreciation	0.09	0.04
Net Block	0.01	0.06
Capital Work in Progress	24.22	54.03
Investments	33,129.09	29,225.40
Current Assets, Loans & Advances		
Inventories	0.98	0.00
Sundry Debtors	1.57	1.79
Cash and Bank	192.79	2,763.28
Loans and Advances	84.15	85.45
Total Current Assets	279.49	2,850.52
Less : Current Liabilities and Provisions		
Current Liabilities	148.07	107.68
Provisions	3.00	31.53
Total Current Liabilities	151.07	139.21
Net Current Assets	128.42	2,711.31
Total Assets	33,281.74	31,990.80

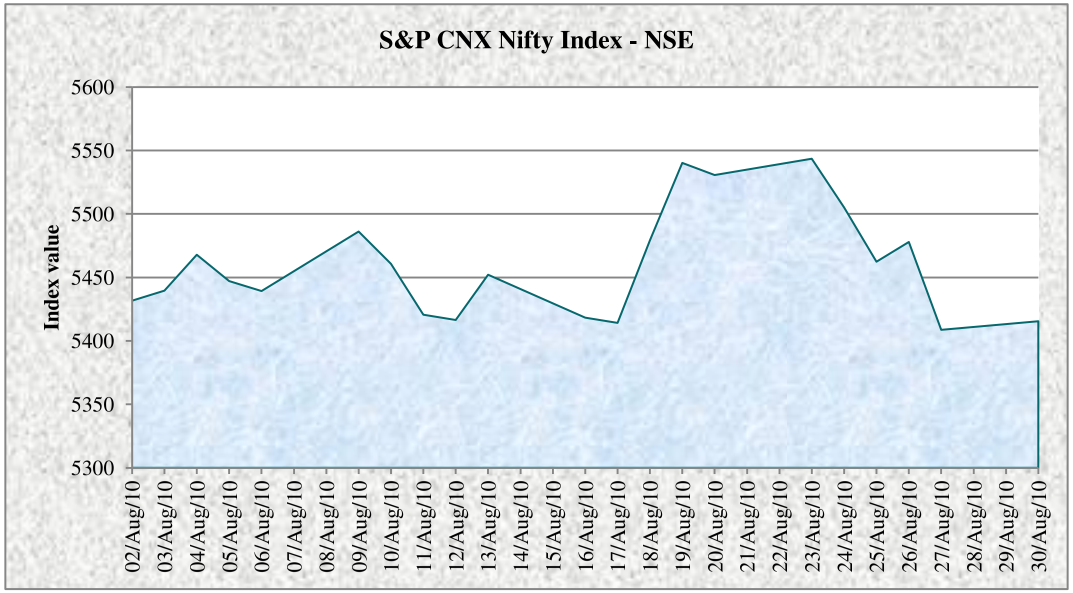
Appendix II: We present a picture of graphical presentation regarding impact of acquisition announcement on share prices of acquisition parties with reference to market index at NSE and LSE.

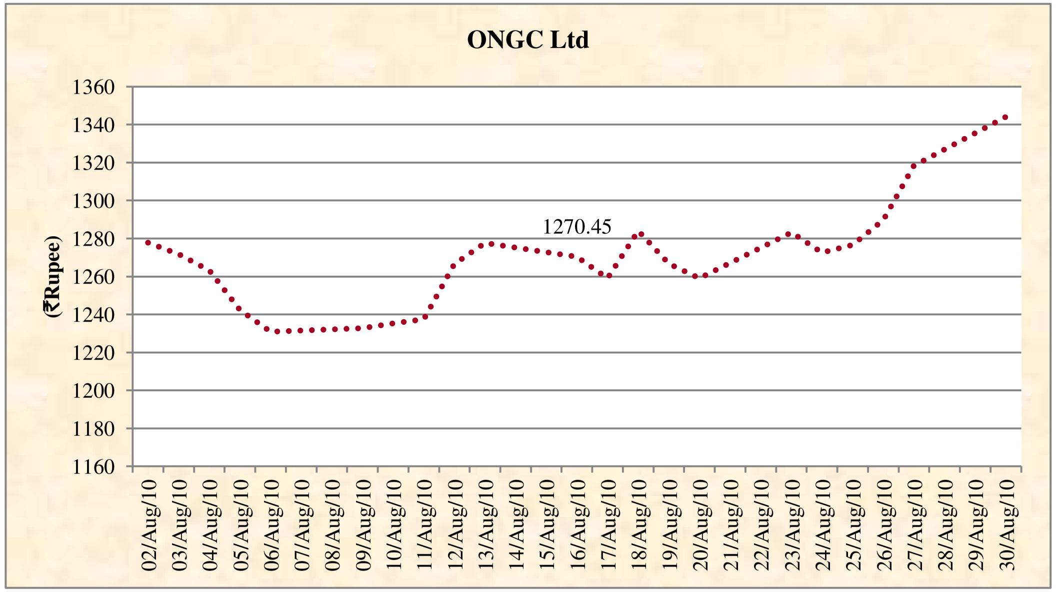

Cairn Energy, Plc.
(£ pounds)
493.2
500
490
480
470
460
450
440
430
420
02/08/2010
31/08/2010

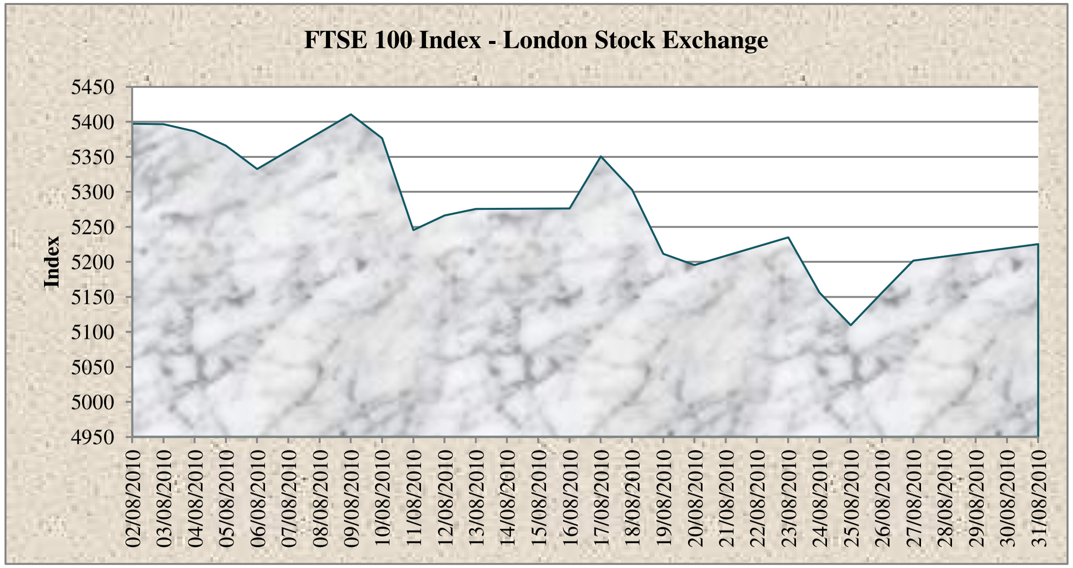

Cairn India Ltd.
(₹ Rupee)
332.85
360
355
350
345
340
335
330
325
320
02/Aug/10
30/Aug/10


Vedanta Resources, Plc
(£ pounds)
2153
3000
2500
2000
1500
1000
500
0
02/08/2010
31/08/2010


Sesa Goa Ltd
(`₹ Rupee)
322
390
380
370
360
350
340
330
320
310
300
290
280
02/Aug/10
30/Aug/10


S&P CNX Nifty Index - NSE
Index value
5600
5550
5500
5450
5400
5350
5300
02/Aug/10 03/Aug/10 04/Aug/10 05/Aug/10 06/Aug/10 07/Aug/10 08/Aug/10 09/Aug/10 10/Aug/10 11/Aug/10 12/Aug/10 13/Aug/10 14/Aug/10 15/Aug/10 16/Aug/10 17/Aug/10 18/Aug/10 19/Aug/10 20/Aug/10 21/Aug/10 22/Aug/10 23/Aug/10 24/Aug/10 25/Aug/10 26/Aug/10 27/Aug/10 28/Aug/10 29/Aug/10 30/Aug/10


ONGC Ltd
(₹Rupee)
1360
1340
1320
1300
1280
1260
1240
1220
1200
1180
1160
1270.45
02/Aug/10 03/Aug/10 04/Aug/10 05/Aug/10 06/Aug/10 07/Aug/10 08/Aug/10 09/Aug/10 10/Aug/10 11/Aug/10 12/Aug/10 13/Aug/10 14/Aug/10 15/Aug/10 16/Aug/10 17/Aug/10 18/Aug/10 19/Aug/10 20/Aug/10 21/Aug/10 22/Aug/10 23/Aug/10 24/Aug/10 25/Aug/10 26/Aug/10 27/Aug/10 28/Aug/10 29/Aug/10 30/Aug/10


FTSE 100 Index - London Stock Exchange
Index
5450
5400
5350
5300
5250
5200
5150
5100
5050
5000
4950
02/08/2010 03/08/2010 04/08/2010 05/08/2010 06/08/2010 07/08/2010 08/08/2010 09/08/2010 10/08/2010 11/08/2010 12/08/2010 13/08/2010 14/08/2010 15/08/2010 16/08/2010 17/08/2010 18/08/2010 19/08/2010 20/08/2010 21/08/2010 22/08/2010 23/08/2010 24/08/2010 25/08/2010 26/08/2010 27/08/2010 28/08/2010 29/08/2010 30/08/2010 31/08/2010

Appendix III: it shows the picture of Cairn India Ltd exploration operations in India. This picture is accessed from the official site of Cairn India Ltd.