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INDO-US PARTNERSHIP – EXPLORING EMERGING BUSINESS OPPORTUNITIES FOR CREATION OF WEALTH IN THE WORLD'S LARGEST DEMOCRACIES

Surendra S. Yadav*, Anuradha Balaram and Neelam Rani*****

ABSTRACT

India and USA, though at different stages of economic development, have a lot in common in terms of vision and ideology. For historical reasons, business partnerships between these two countries have not been explored to their full potential. With increased globalization, it is becoming more apparent that both countries are likely to benefit tremendously by fostering strategic business partnerships in key emerging areas where USA's core competence in technology and research and development (R&D) etc. combine with India's factor endowments, demographic dividend, entrepreneurial abilities and changing mind-set to create formidable and enduring joint ventures which will not only enrich both countries but will also enhance global opportunities and welfare.

I. Introduction

Globalization is an irreversible process and has far-reaching, often unanticipated effects. It is currently causing concern to developed as well as emerging economies, including USA and India. Conventional power and economic equations are being questioned, new horizons are being explored and new synergies are being established between these two countries. The two largest democracies, India and USA, are likely to greatly benefit from globalization through mutual cooperation and strategic partnerships. USA (the world's largest economy) and India (one of the world's fastest growing economies) share common values based on democratic, multi–cultural and multi-religious societies, and a strong belief in the Rule of Law, individual rights, free speech and the importance of education. A "never-say-die" entrepreneurial spirit is another common factor that marks both these economies. All these factors support bilateral strategic partnerships at the country, industry and firm level. US citizens of Indian origin as well as Non Resident Indians (NRIs) working in the US have contributed immensely to several hi-tech areas in the US. The virtual bridge between U.S. high-tech centers and the Hyderabad-Bangalore corridor in India is the most obvious example of the high-tech future. According to a recent Duke University study, more than one in seven start-ups in Silicon Valley is founded by an immigrant from India.

When two democratic nations establish an equal partnership based on trust and mutual respect, the possibilities are truly limitless. This paper looks at this possibility. The paper has following sections: Section I – Introduction; Section II – Scope, Methodology used and limitations;

* Professor & Head, Department of Management Studies, Indian Institute of Technology Delhi. ssyadav@dms.iit.ac.in

** Director, Department of Expenditure, Ministry of Finance, Government of India. abalaram@nic.in

*** Research Scholar, Department of Management Studies, Indian Institute of Technology Delhi. neelam.iitd@gmail.com

Section III – Factors affecting competitiveness of nations, bilateral capital and trade flow and compares the competitiveness of two countries; Section IV - Present economic situation in USA; Section V- Present economic situation in India; Section VI - Synergies and Way forward; Section VII –Conclusion; Annexure- Major US Players in India and Indian Multinational Companies abroad including USA.

II. Scope of the Paper, Methodology and Limitations

Since the areas of convergence between USA and India are many, this paper attempts to limit the focus only to a few emerging areas where successful business partnerships can emerge at the firm level. Political, Defense, Space and Environmental matters have been kept out of the scope of this paper as individual firms will not have much control over these areas. The paper relies extensively on secondary data- academic reports, press reports, government publications etc., all of which have been acknowledged. The paper also relies on interviews with experts in the Indian Ministries of Commerce and Finance as well as the Indo-American Chamber of Commerce, India office.

1. Open Skies Agreement between the two nations in the year 2005. This agreement is expected to increase air connectivity between the two countries, thereby improving the commercial and trade relations.
2. The US-India Agricultural Alliance agreed upon in 2005, between the two countries, concentrates on promoting teaching, research, service and commercial linkages. In year 2006, under the bilateral Knowledge Initiative on Agriculture, there was an agreement to link universities, technical institutions and businesses to support agriculture education, joint research and capacity building projects especially in biotechnology.
3. The visits of US Commerce Secretary Gutierrez in Feb., 2007 and United States Trade Representative (USTR) Susan Schwab in April, 2007 have been a great impetus for the India US Trade Relations highlighting the multilateral issues including those on the Doha Round of Multilateral Trade Negotiations.
4. Outsourcing of knowledge work to India by the US based companies is a significant feature of the India US Trade Relations as producing goods and services in India makes them cheaper in the US.
5. The India US Trade Relations are also characterized by the inter-dependence in terms of financial markets as US institutional investors are increasingly investing in India and on the other hand Indian multinational corporations are buying companies in the US and establishing operations in the US.
6. The establishment of US-India CEO Forum, US-India Trade Policy Forum, the International Thermonuclear Experimental Reactor (ITER) initiative on fusion energy, Agreement on India's participation in FutureGen and, the Integrated Ocean Drilling programme are also some recent joint initiatives between the countries.
7. Some more initiatives taken by the two countries such as the India-US Economic Dialogue, the bilateral India-U.S. Energy Dialogue, establishment of the India US Global Issues Forum, High Technology Cooperation Group (HTCG), the India-US Cyber Security Forum (IUSCSF) and the two Memoranda of Cooperation, one on Transportation Science and Technology and other on Maritime Science and Technology have indeed elevated our strategic and commercial relationship as never before

From the Table 1, a comparative picture of the two nations indicates that the USA has huge advantage over India in terms of land – man ratio and stage of development. Consequently the per capita income of a US citizen is almost twenty times higher than that of an Indian citizen. India is still primarily an agrarian economy with a majority of the people living in rural areas. Around 29 per cent of India's population is still below the poverty line. Unlike in the USA,

where agriculture contributes only around 1 per cent of the GDP, in India, 17.5 per cent of the GDP comes from the agricultural sector. The small and fragmented size of farm holdings, the continued use of the bullock for ploughing, dependence on the monsoon, and disguised unemployment are some of the ills that plague Indian agriculture.

Table 1: Comparison of Select Parameters

Parameter	USA	India
Land/Man ratio	USA has three times the land India has and one third the population (0.03 per square km)	Density of population is extremely high with over a billion people living on one-third of USA's surface area. (0.3 per square km)
Per capita Income (PPP)	$44070	$2460
Stage of development	Innovation driven advanced economy	Factor driven emerging economy
Contribution of agriculture to GDP (per cent)	1.2	17.5
Contribution of industry to GDP (per cent)	22.8	27.9
Contribution of services to GDP (per cent)	76.0	54.6
Contribution of trade to GDP (per cent)	22.5	32.4
Real GDP growth (per cent)	2.9	9.7
Inward FDI (2007-08)	US$ 180.6 billion	US$17.5 billion
Dollar-Re exchange rate	Depreciating dollar	Appreciating rupee
Inflation (annual per cent)	3.2	5.9

Source: World Development Indicators Database, April 2007.

In both USA and India, the services sector is contributing maximum to the GDP – the percentage contribution of industry in both countries seems to be more or less the same. Since USA is already a developed economy, its scope for growth is relatively lower than that of India where the growth potential is tremendous. In recent years, the rupee has been appreciating significantly against the dollar, causing concern to the Indian exporters but giving a sense of comfort to Indian citizens who can now better afford to holiday in the US or educate their children there etc.

III. A. Factors Affecting Competitiveness of Nations, Bi-lateral Capital and Trade Flow between USA and India

While competitiveness is a firm level phenomenon, the ability of a firm to compete successfully in the global arena can be enhanced or reduced by the national business environment in which it operates. Countries, whose policy makers give top priority to fostering private enterprise and who believe in free market ideology are more likely to have global giants operating from their geographical boundary. Nations, like firms, are unique bundles of heterogeneous resources and capabilities. They seek to capitalize on these resources and capabilities in order to build and maintain core competencies in certain industry sectors, which can provide a unique identity to the country and lead to sustainable competitive advantage, if those resources and capabilities cannot be easily imitated. (Porter, 1990). In the more open global trading environment of the 21st century, nations are under pressure to develop and market their "national brands" in order to "position" themselves favorably in the mental maps of demanding global consumers. A nation's positive image in any particular industry may impact the ability of its firms to compete in global markets. Spillover effects may also benefit firms in other industries thereby enhancing the competitive advantage of national firms in general (Kotler et al, 1997). Porter (1990) argues that there is a critical link between the national environment and firm level competitive advantage and that the answer to national competitiveness may not rest on the economy as a whole, but in specific industries. So, in an increasingly global economy, the future prosperity of a country depends more and more on the international competitiveness of its firms and industries.

The globalization of the business environment and the need for competing simultaneously

in multiple markets has led to the proliferation of inter-firm partnerships across national borders. Hemphill (2005) argues that, from a business perspective, an effective R&D offshore outsourcing strategy embraces an 'Open Innovation' approach, which emphasizes a careful balance between retaining core internal R&D capabilities while leveraging formal, collaborative technology relationships that enhance new product development and protect the corresponding intellectual property.

Wilkinson et al (2000) examined the determinants of the international competitiveness of firms and trade promotion policy from a network perspective that emphasizes the role and importance of inter firm relations and networks spanning industry and international boundaries. They have stressed the important role played by personal and business relations between firms within and across industry boundaries and within and between different countries. An understanding of the structure and operations of a primary network and its associated ancillary networks provide a basis for targeting trade promotion policies and for enhancing a firm's international competitiveness.

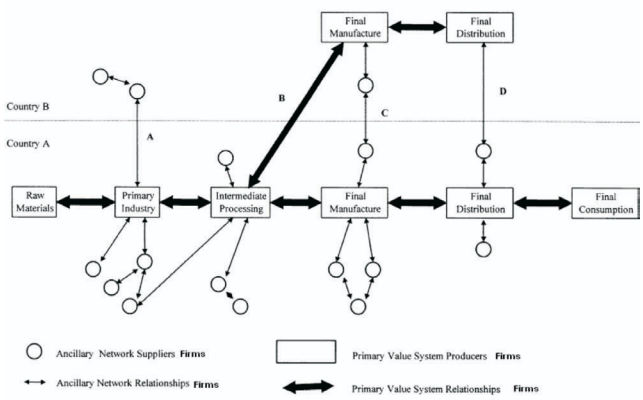


Figure1: A Hypothetical Example of the Structure of Industrial Relations Networks within and Between Countries

(Source: Adapted from Wilkinson.I.F., Mattsson, L.G. and Easton, G.(2000))

Figure 1 illustrates the kind of inter-industry and inter-firm connections that exist in a nation's economy. It depicts a hypothetical example of the value production system associated with transforming raw materials into finished products and services for final consumption. Two types of networks of relations are identified: (a) those associated with the primary value system and (b) those associated with ancillary value systems. The primary value system is defined in terms of the sequence of relations involved in the transformation of raw materials through various production stages to the final distribution to end users. Ancillary value systems refer to the networks of relations involved in supplying various types of inputs to the primary value system at each production stage, including production equipment, subassemblies, technical know-how and specialized services required to carry out the activities performed by firms in the primary value system. It can be viewed as the secondary network infrastructure that supports the primary network. The international competitiveness of some firms in a network, as well as their international connections and experience, can make an important contribution to the international potential of other firms, depending on the types of relationships they have with them. Internationally competitive firms can play a role as leading edge customers or suppliers to other firms and provide role models for others to emulate. More generally, the presence of firms with international connections and experience may facilitate the internationalization of

other companies in the network (Bonaccorsi, 1992).

As an example of interfirm linkages and competitiveness, foreign companies are also attracted to Asia's academic institutions as a source of intellectual capital, with companies looking to leverage foreign research efforts and facilities. Moreover, firms now have the ability to perform R&D 24 hours a day, seven days a week. For example, programming code is developed in the US during regular work hours, and then follows the time zones to India, on to Europe and back to the US for the beginning of the next 24-hour period (Babcock, 2004). The Boston Consulting Group (BCG) reports that its study of offshore outsourcing found that US firms with major operations in low-cost countries (China and India, for example) report faster R&D (Blustein, 2004). Furthermore, the BCG study found that middle level engineers in offshore locales tend to be more motivated than middle level engineers in the US and Europe.

Chandra et al (2006) found that while India has not been able to match China in manufacturing prowess, it may have found its competitive advantage in the area of knowledge-based services to which its factor endowments are uniquely suited. In the IT field, India has the largest number of Java-certified developers in the world and its scientists and engineers are fluent in English, thereby reducing communication problems found in other countries, popular for outsourcing (Frost & Sullivan, 2004).

Moreover, India offers IT R&D opportunities in an array of computer sub-specialties, including computing architecture, encryption and network security, human computer interface, programming language and software engineering. Similarly, in telecommunications R&D, business support systems, new versions of IPv6, video servers and wireless sensors opportunities are available for offshore outsourcing on the Indian sub-continent (Hemphill , 2005).

In the pharmaceutical sector, Ernst & Young (2004) identifies India as an emerging hub for collaborative and outsourced pharmaceutical R&D. India can combine lower-cost manufacturing with adequate regulatory protection of intellectual property (IP), resulting in a potential 30-50 per cent cost saving for global companies. A recent phenomenon has Indian companies shifting their strategic models from business-driven research to research-driven business. According to Ernst & Young, Indian companies are adopting a combination of alternative business models to navigate competition and opportunity. These include: Focusing on export led growth through subsidiaries or acquisitions in high margin regulated markets; strengthening research capabilities; collaborating across the value chain with multinationals through licensing, collaborative R&D or co-marketing arrangements; contract research and manufacturing.

III. B. Comparison of Competitiveness of India and USA

World Economic Forum defines national competitiveness as the set of factors, policies and institutions which determine the level of productivity of a nation. Raising productivity-i.e. making better use of available factors and resources –is the driving force behind the rate of return on investment which, in turn, determines the aggregate growth rates and stage of development of an economy (Global Competitiveness Report, 2006-07).The Global Competitiveness Report's overall competitiveness ranking is the Global Competitiveness Index (GCI, 2007-08) which is based on 12 pillars of competitiveness, providing a comprehensive picture of the competitiveness landscape in countries around the world at all stages of development. The pillars include:

- Institutions,
- Infrastructure,
- Macroeconomic Stability,

- Health and Primary Education,
- Higher Education and Training,
- Goods Market Efficiency,
- Labor Market Efficiency,
- Financial Market Sophistication,
- Technological Readiness,
- Market Size,
- Business Sophistication
- Innovation.

These characteristics are categorized into three indexes which determine the stage of development of a country (Figure 2). The three sub-indexes are

- Basic Requirement
- Efficiency Enhancers
- Innovation and Sophistication Factors.

A nation's competitiveness is determined by the stage of development of its economy. Porter (1990) and Global Competitiveness Report (2007-08) categorized three stages of development on the basis of the importance of these 12 characteristics. In the first stage, the economy is factor driven and the countries compete on the basis of their factor endowments, primarily unskilled labours and natural resources. ***Companies compete on the basis of their low price and sell basic products and commodities, with their low productivity reflected in low wages.*** Maintaining competitiveness at this stage of development depends upon well functioning private and public institutions, appropriate infrastructure, a stable macroeconomic framework, and a healthy and literate workforce.

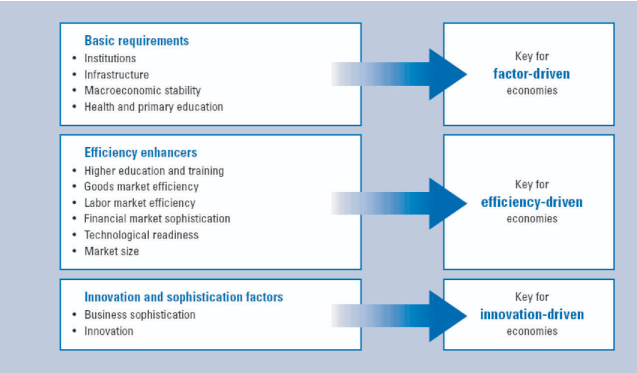


Figure 2: The 12 Pillars of Success and Stage of Development

(Source: Adapted from Global competitiveness Report (2006-07), World Economic Forum)

With advancing development, as wages rise economy moves into efficiency driven stage of development. At this stage there arises need for more efficient production processes and increased product quality. ***At this point competitiveness is largely driven by higher education and training, market efficiency and size and the ability to get benefits of existing technologies.***

In the Innovation driven stage of development, economies are able to sustain higher wages and associated standard of living only if the enterprises and business are innovative. ***In this stage,***

companies compete through innovation, producing new and different products through sophisticated production processes.

Table 2 provides comprehensive detail of comparison of scores and ranks of USA and India based on various pillars, sub indexes and weighted average score.

Table 2: Comparison of Rank and Score in Global Competitiveness Index 2007-08

	INDIA		USA	
	Rank (out of 131 countries/ economies)	Score (out of 7)	Rank (out of 131 countries/ economies)	Score (out of 7)
Global Competitiveness Index 2007-2008	48	4.33	1	5.7
Sub index A: Basic requirements	**74**	**4.22**	**23**	**5.4**
1. Institutions	48	4.32	33	4.8
2. Infrastructure	67	3.45	6	6.1
3. Macroeconomic stability	108	4.21	75	4.8
4.Health and primary education	101	4.92	34	6
Sub index B: Efficiency enhancers	**31**	**4.52**	**1**	**5.8**
5. Higher education and training	55	4.13	5	5.7
6. Goods market efficiency	36	4.66	12	5.3
7. Labor market efficiency	96	4.07	1	5.7
8. Financial market sophistication	37	4.93	11	5.7
9. Technological readiness	62	3.17	9	5.4
10. Market size	3	6.16	1	6.8
Sub index C: Innovation and sophistication factors	**26**	**4.36**	**4**	**5.7**
11. Business sophistication	26	4.81	7	5.6
12. Innovation	28	3.9	1	5.8

Source: Adapted from Global competitiveness Report (2007-08), World Economic Forum.

Figure 3 and 4 display these scores obtained by India and USA on the 12 pillars plotted on radar chart

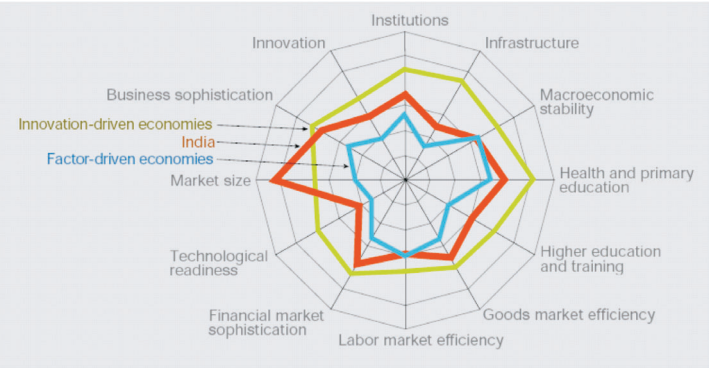


Figure 3: India's Competitiveness
(Source: World Economic Forum.
http://www.weforum.org/pdf/summitreports/india2007/state_national_competitiveness.htm)

From scores India is still perceived as a factor driven economy and although some sectors are in the transition phase, considerable effort will have to be made to make institutions deliver, labour flexible, improve the quality of labour through better health and education and ensure that inflation and indebtedness is controlled.

India has a larger market size than innovation driven economies and this can be converted to a major asset as developed countries will be focusing on doing business with India in order to grow further. Except in the case of labour market efficiencies and macroeconomic stability, India seems to be better off than factor driven economies as a whole. In financial market sophistication, business sophistication and goods market efficiency, India is almost on par with innovation-driven economies. On the macroeconomic stability pillar, the country has a government deficit that places it 108th, which over time has led to the buildup of large government debt. In addition, India is experiencing inflation in excess of 6 percent at a time when the rate of price increases has been much reduced around the world. In terms of health, India has poor health indicators (ranked 101st in this sub pillar) with high infant mortality and low life expectancy, which are related to the high prevalence of diseases such as malaria and tuberculosis. Enrollment rates in the educational system remain low, with primary education also receiving poor marks for quality. Still focusing on human resources, within the labor market efficiency pillar India ranks 96th. In the area of institutions, there has also been a marked decline in areas such as the transparency of government policymaking, business costs of crime and violence, judicial independence, and ethics.

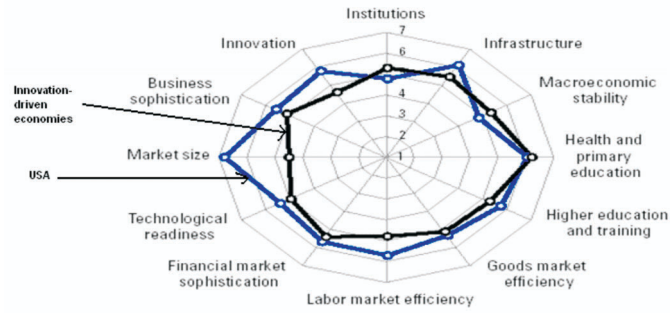


Figure 4: USA's Competitiveness

(Source: Adapted from Global competitiveness Report (2007-08), World Economic Forum)

The United States is the world's most competitive, productive and innovative economy and is endowed with efficient factor markets supported by an excellent university system and strong collaboration between the educational and business sectors in research and development.

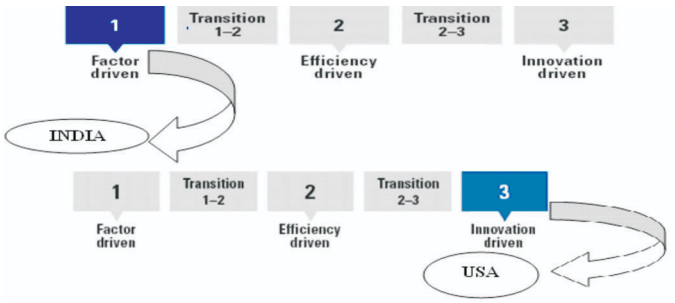


Figure 5: Stage of Development of India and USA

(Source: Adapted from Global competitiveness Report (2007-08), World Economic Forum)

Considering that USA and India are in two stages of development, there is considerable scope for mutual benefit provided USA provides consultancy in system setting, technology transfer, institution building, setting up infrastructure net-works etc and makes use of India's demographic dividend, innovative entrepreneurs, technical experts and lower labour costs

III C. Factors Affecting Bi-lateral Capital and Trade Flows between USA and India

The political environment of the two countries and their stand in geo-political issues affect business relationships between firms of the two countries because their acceptance in the other country depends on their country's policy. The local press plays an important part in either whipping up sentiments in favour of cross-country trade and investment or against it. In order to reduce the information asymmetry between the two countries, the role of a responsible Press cannot be underestimated.

Other factors include the relative strength of the two economies, exchange rate of the currencies, domestic interest rates, regional trade agreements which each country has that the other is not part of, etc. The large number of successful non-resident Indians living in the USA also has an impact on bi-lateral relations, especially as they are recognized to be economically as well as politically influential.

India's sizable population and growing middle and higher income class makes India a potentially large market for U.S. goods and services. The proportion of households moving towards richer and well to do category is going up in India. There also exist huge untapped rural potential.

Table 3: US Direct Investment Abroad

	(in US $ Million)				
	Direct investment position on a historical-cost basis				
	2002	2003	2004	2005	2006
India	4232	4868	6764	6634	8852
India as percentage of All Countries	0.3	0.3	0.3	0.3	0.4
India as percentage of Asia and Pacific	1.6	1.8	1.9	1.7	2.1

Source: *http://www.bea.gov/index.htm.*

It is visible from table 3 that only a negligible proportion of US's outward FDI (0.4per cent) comes to India. However in absolute terms, there has been a doubling of FDI from USA between 2002 and 2006. United States is India's second largest source of FDI after Mauritius. On investment front, USA covers almost every sector in India, where FDI is permissible. The US investor community is today increasingly sharing confidence in the future of the Indian economy. Several areas like infrastructure, IT, Telecom sector, energy and other knowledge industries such as pharmaceuticals and biotechnology possess immense potential for progressing economic cooperation between India and the US.

Table 4: Share of USA FDI Equity Inflows

							(in US $ Million)
Rank	Country	2004-05(April-March)	2005-06(April-March)	2006-07(April-March)	2007-08(April-March)	Cumulative inflows (from April 2000 to Feb. 2008)	per cent age with total inflows(in terms of rupees)
2	FDI from USA	669	502	856	1,021	4,485	8.63per cent
Total FDI Inflows*		3,754	5,546	15,726	20,136	58,065	-
USA FDI inflows as Percentage of Total inflows		17.8	9.05	5.4	5.07	7.7	

Note: (i)*Includes inflows under NRI schemes of RBI, stock swapped and advances pending for issues of shares.

Source: http://dipp.nic.in/fdi_statistics/india_fdi_Feb2008.pdf

As apparent from Table 4, FDI from USA has a significant role in India's FDI basket and ranged from 17.8 per cent in 2004-05 to 5.07per cent in 2007-08. If we take stock of all FDI flowing in since 2000, FDI from USA amounted to 8.63per cent of the total basket.

Table 5: Foreign Direct Investment in USA

					(in US $ Million)
	2002	2003	2004	2005	2006
India	227	352	629	1497	2002
India as per cent of All Countries	0.01	0.03	0.04	0.09	0.11
India as per cent of Asia and Pacific	0.12	0.17	0.27	0.65	0.77

Source: Directorate General of Commercial and Industrial Statistics (DGCI&S), Several Years

In recent years, India has also made progress in expanding their investment base in the United States of America. However, India's FDI to the USA as well as USA's FDI to India are very low. There is a need to improve the reciprocal investment climate in both these countries through people to people linkages.

Investments in India have had attractive returns. A majority of US firms have reported double-digit year-on-year growth. Indian arms of two American banks, Citibank and Bank of America are more profitable in India than their global average.

It is clear from Table 6 that India's exports to USA have been increasing in absolute terms but from 2003 onwards, there has been a noticeable fall in the proportion of Indian exports to USA as compared to total Indian export basket. The appreciating rupee as well as the increasing demand for Indian products from other emerging economies could be attributed to this trend.

Table 6: Exports to USA

(in US $ Million)			
year	Exports	per cent Share	per cent Growth
1999-2000	8,395.61	22.80	16.61
2000-2001	9,305.12	20.88	10.83
2001-2002	8,513.34	19.43	-8.51
2002-2003	10,895.76	20.67	27.98
2003-2004	11,490.03	18.00	5.45
2004-2005	13,765.75	16.48	19.81
2005-2006	17,353.06	16.83	26.06
2006-2007	18,851.42	14.93	8.63

Source: Directorate General of Commercial and Industrial Statistics (DGCI&S), several years

Table 7: Imports from USA

			(in US $ Million)
year	Imports	per cent Share	per cent Growth
1999-2000	3,560.22	7.16	-2.2
2000-2001	3,015.00	5.97	-15.31
2001-2002	3,149.62	6.13	4.46
2002-2003	4,443.58	7.24	41.08
2004-2005	7,001.35	6.28	39.06
2005-2006	9,454.74	6.34	35.04
2006-2007	11,726.96	6.32	24.03

Source: Directorate General of Commercial and Industrial Statistics (DGCI&S), several years

As evident from table 7, USA's contribution to India's import basket has also been steadily increasing in absolute terms but as a proportion to India's import basket, it has remained more or less steady at 6-7per cent .The main items of US exports to India. are machinery, precious stones and metals, organic chemicals, optical and medical instruments, aircraft and aviation machinery.

India's annual growth in the manufacturing sector, at 11 percent (and accelerating) is close to catching up with growth in services. Exports of manufactured goods to the United States are now rising faster in percentage terms than China's, albeit from a much smaller base. Although manufacturing forms only 17 percent of India's GDP, it contributes about 53 percent of exports and receives more than two-thirds of the total foreign investments. It accounts for 11 percent of the workforce of about 45 million.

Table 8: Country-Wise Foreign Technology Transfer Approvals

Ranks	Country	No. of Technical Collaborations approved	Percentage of total tech. approvals
1.	U.S.A.	1,772	22.31
2.	Germany	1,106	13.93
3.	Japan	868	10.93
4.	U.K.	860	10.83
5.	Italy	484	6.09
6.	Other countries	2,851	35.91
Total of all country		7,941	100.00

Source: http://dipp.nic.in/fdi_statistics/india_fdi_Feb2008.pdf

The table 8 shows that USA leads significantly in technology transfer agreements that India signs twenty two per cent of the total agreements signed so far are from USA.

The recently launched Knowledge Trade Initiative (KTI) which aims at strengthening Indo-US leadership in the knowledge economy by harmonizing bilateral positions on key issues affecting knowledge trade, is expected to provide a fillip to Indo-US relations further. Thus, given the comparative advantages of the two countries, there is a tremendous scope for further strengthening the business ties including trade and investment between the two countries.

IV. Present Economic Situation in USA

USA has been reeling under the sub-prime crisis and a credit crunch, which has brought about a slowdown in the economy. There is a mood of pessimism. Lower growth has been registered for the last quarter of 2007 (only 0.6 per cent compared to the projected 1.2 per cent) due to downturn in inventory investment and decelerations in exports, in personal consumption expenditure, and in federal government spending. According to the IMF, growth in USA is uncomfortably close to the "stall speed" associated with past recessions, even though unemployment and real interest rates are more favorable. The subprime mortgage difficulties could deepen the housing downturn, which, in turn, could weaken consumption, and financial conditions could tighten. And with output close to potential, unemployment low, commodities prices elevated, and productivity growth falling, cost pressures could increase inflation.

The IMF further says that financial innovation and stability have been critical to U.S. economic success. Innovation has been instrumental in attracting capital inflows and easy financing of the current account deficit, and has also helped disperse risk, as core institutions have moved to an "originate-to-distribute"[1] The originate-to-distribute model breaks down the process of credit extension, from origination to the ultimate financing, into component parts, or stages such as

(i) extending the mortgage loan to a potential homebuyer by the originator—a lender or a broker serving as a lender's agent,

(ii) selling the mortgage by the originator to another financial institution ,

(iii) combining the mortgage with many other loans to create a marketable security known as mortgage-backed security (MBS). " model and derivative markets have grown. At the same time, new instruments have made it more difficult to assess vulnerabilities and have thus created new regulatory challenges.

Other concerns in the USA are the wide current account deficit at around 6 percent of GDP, depreciating dollar, high oil prices and above all increased federal spending on Social Security, Medicare, and Medicaid is set to increase sharply over coming years, threatening long-run fiscal sustainability. The key fiscal challenge remains reform of unsustainable entitlement programs.

Unemployment and inflation are expected to worsen. Lower value addition activities in the economy will surely have an impact on the job creation. US Bureau of Labor Statistics already reported a record net job loss of 17,000 in the month of January 2008, 63,000 in the month of February 2008, and 80,000 in the month of March 2008. This is bound to increase unemployment. Assuming that unemployment rate will increase to 5.3 per cent in 2008 as projected by the

1. The originate-to-distribute model breaks down the process of credit extension, from origination to the ultimate financing, into component parts, or stages such as (i) extending the mortgage loan to a potential homebuyer by the originator—a lender or a broker serving as a lender's agent, (ii) selling the mortgage by the originator to another financial institution , (iii) combining the mortgage with many other loans to create a marketable security known as mortgage-backed security (MBS).

Federal Reserve, from 4.6 per cent in 2007, approximately 8 million US labor force will remain without a job, of which about 1 million will be jobless due to increased unemployment rate.

BOX 2: Some Questions Related to Current Economic Situation in the USA

The current economic situation in the US raises the following questions.

- Is globalization going against US interests?
- Can US promote agricultural trade with India without reciprocity of opening up of its own market to Indian farmers?
- What happens if low cost manufacturing countries form regional trade agreements and decide to promote trade and investments among themselves rather than supplying to the US?
- USA will have to depend increasingly on skilled human resources from emerging nations as most of the developed countries are already faced with the problem of aging population. Will this really lead to a changed economic order?

Source: Adapted from an article written by Sumitra Chowdhury[2].

Slowdown of the US economy is likely to have dampening effects on import demand of the US from the rest of the world and to that extent on the concerned economies from which the goods and services are imported. Assuming that other countries will not immediately follow the US down turn in their economic growth, US exports to these countries will either remain intact or might increase if the economies are able to achieve higher growth.

China has reportedly already started looking for alternative export markets for their products. Given China's level and efficiency in low cost manufacturing, it may not be a hard task for finding alternative market.US slowdown is likely to discourage foreign investors to invest in the US whereas it is likely to encourage US investors to increase their investments abroad.

During the past few years, the US owned assets in the foreign countries are declining and therefore the earnings from abroad are also declining whereas foreign owned assets in the United States are increasing resulting in higher liabilities. US has not been able to control its worsening current account deficit position despite realizing this as a major problem and IMF warning to the US to this effect.

V. Present Economic Situation in India

In India, the mood is upbeat with high growth of nearly 9 per cent due to strong investment, high capacity utilization, high productivity, buoyant corporate profits and high level of business confidence. Inflation is currently a concern due to rising international food and fuel prices, ample domestic liquidity, tight capacity utilizations, and rising skill premia (IMF). India has high export growth (over 20 per cent) and high import growth (mainly oil and related imports). According to the IMF, given India's vibrant growth outlook and sizeable capital demands, inflows will likely remain strong. However, low levels of external debt, ample reserves and limits on the amount and end-use of foreign debt financing; India's external position is sustainable and robust to significant shocks. In short, the positives are:

2. Views expressed are solely of the author. Sumitra Chowdhury was posted as an Indian Diplomat at the Embassy of India, Washington DC during the last 4 years. She is a Ph.D. in Economics, currently pursuing Master of Public Administration in Strayer University, Washington DC.

- a growth rate that will double the average income in a decade from now
- high growth in the manufacturing and services sector
- thriving private sector with no restriction on growth or expansion
- shift from a controlled base "licence-raj" economy to a market based economy
- buoyant tax revenues and better tax administration.

According to the Global Competitive Index, India scores remarkably high in capacity for innovation and sophistication of firm operations. This is especially true of the quality of scientific research and the number of scientists and engineers, which are increasingly supplying highly skilled professionals to the private sector. Indian enterprises tend to utilize sophisticated production processes and use numerous high-quality local suppliers, thus lowering input costs. Firm use of technology and rates of technology transfer are high, although penetration rates of the latest technologies are still quite low by international standards, reflecting India's still low levels of per capita income and high incidence of poverty. As income continues to rise and the fees associated with use of these products continue to fall, usage rates will rise, bringing about improvements in productivity. India has achieved high levels of productivity at 20 percent of the cost and is very cost-effective. In 2003, the average labour cost in India was USD 1.2 per hour of production worker well below most of the low cost countries' average at USD 2.10 per hour. A US based auto component manufacturer would increase its potential return on sales by 3 to 6 percentage points by shifting its manufacturing base to India. (Luthra, Mangaleswaran and Padhi, 2005).

India is one of the fastest growing economies today and has the potential to become a world leader in select industrial products and in services provided there is a clear recognition of what India has to offer and a desire to collaborate with India for mutual benefit. The large productive population and the swelling middle class will continue to increase aggregate demand for global products in the next decade. Doing business with India at the firm level can be pleasantly surprising as there is virtually no language barrier and the innovative mind-set of an Indian entrepreneur can be used to contextualize international best practices to suit the Indian/ Asian environment. India can offer tremendous diversity in terms of factors of production and large scale production to cater to other emerging markets is possible with India as a base.

A National Strategy for Manufacturing (NSM), prepared by the National Manufacturing Competitiveness Council (NMCC) seeks to ensure a 12 percent annual growth in manufacturing, primarily in textiles & garments, food & agro-processing, IT hardware & electronics, leather & footwear, skill development and small & medium enterprises including cluster development. Other areas that are likely to be taken up by the council in the coming months include biotechnology, fertilizers, cement, industry co-ordination and technology transfer issues.

BOX 3: India's Competitive Disadvantages and Recent Government Efforts to Offset them

	Disadvantage	Policy Measures
1.	**Macroeconomic stability**	It is important for a fast growing economy with structural deficiencies, like India, to address the global perception that it needs to improve macro economic stability through a judicious mix of monetary and fiscal policy Fiscal: Debt as per cent to GDP is high at 80per cent. The Government's commitment to enforce the Fiscal Responsibility and Budget Management Act (FRBM) which mandates limiting debt liability within prescribed limits is a step in the right direction. Fiscal sustainability is a major priority reflected in Terms of Reference of the 13th Finance Commission. Sub-national level fiscal reforms will also be focused on by the 13th Finance Commission Further simplification of tax laws /VAT/GST to benefit from increasing tax buoyancy and continued GDP growth is also on the cards. Monetary: Increasing Capital flows has resulted in increased liquidity in the money markets causing domestic inflation and appreciation of the rupee. The Reserve Bank of India has demonstrated capability to intervene where necessary. One solution is phased move towards capital account covertibility so that rupee exchange is market determined. Banking: Bank's Balance sheets are reasonably good. But most of the banking operations are by government owned banks. Increased emphasis on privatization of public sector banks through disinvestment may be called for. Poverty: It is a historical burden. And cannot be wished away in a hurry. Policy measures have been intensified to cover all vulnerable groups. Inclusive growth strategy is a top priority of the Government but corruption and leakages of funds are still rampant.
2.	**Quality of labour**	India has the advantage of a demographic dividend – unlike advanced countries like the USA, India has a large productive population which can contribute to the labour market for several years to come. Unfortunately, Indian labour is less productive due to less than optimum health and education/skill levels. The present Government is giving a maximum thrust to improving health and education in both rural and urban areas through a variety of schemes. Civil society and some corporates are also actively involved in this mission.
3.	**Labour Market Efficiency**	Indian Labour market is rigid particularly in the formal organized manufacturing sector, making management wary to hire labour. But the Service sector doesn't have similar rigidities. Most of the areas in which India has comparative advantage are in service sector. Government is introducing contract labour system to get over the problem in agriculture/food processing. Large number of workers are in informal sector, where there is expoitation in terms of overwork for little pay,occasional cases of Child labour,poor factory environment causing an adverse impact on safety and health of workers etc.This is an ethical and Human rights issue, which is being addressed but there is a long way forward. However all these rigidities are in line with ILO conventions, just that the workers' rights need to be enforced with refined/sophisticated skills, which is not the case now.
4.	**Infrastructure**	**The Government of India is continuously reviewing its policies to create an investor friendly environment** in sectors such as roads, ports and airports. Private sector participation in management, BOT projects, green-field airports, terminals and shipping berths and capacity augmentation has been initiated. The Government is considering a policy framework for setting investment regions covering areas between 100 to 250 sq. km, which could serve as world class manufacturing hubs in addition to developing Petroleum and Petrochemical Investment Regions over large areas in regions to be selected. Growth centres, clusters, Special Economic Zones, Industrial regions etc are being promoted to provide infrastructural and logistic support to industries. All physical infrastructural is thrown open to public private partnerships and institutions have been set up to provide long tenor finance, viability gap funding, venture capital funding, awareness and hand-holding of projects. Considerable progress has been noticed in National Highway projects, port projects, railway projects, civil aviation projects and urban transport projects.
5.	**Elephantine Bureaucracy**	The civil service has been severely criticized for delays. However the recent introduction of the Right to Information Act has increased transparency in decision making.
6.	**Inadequate Protection of Intellectual Property Rights**	The ineffectiveness of India's patent laws, the continuing lack of data exclusivity, and a lack of expedient and effective enforcement mechanisms are causing India to lose out when it comes to investment in R&D. India has however enacted the following Acts to make India TRIPS compliant. These acts are 1) Patent Act, 1970: Amended in 1999, 2002 and 2005 for making it TRIPS-compliant. 2) Trademark Act, 1999: Amendment in 1999 made the Act TRIPS-compliant 3) Geographical Indications (Registration and Protection) Act, 1999 4) The Designs Act, 2000: Industrial designs are now protected in India as per TRIPS standards 5) Copyright Act: Indian Copyright Act has been amended in 1999 to make it TRIPS-compliant 6) The Semiconductor Integrated Circuits Layout-Design Act has been enacted to protected integrated circuits 7) The Protection of Plant Varieties & Farmers' Rights Act, 2001 Effective enforcement requires adequate capacity building in the Patents Offices and adequate public awareness. The Government has recently launched a centrally sponsored scheme for the modernization of Institutions involved in enforcement.

Box 4: Labour Market in India – the hype and the reality

India's major competitive advantage viz., its demographic dividend is unlikely to be fully exploited unless the domestic labour policies become more market friendly. This should be accompanied by adequate welfare and compensation measures to prevent creation of sweatshops. A country, where cheap manual as well as highly skilled labour co-exists, can provide a range of options to consumers of all income ranges. There is a perception, however, that organized labour is holding the growth of the country to ransom by making unreasonable demands.

Employees in sick Public Sector Units, for example, usually stall the process of finding a strategic partner from the private sector. There are several cases where the monthly wage bill of closed PSUs runs into millions of rupees and where both land and machinery are locked-in for want of a firm decision on closure/disinvestment. The interests of the tax payer and the poorest of the poor get compromised as scarce funds are used to pay salaries of unproductive organized labour for long periods. Idle labour, even if they are paid wages, can be counter-productive to growth by spreading dissent and creating hurdles to efficiency drives by pro-active management. The private sector, on the other hand, resorts where possible to contractual labour to avoid paying compensation to permanent staff in case of downturns in business conditions. This weakens the legitimate rights of workers to be an integral part of the organization.

The 2005 budget document had stated that Indian labour market is characterized by a sharp dichotomy. A large number of establishments in the unorganized sector remain outside any regulation, while the organized sector has been regulated fairly stringently. It can be reasonably argued that the organized sector has provided too much of job-security for too long, while the unorganized sector has provided too little to too many. Labour being a subject in the concurrent list, state-level labour regulations are also an important determinant of industrial performance. Evidence suggests that States, which have enacted more pro-worker regulations, have lost out on industrial production in general. Perhaps there is a need for greater awareness among affected workers on available options and for focused re-training in these areas.

An Indian economist, Kaushik Basu, has expressed his concerns over a major fallacy of the Indian labour policy viz., considering labour reform as a zero sum game (organized labour will necessarily lose out) while in reality higher economic growth could benefit all labour segments. TCA Srinivasa Raghavan, another expert in the matter, on the other hand, says "Politically and on moral grounds, India has to have the sort of labour laws it does. But in practice, the labour market is far more flexible than popularly believed". He argues that it is a myth that labour conditions are rigid in India and that the bulk of the market is flexible.

Rigid labour laws in the country are not only affecting the domestic job market, but are raising costs of companies, mainly in the manufacturing sector. Steps are being initiated to arrive at a policy which will be acceptable to both manufacturers and workers. The Ministry of Labour and Employment has asked industry bodies such as CII, FICCI and Assocham to immediately submit the maximum compensation package that the employers would be willing to extend. However, by ignoring growth opportunities for the majority in order to protect organized labour India may lose out in the long run.

Source: Information compiled by the authors from various newspaper reports

A comparison of broad macro data of the two countries presented in table 10 indicate the following factors:

- Real GDP growth in India is three times that of USA. As more and more people in India benefit from this growth in terms of increased income, higher consumption of not only basic necessities but also comfort goods and luxuries will increase. There is considerable scope for American firms to partner with Indian firms to provide these goods and services to

Indian and other emerging markets.

- India has a much higher savings to GDP ratio compared to USA. Given the right opportunities these savings can be tapped for productive investment. Since India has liberalized the investment regime, Indian citizens will be willing to invest their savings in bankable projects in India as well as abroad.
- Investment as a proportion to GDP in India is also double that of the US. Since India is a fast growing economy with an almost insatiable need for both physical and social infrastructure, there is a lot of scope for productive investment in India.
- The BOP deficit as a percentage of GDP is far more pronounced in the case of USA than India.

Table 10: Selected Economic Indicators

	India					USA					
	2003/04	2004/05	2005/06	2006/07 Prov.	2007/08 Proj.	2000	2002	2003	2004	2005	2006
Growth (y/y percent change)											
Real GDP (at factor cost)	8.5	7.5	9	9.4	8.7	3.7	1.6	2.5	3.9	3.2	3.3
Saving and investment (percent of GDP)											
Gross saving*	30.4	31.2	32.6	34.1	36	18	14.2	13.3	13.2	12.9	13.9
Gross investment	28	31.5	33.8	35.3	37.3	20.8	18.4	18.4	19.3	19.7	20
Balance of payments											
(as percent of GDP)	2.3	-0.4	-1.1	-1.2	-1.4	-4.3	-4.4	-4.8	-5.5	-6.1	-6.1
*Differ from official data due to revisions in the current account											

*Differ from official data due to revisions in the current account

http://www.imf.org/external/np/sec/pn/2008/pn0809.htm

http://www.imf.org/external/np/sec/pn/2007/pn0792.htm

VI. Synergies and Way Forward

The U.S.-India Business Council (USIBC) has released the 2008 USIBC Business Perception Survey. The survey, designed by Ernst & Young and administered by USIBC, polled senior company executives to gauge their perception of India as a destination for investment and to identify progressive steps which will further enhance investor interest and confidence in India. Their overwhelming assessment: India is, and will continue to be, a premier destination for investment.

Traditionally the areas of partnership between USA and India were in the areas of textiles, gems and jewellery, auto ancilliaries, paints, pharmaceuticals, agro-chemicals. Since synergies are well established in these sectors, this paper focuses on emerging areas for building strategic alliances based on comparative strength of the two countries.

Emerging Areas

1. Intelligent Textiles

Intelligent textiles and smart clothing refer to creation of fabric and clothes which can perform several functions such as change in colour to indicate that a patient's blood pressure or heart beat has slowed, change in temperature according to the environment, massage the body of the wearer from time to time, and cater to several such functions by the innovative fusion of IT and textiles – both of which India has a strong comparative advantage in. US firms could provide the R&D and technological know-how and source such products from India at high commercial value and low risk.

2. Value-added Engineering Services

This is a logical outcome from the progression over the past ten or more years of IT outsourcing development in India. This trend is also reinforced by the fact that world-class firms are now much more comfortable outsourcing their critical processes to Indian firms and the level of professionalism and client service in India has improved to match these expectations. Contrary to general perception, India's economic advancement does not rest on call centers and software development alone. MNCs are looking towards India as a potential source of quality products, for example, John Deere and LG Electronics have recently built factories turning out tractors and color television sets for sale in India and for export to the United States, the Essar Group is making steel to be used for ventilation shafts in Philadelphia, high-rise structural beams in Chicago and car engine mountings in Detroit (New York Times, 1 Sep. 06). The low-cost programming and engineering skills of Indian workers have generated savings of up to 85 percent when companies purchase secondhand capital equipment and refurbish it in house.

Indian companies are using design to cut costs in product engineering. A redesign of the Maruti Alto's steering system reduced its weight by 15 percent. Indian engineers are very sharp and quick in designing, which helps reduce development costs and lead times. Indian engineer take only six months to design a steering system for an automaker that had been trying for more than four years to develop a similar system by engineers in other low-cost countries. Many automakers are now creating engineering and design centers in India to leverage on these skills. In a survey of 400 Indian suppliers of auto parts conducted by McKinsey, it was found that 80 percent have ISO 9000 certification—the international standard for quality management. One leading Japanese automaker that moved its equipment design and purchasing to India found that its costs were 20 percent lower in India than in other developing countries(Luthra,S., Mangaleswaran,R., and Padhi,A. , 2005).

3. Information Technology

New opportunities in the Indian IT industry are emerging in embedded software development (use of "smart" devices in internet applications), Broadband Networking Solutions, Multimedia Content Management (TV platforms, set-top boxes, data mining), Bio-informatics (automated genome analysis, modeling of protein structures from primary sequences, creation of relational databases from unstructured pharmaceutical and clinical data), Health Insurance Probability and Accountability (to streamline US health care industry). Advanced IT products and solutions such as replenishment planning, analytics, RFID (radio-frequency-identification), and warehouse management systems require synergistic partnerships with advanced countries like USA.

4. Telecommunications

India's 32.4 million line basic telephone network (and 3.6 million cellular mobile network) is the 8th largest in the world and third largest among the emerging economies (after China and Korea). It is growing annually at 22 per cent for basic services and over 100 per cent for cellular and internet services. Amongst major US companies that have entered the Indian market are AT&T and Qualcomm. The steps taken by the Government of India in providing a boost to foreign investment in India include increase in foreign ownership limit, reduction of regulatory charges, moving to unified licensing and spectrum policy, bringing about comprehensive broad band policy and revamping of national telecom policy. India's Telecommunication sector, already a major recipient of US investment, is expected to continue to provide substantial opportunities to US investors.

5. IT Enabled Services/outsourcing

Many US companies have already started reaping the advantages offered by India's IT sector, such as a large pool of trained, English speaking personnel, offering huge cost benefits and a 12 hour time difference with USA and other major markets that enables India to offer virtually round the clock, year round (24 x 365) services. US companies taking advantage of the opportunities offered by India's IT Sector include American Express, Citicorp and Microsoft. New companies that have set-up operations include Dell, Hewlett-Packard, HSBC, Standard Chartered and Convergys. Other Fortune 500 companies such as Morgan Stanley, AT&T, Reebok, GM, Fujitsu, Boeing, Pepsi, Swissair, Coca-Cola and British Airways have identified India as their outsourcing partner. Many more corporations across the globe are following suit.

6. Internet Telephony

Deregulation of the national long distance and international long distance services in India in April 2002 provides an opportunity for service providers to enter the high-growth long distance market using Voice-over-Internet-Phone. US companies are actively seeking market share, including Net2Phone.

7. Biotechnology

In India, biotechnology industry is gaining momentum as it is poised to leverage its scientific skills and technical expertise to make a global impact from strong innovation led platform. There are over 800 companies in India operating in various sectors of the bio-technology industry. A substantial portion of the Indian bio-tech industry would be focusing on research and technical services. There exists an exciting opportunity for biotech companies in the US in forward integration linkage of their drug development programs at a lower cost and shorter time lines in India, which would provide them a lower cost validation option over trials conducted in the more expensive research environment in US. Over 50 R&D labs are in place with over twenty of them conducting research in frontier areas of bio-technology. Several research laboratories are working on genome sequencing and genomics, pharmacogenomics, gene annotation and proteomics.

8. Bio-informatics (BI)

Bioinformatics means the application of information sciences to biology. It deals with creation and maintenance of extensive electronic databases on various biological systems. It involves extensive application of information technology for collating, organizing and analyzing large amounts of data pertaining to genomics, proteomics, drug screening and medical chemistry The value of the global bioinformatics market is estimated at $1–$3 billion .The global bioinformatics market is expected to grow at a CAGR of 16 per cent over 2007-2010(Business Standard, 7 Feb. 2008). India's strong hold over pharmaceutical research and IT services and well-educated low-cost English-speaking human capital are attracting off-shore bioinformatics services to the country. India is expected to lead in Bioinformatics over the next decade. India's attractiveness are its enormous potential in leveraging its well established core competencies in the IT area, its large resource pool of molecular biologists, statisticians and software engineers, that are expected to enable it to garner a large share of this market.

9. Insurance

The insurance sector has been recently opened up for upto 26 per cent FDI. Untapped potential is huge. US companies that have successfully entered this field in India include New York Life, AIG and Chubb.

10. Consultancy Services – Reverse Brain Drain

Scientific research between the two countries in different fields is another area of great opportunity. Given the vast number of skilled manpower that is available in India and the tremendous cost advantage offered by Indian companies and laboratories, more and more research work will be outsourced to India.

11. Retail Business/ Logistic Providers

The current retail boom in India can only sustain its momentum if supply chain management is given top priority by retail players. Industry sources say that supply chains need to be realigned into efficient, agile and adaptable networks that can handle larger volumes, expand reach, balance costs and address the demographic variations while providing scalability. The most significant challenge in developing a smooth supply network is the lack of adequate infrastructure particularly the road infrastructure, reliable power supply, insufficient investments in alternate modes of transport (marine, railways, air transport), a well-connected cold chain and warehousing infrastructure. All this requires huge investment and technical know-how which US firms can supply as part of their business plan. Forming a consortium with an Indian partner can reduce local, regional and national regulations which pose major hurdles for retailers in obtaining permissions to establish supply chain infrastructure.

12. Technological Collaboration

During recent consultations with Federation of Indian Commerce and Industry (FICCI) and the Confederation of Indian Industry (CII), representatives from the US Department of Energy stated that the areas in which good technological collaborations can be worked out are: clean coal technology, carbon sequestration, combined heat and power system, wind and solar energy, energy efficiency technologies, and in the development of hydrogen as fuel.

13. Entertainment Business

Media and Entertainment is an important area of synergy between USA and India. The time is right now to tap the huge potential in this growing segment and facilitate collaborations and joint working among the players in India and the US in the segment.

14. Small and Medium Enterprises

An area that has huge potential and that has not been properly tapped is the synergy development between SMEs in India and USA. SMEs in the US are under severe pressure to increase profitability and business margins. This will force them to outsource and even have M&A arrangements with Indian firms. India is going to be a great beneficiary of this trend. This will substantially offset or minimise the impact of the US recession on Indian industry," said Adam Larkey, partner at Wolet Capital Corporation, a New York-based investment banking firm. A strategic alliance memorandum (SAM) signed by the US Small Business Administration (SBA) and the US-India Business Alliance (USIBA) will allow them to share resources to help start, maintain, and expand small businesses, particularly through trade with India (ET, April 19, 2008).

15. Banking

FDI in banking is permitted up to 49 per cent. Success stories in this sector include Citicorp, GE Capital, and American Express already abound.

16. Aviation

Boeing alone sold $11 billion worth of aircraft last year to India, one of the world's fastest-growing aviation markets. One of USA's top helicopter manufacturers, Bell helicopters, is seeking

to co-produce its high altitude light and attack helicopter in India. The American side told its Indian counterparts at the FICCI meeting that the USA was taking major steps to make licence approval quicker since the long process had seen American companies lose out to their competitors. The recent military-to-military cooperation, including joint exercises, had helped in this.

17. Power Sector

Considering the entry of private sector participation in generation, distribution and transmission in power sector through further liberalization process, India's energy sector has been an important destination for US investment. Taking into account the vast present and projected demand supply gap, there is tremendous potential for economic cooperation between the two countries in this area. Pharmaceuticals, biotechnology and chemical industries also provide great opportunities for closer cooperation.

18. Health Tourism

There are a number of significant business opportunities in the Indian healthcare industry including health insurance, medical tourism, hospital management, curative and preventive services, healthcare infrastructure and human capital investments. By 2012, this industry is projected to grow to US$60 billion and contribute 8.5 per cent of GDP. Medical tourism, for example, already attracts 150,000 patients per year and is growing at around 20 per cent p.a. This sector alone is expected to become a $2 billion industry by 2010(ISB Insights, 2007). Another example is BPO services in healthcare, which is expected to become a $5 billion industry by 2010. The Indian government has identified healthcare as an important thrust area, and is committed to improving quality, efficiency and delivery in the industry. (India Brand Equity Foundation, 2004)

Box 3: Synergies in Pharmaceutical Industry

Indian Pharmaceutical companies have made tremendous progress in the US Market. Indian companies are exploiting their cost advantages and reverse engineering, and the largest number of USFDA approved plants outside the United States. Indian companies can manufacture pharmaceuticals for less than half of what cost them in United States, conduct clinical trials for approximately one-tenth the US cost, and conduct R&D for less than one-eighth the US cost. India has more than 75 pharmaceuticals plants approved by the USFDA (Smith, 2007). US Drugs Pravachol, Zoloft, Zocor, Plavix and Flonase lost their patent protection in 2006, so Indian companies were very aggressive in 2006(Pharmaceutical Technology, 2006) in filing Abbreviated New Drug Applications (ANDAs) from 2004 to 2006.

As 30 of the best selling US patent –protected drugs go off patent by 2010, Indian companies are positioning themselves to offer generic version of these drugs.

India's comparative advantages lies in its cost competitiveness and its reverse engineering experience, due to which it can operate at much lower profit margins. India produces some drugs at very low rates because

Labor costs in India are 50 to 55 per cent lower than in the west.

Infrastructure costs are 40 per cent lower.

Fixed cost are estimated to be 12 per cent to 20 per cent less than in United States

Bulk Drugs can be produced at 60 per cent lower cost.

A production facility can be started at 40 per cent lower cost (Kumar 2004).

India has become a hub for pharmaceutical research and development and clinical trials for many leading foreign pharmaceutical companies. Since100 per cent FDI is allowed in pharmaceutical industry, this industry has good scope for synergies with US firms.

19. Specialty Chemicals

Given India's capabilities in chemistry, engineering, and cost reduction, India has comparative cost advantage and strength to become one of the developing world's top two exporters (along with China) of specialty chemicals Many Indian companies are creating cost advantages by applying innovative practices, mainly in process and capital engineering . Through novel research and development practices in plant design, an Indian producer of performance chemicals reduced its changeover time for one product to two to three days, from the typical international standard of eight to nine, giving it lower inventory costs and greater flexibility. The producer also gained a cost advantage of 30 to 40 percent by producing significant quantities of all its raw materials. A range of opportunities exists for US –India firm to firm linkages. US Firms may establish arm's-length sourcing relationships with emerging Indian producers in commodity-grade fine chemicals. Possibilities of alliances with Indian firms exist in complex fine chemicals, standard performance chemicals, and intermediates for customized performance chemicals, in which greater control over technology or manufacturing is required. Figure 6A and 6B displays India's advantage in reducing total cost of production for intermediate chemicals i.e. compound synthesized not for direct use but to produce other useful compounds.

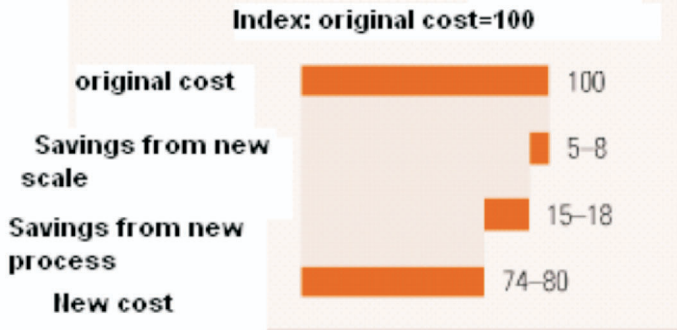
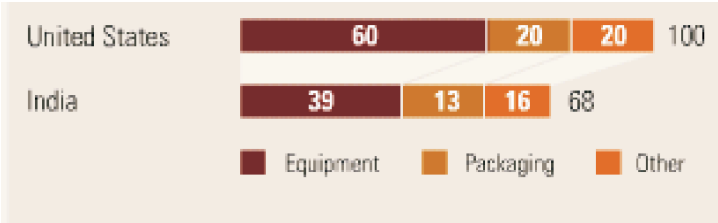


Figure 6 A: India's advantage in reducing cost of intermediate chemical through process engineering.
(Source: Adapted from Luthra,S., Mangaleswaran,R., and Padhi,A. (2005))



Index: Cost in United States =100

Figure 6 B : India's advantage in reducing cost of intermediate chemical through capital engineering.
(Source: Adapted from Luthra,S., Mangaleswaran,R., and Padhi,A. (2005))

20. Electrical and Electronics Products

Mckinsay, in a survey of Fortune 100 companies, found that many of these companies source and manufacture electrical and electronic products in India. They revealed that their Indian operations are at par or better then global cost and productivity benchmarks. Many products

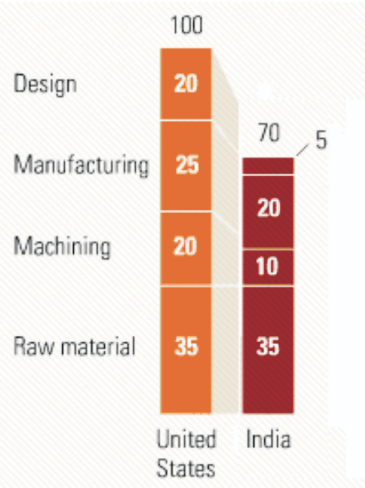


Figure 7: Comparative cost advantage of producing mechanical control valve
(Source: Adapted from Luthra,S., Mangaleswaran,R., and Padhi,A. (2005))

like mechanical control valves may be now 30 to 40 percent cheaper to produce in India than in the United States. Figure 7 shows the comparative cost advantage of producing mechanical control valve a key actuator in industrial system (Luthra,S., Mangaleswaran,R., and Padhi,A. , 2005).

VII. Conclusion

In this paper, an attempt has been made to objectively analyze the comparative strengths and weaknesses of India and USA in global business and to identify emerging sectors where profitable partnerships can be formed in the future. Both these countries have a significant impact on the global scene by virtue of their size and reach and their different skill sets can enable co-creation of more value when they work in partnership with each other. A better understanding at the people level in these two countries could set right several apprehensions and open windows to sustainable wealth creating joint ventures. At the policy level, both countries would benefit from a greater acceptance of each other's differences, considering that the basic values of democracy and the right to human freedom and entitlement is a common value to both countries.

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Annexure A

TOP Indian Companies - Emerging Global challengers

India is second in the list of global challengers as 21 Indian companies feature among the top 100 emerging global challengers from the rapidly developing economies (RDEs).

- Bharat forge is the world's second largest forging company. Bharat Forge, for example, engineers a new product in 3-4 weeks, compared to 6-12 weeks that its competitors might take.
- Tata Consultancy, Wipro, Infosys, Larsen and Toubro, VSNL, TVS Motors, Tata Tea, Ranbaxy, Dr. Reddy's Laboratories and ONGC are among the Indian companies pursuing global leadership strategies.
- Hindalco continues to be Asia's largest producer of finished aluminum. Hero Honda is the largest manufacturer of motor cycles in the world.
- Mahendra & Mahendra ranks amongst the world's three largest tractor manufacturers and TISCO is the world's cheapest producer of steel.
- Ranbaxy (India) is among the top 10 generic companies in the world.
- Wipro (India) is the world's largest third party engineering services company

Source: http://indousbusiness.com/index.php?option=com_content&task=view&id=18&Itemid=28

Annexure B

Some Crucial Acquisitions made by Indian Companies

Indian Multinational Giants	Acquired Companies
Amtek Auto	Zelter GmbH, Germany, GWK Group, UK, Lloyds (Brierly Hill), UK, Midwest Mfg. Co., USA
Asian Paints	Delmege Forsyth (Sri Lanka), Pacific Pants (Australia), Berger International, SCIB Chemical (Egypt), Taubmans Paints (Figi)
Aurobindo Pharma	Milpharm, UK
Bharat Forge	CDP Aluminiumtechnik, Germany, Federal Forge, USA, Imatra Forging Group, Sweden and Scotland
Dr Reddy's	Roche's API business in Mexico, Betapharm Group, Germany, Trigeneis, USA
Glenmark Pharma	Laboratorios Klinger, Brazil, Servycal S.A. Argentina and Bouwer Bartlett, South Africa
Indian Hotels	Hotels in Zambia and Australia
Jubilant Organosys	Trinity Labs
M&M	Target Research Associates
Marico	Sundari LLC, USA
Motherson Sumi	Reiner Prazision GmbH and G+S Kunststofftechnik GmbH in Germany
Nicholas Piramal	Rhodia's IA in UK and India, Avecia, UK
Satyam Computer	Citisoft, UK
Sterlite Industries	Monte Cello Corporation, Netherlands, the holding company of copper mines in Australia
Sundram Fasteners	Dana Spicer, UK, Peiner Umformtechnik GmbH, Germany
Sun Pharma	Able Labs, USA,Caraco, USA, Valent Pharma
Tata Motors	Daewoo Commercial Vechicles, Korea, Hispano Carrocera, Spain
Tata Steel	NatSteel Asia, Corus Steel, UK
Hindalco	Novalis, Canada
Tata Tea	Tetley, Good Earch, jEM_A, Glaceau
TCS	Comicrom, Chile, GNS, Australia
United Phosphorus	MTM Agrochem, UK, Agrodan, Denmark, Midland Fumigants, Europe, Cequisa, Spain, Shaw Wallace Agrochem, India, Advanta (seed business), Netherlands
VSNL	Teleglobe International Holdings, Tyco Global Network
Wipro	Spectramind, GE's healthcare software arm, global Energy practice of American Management Systems, Nervewire, US, Ericsson's Indian R&D arm
Zydus Cadila	R&D facility in Atlanta

Annexure C
Major US Players in India

India has proved to be an attractive partner and destination for US investment. some success stories pertaining to US trade and investment in India are given below in a chronological order :

General Electric

GE has been in India since 1902, when it installed India's first hydroelectric power plant. Today, all 11 of GE's global businesses have a presence in India – from aircraft engines and power generation to consumer and commercial financing, medical imaging, television programming and plastics, plus joint ventures with Wipro, State Bank of India, Maruti, and HDFC. GE revenues and orders in India exceeded $1 billion in 2003, and employment, including Gecis, is more than 22,000. In 2000, GE opened the John F. Welch Technology Centre in Bangalore. The 545,000 sq. ft. laboratory employs more than 2,200 scientists, researchers, and engineers who work daily to develop technology innovations for GE businesses. The multi-discipline laboratory covers research in hot-air gas paths, materials, design and computer science.

Proctor and Gamble (India)

Proctor & Gamble is the second largest FMCG company in India. Procter & Gamble's relationship with India dates back to when Vicks Product Inc. India, a branch of Vicks Product Inc. USA established in 1951, was engaged in the manufacture (under loan license) and sale of what is today India's Number One Health Care brand - the famous range of VICKS products.

Texas Instruments

Texas Instruments India Private Limited (TI India) commenced operations in Bangalore in 1985, becoming the first multinational to set up an R&D facility in India. TI India started with the development and support of proprietary Electronic Design Automation (EDA) software systems used for Integrated Circuit (IC) design by TI's semiconductor design centers worldwide. TI India has come a long way and now drives several innovative technologies from India.In July of 2006, TI expanded the local presence in India by announcing the second R&D center in Chennai. TI added resources in India, to address growing markets and support its customers. Texas Instruments Incorporated (TI) has signed on April1, 2008 a collaborative agreement with the School of Medical Science and Technology (SMST), Indian Institute of Technology (IIT) Kharagpur, to develop semiconductor technologies that will help improve the quality, comfort and accessibility of health care.

Sun Microsystems

Sun Microsystems India Pvt. Ltd. is a subsidiary of the US$ 11.4 billion Sun Microsystems Inc and has had a presence in India since 1987 through a distributor arrangement. It established a direct presence for the first time in 1995 with a liaison office. A wholly-owned subsidiary was finally established on July 1, 1998. Sun has been rated number one in India in UNIX ® systems revenue and unit market share (IDC), Sun has been growing at twice the industry average for the last 3 years. Spread over 100 locations across India, Sun India and its partners are a 400-strong team that supports an installed base of more than 200,000 systems. In the last six years, Sun has invested about US$ 120 million and plans to continue investing in the future.

Oracle Corporation

Oracle entered India in 1987 through its distribution tie-up with TCS and established Indian subsidiary in late 1993 and set up an India Development Centre in 1994. Today, Oracle has two India Development Centres as well as Indian hubs for Oracle's global support, consulting and financial services operations. Through its extensive network of more than 400 channel and alliance partners under the Oracle PartnerNetwork, Oracle India markets the complete range of Oracle products and services across India. Oracle India has more than 6,700 customers in the telecommunications, banking, insurance, manufacturing, life sciences and utilities industries, across the government and private sector. Oracle India is a major partner for E-Governance initiatives of Central and State Government bodies in India. The Oracle-HP E-Governance Centre of Excellence, Oracle Asia R & D Centre and Partner Solution Center are located at Oracle India's head office in Gurgaon, near New Delhi. Oracle's Retail Centre of Excellence is located in Bangalore.

Intel

Intel India was established in 1988 in Bangalore. Today, Intel India is the only Intel subsidiary to have most Intel divisions outside the United States.. Intel's India operations includes the Intel India Design Centre which was set up in 1999.This is Intel's largest non-manufacturing site internationally and is involved in developing software and designing chip sets and microprocessors. Intel also has a sizable sales and marketing organisation located in Bangalore. In 2003, Intel had a market share of about 90 per cent in the Indian computer chip market - over 3 million units annually. Intel's Chairman, Mr Craig Barrett, has announced 0n December 06, 2005 an investment of over $1 billion in India in the next five years on activities that include expansion of research and development operations in Bangalore, marketing, education initiatives, and a $250-million venture capital fund to invest in technology companies. In India, Intel has over 2,000 employees.

Agilent Technologies Inc.

Agilent entered in India since 1989, as a sales entity within Hewlett-Packard Company. In 2001, Agilent Technologies India Pvt. Ltd established as an IT-enabled, captive services organization in India, based in Gurgaon to support global business operations. Agilent supplies test and measurement solutions including for applications in the wireless communications industry, and was ranked the number one Test and Measurement (T&M) Vendor of 2001 in India. Today, Agilent has approximately 1600 professionals across seven key cities in India engaged in a wide range of high value-added activities that include research and development, engineering and IT services, global business support and financial services.In addition, Agilent is currently setting up its first campus in India. Expected to open in about a year, the facility is being designed to host a number of state of the art facilities that would include a world class technology infrastructure. It will spread over 10 acres near Manesar in Haryana and will have two hundred thousand square feet in the initial phase, making it one of the largest Agilent campuses in the world.

Pepsi

PepsiCo entered India in 1989 and has grown to become the country's largest selling food and beverage companies. One of the largest multinational investors in the country, PepsiCo has established a business which aims to serve the long term dynamic needs of consumers in India. The group has built an expansive beverage, snack food and exports

business and to support the operations are the group's 38 bottling plants in India, of which 15 are company owned and 22 are franchisee owned. In addition to this, PepsiCo's Frito Lay snack division has 3 state of the art plants. PepsiCo India and its partners have invested more than U.S.$700 million since the company was established in the country in 1989. In India, PepsiCo provides direct employment to 4,000 people and indirect employment to 60,000 people including suppliers and distributors.

Microsoft

Microsoft entered India in 1990 and has since worked closely with the Indian government, IT industry, academia and local developer community for progressing in some of the early successes in the realm of IT Microsoft currently employs over 5000 plus people across its six business units. the Microsoft India Development Center in Hyderabad(MSIDC) is Microsoft's largest product development center outside the headquarters in Redmond, is recognized as an industry leader with teams working on the frontiers of innovation and incubating technologies and products which impact millions of Microsoft customers worldwide.

IBM Corporation

IBM started its National Capital Region (NCR) operations in 1992, Since inception, IBM in India has expanded its operations considerably with regional headquarters in Bangalore and offices in 14 cities and currently has a strong global delivery and domestic business in the region. In 2007, IBM announced its focus on the small and medium business market in Uttar Pradesh. IBM India has set up the complete range of IBM's services capabilities including consulting and systems integration, infrastructure, applications and business process transformation and management in India. Today, the company has established itself as one of the leaders in the Indian Information Technology (IT) Industry. IBM announced on July 5,2006 it will be investing $6 billion in India over the next three years.

Ford (India)

Established in 1995, Ford India is a wholly owned subsidiary of Ford Motor Company, a global automotive industry leader. Ford India manufactures and distributes automobiles made at its modern integrated manufacturing facility, at Maraimalai Nagar, near Chennai. With over 1900 employees, the company's models include the Ikon, Fusion, Endeavour and the Fiesta.Ford India has invested about Rs 1,700 crore in its its state-of-the-art integrated manufacturing Maraimalai Nagar plant, near Chennai and is now exporting its popular "Ikon" model to South Africa and Mexico.

Whirlpool

Whirlpool Corporation is one of the world's leading manufacturers and marketer of major home appliances, with annual sales of over US$ 12.3 billion, 68,000 employees, 50 manufacturing and technology research centres around the globe. Whirlpool of India Limited (WIL) is an 82.3 per cent subsidiary of Whirlpool Corporation, US, one of the leading global consumer durable players. Whirlpool is among India's leading home appliances companies. It manufactures and market refrigerators, washing machines, air conditioners and microwave ovens. Set up in 1995, Whirlpool India has 2,500 employees, network of 2,500 strong, an extensive sales and distribution network, a robust manufacturing and R&D infrastructure. WIL has made substantial investments in India so far. The company owns three state-of-the-art manufacturing facilities at Faridabad, Pondicherry and Pune..

In the year ending in March '06, the annual turnover of the company for its Indian enterprise was Rs.1,375 Crores. According to IMRB surveys Whirlpool enjoys the status of the single largest refrigerator and second largest washing machine brand in India.

EDS

EDS set up a liaison office in India in 1995. In 1996, EDS India was formed as a wholly owned subsidiary. The subsidiary became the first company in India to sign a multiyear global outsourcing contract. Early emergence in the region put EDS India at the forefront of the offshore trend, developing many of EDS' current best practices in work migration and knowledge transfer. EDS opened its customer interaction center in Mumbai in April 2003 and the Pune office in August 2004. With facilities at DBS Westminster, Steeple Reach and Tidel Park in Chennai, and in Gurgaon, Haryana, EDS delivers a broad portfolio of information technology and business process outsourcing services to clients in the manufacturing, financial services, healthcare, communications, energy, transportation, and consumer and retail industries and to governments around the world. In mid-2006, EDS acquired a majority stake in MphasiS BFL Limited, a leading applications and business process outsourcing (BPO) services company based in Bangalore, India.

Owens Corning India

Owens Corning (India) Ltd OCIL is a joint venture between Owens Corning and Indian company Mahindra & Mahindra. Owens Corning (India) Ltd OCIL is a joint venture between Owens Corning and Indian company Mahindra & Mahindra. Owens Corning produces glass fibre at a plant in Taloja, Mumbai Owens Corning currently has around 400 employees in India Its glass fiber manufacturing plant has developed in a short span into the largest exporter in Maharashtra, with annual foreign exchange earnings of over $50 million. It employs 400 graduates, and is Owens Corning's most successful venture in Asia.

Tecumseh Products (India) Limited

Tecumseh India is a fully owned subsidiary of Tecumseh Products Company(USA), the Indian operations came through the acquisition of manufacturing plants of Sriram Refrigeration in Hyderabad and Whirlpool in Ballabgarh in 1997. Presently, the Indian subsidiary accounts for 12 per cent of the company's global sales of $1.3 billion. TECUMSEH Products India, part of the $2-billion US major, In February 2008, it has expanded its manufacturing facility by setting up a rotary compressors plant in Hyderabad for an investment of Rs 100 crore. The company already has commissioned its 7,50,000 rotary compressor unit capacity at its manufacturing base at Balangar, making it the first company to achieve this figure in the country in the year 2005. Its other plant in India is in Ballabgarh (Haryana). Employs 2,500 workers in Haryana and Andhra Pradesh, and operates the only air-conditioning compressor manufacturing plant in India. In India, the company has partnerships with brands such as LG, Whirlpool, Voltas, and Blue Star. Tecumseh India exports about 65 per cent of its solutions to markets such as West Asia, South Africa, Turkey and China.

Adobe Systems Inc.

ADOBE Systems India, a fully-owned subsidiary of Adobe Systems Inc, a network publishing solutions provider established its India operations in January 1998 and the Indian operation of the company are responsible for development of key products like PageMaker and the Acrobat Readers used in mobile devices. The company's state-of-

the-art facility at Noida, near New Delhi. The India operations form 12 per cent of Adobe's global employee strength and 25 per cent of the global engineering strength. Adobe has almost more than 45 software patents from India and another 15 are in the pipeline. The current employee strength of Adobe India stands more than 1,000. Its R&D presence includes campuses in Noida and Bangalore. It began with $3 million investments in R&D in 1997, and announced on September 16, 2006 an investment close to $200 million in India in the next five years.

3M

3M is a diversified technology company with a worldwide presence spanning Consumer & Office, Display & Graphics; Electro & Communications, Healthcare, Industrial & Transportation, and Safety, Security & Protection services. 3M India (formerly Birla 3M), part of the $16-billion US-based Minnesota Mining and Manufacturing Company (3M), 3M products range from advanced industrial use to daily domestic use and globally has the largest number of product patents (569 in 2007) under its belt. In India it has turnover of Rs 5103 Million in 2006 with profits of Rs 504.2 Million, over 1000 employees, plants in Bangalore, Ahmedabad, Pondicherry and Pune, Head office at Bangalore and approximately 2500 innovative products marketed in India The key focus for 3M-CUNO healthcare is in pharmaceutical, biologicals and bioprocessing markets

Hertz

Hertz, a wholly owned subsidiary of Ford Motor Company, has appointed Carzonrent (India) to represent its brand in India in 2001.The Hertz range of car rental services is available in Delhi, Mumbai, Pune and Bangalore, and then gradually expand to Hyderabad, Chennai, Ahmedabad and Baroda. Presently it has its presence in 32 cities. The company is focusing on expanding its product portfolio in India by aggressively promoting newer products, besides expanding to more cities. Hertz views the potential for the car rental business in India as immense.

Wal-Mart

Wal-Mart Global began its activities in India in 2001 with the opening of a sourcing liaison office in Bangalore, and by 2006 it has grown to a full subsidiary with more than 120 associates. Wal-mart's office in Bangalore serves as its global procurement hub for the sourcing of merchandise from India, Nepal and Sri Lanka.

The world"s largest retailer Wal-Mart Stores Inc and Sunil Mittal"s Bharti Enterprises on 6 August, 2007 announced the entry of Wal-Mart in India with the signing of their equal joint venture agreement rolling out wholesale cash-and-carry operations in the country. The tie up is scheduled to open its first store in north India by the end of 2008. The joint venture with Bharti is expected to open between 10 and 15 wholesale cash-and-carry facilities, and will employ an estimated 5,000 people over the coming seven years. Each facility would cover around 50,000 to 100,000 square feet area, and would market a range of groceries, footwear, produce, clothing and consumer durables to retailers, manufacturers, and farmers.

Source: Compiled by authors from leading newspapers, business magazines and websites of companies