

2013

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Original Published Citation

Javalgi, R. G., Joseph, W. B., Granot, E., Gross, A. C. (2013). Strategies for Sustaining the Edge in Offshore Outsourcing of Services: The Case of India. Journal of Business & Industrial Marketing, 28 (6), pp. 475–486.

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Strategies for sustaining the edge in offshore outsourcing of services: the case of India

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Abstract

Purpose – Offshore outsourcing offers competitive advantages when goods and services are produced economically and with acceptable or superior quality by suppliers located outside a firm's home country. The purpose of this paper is to focus on India as a destination for offshore outsourcing of services and the challenges it faces in maintaining its leadership in this area. The paper discusses the growth of services outsourcing and the economic and environmental forces that have contributed to the outsourcing of high-end services, also known as knowledge process outsourcing (KPO).

Design/methodology/approach – This article surveys the literature of offshore outsourcing and identifies strategic drivers and options that can help India to grow and consolidate its position as an exporter of services and build long-term competitive advantages in its relationships with global partners. To understand why nations gain competitive advantage in certain industries, Porter's "diamond" model is utilized as a broad framework for examining policies and national strategies that can sustain India's competitive advantage in outsourcing of knowledge-based services. The paper discusses India's current and prospective assets and liabilities that correspond to the model's four components.

Findings – The article discusses India's competitive edge as a leading supplier of knowledge-based services and proposes a model for sustaining this edge. The model proposes key policy steps to move from the current position (e.g. supplier of business process outsourcing services) to a role of knowledge leader by providing advanced value added services to global clients. This model suggests ways in which a supplier nation can gain leverage in the value chain.

Research limitations/implications – The article is conceptual, not empirical. Public and corporate policy implications are presented to strengthen India's competitive advantages in outsourced services.

Practical implications – The article presents a strategic roadmap with policy implications that can help move India up the value chain from being primarily a destination for low-end business process outsourcing (BPO) to that of a co-equal, high value-adding partner or principal who offers knowledge leadership in the design and delivery of services for global markets.

Originality/value – The article discusses a nation's technical strengths, as well as cultural and infrastructure weaknesses, that can contribute to volatility as a global outsourcing leader. The article also presents strategies that can reduce a nation's vulnerabilities to competitive actions.

Keywords Outsourcing, Competitive advantage, Knowledge process outsourcing, Business process outsourcing, India, Services outsourcing, Offshoring

Paper type Conceptual paper

Over the past three decades, the outsourcing of business operations has spread like a pandemic with corporations looking far beyond their national political borders to source manufactured goods and services that could give them a competitive advantage. Globalizing on this large scale began with the dismantling of US trade barriers with China in the 1970s and the shift of manufacturing operations from high-cost locations in the US and Europe to emerging economies in China, Mexico, Southeast Asia, Brazil, and Central Europe (Javalgi and Martin, 2007).

The 1990s marked the growth of services being outsourced to nations such as Ireland, Russia, Philippines, and India (Javalgi *et al.*, 2009; Cavusgil *et al.*, 2008). This type of global activity, known as offshore outsourcing, has become a vital and necessary component of a firm's business value chain. Outsourcing offers significant competitive advantages when goods and services are produced economically and with

acceptable or superior quality by outside suppliers (see Kotabe *et al.*, 2008; Bunyaratavej *et al.*, 2011).

A recent Duke University study on offshoring (Lewin *et al.*, 2009) reports that, from 2001-2009, US firms preferring captive offshore suppliers for high technology and telecom services dropped from 52 percent (2001-2003) to 27 percent for 2007-2009, whereas preference for offshore outsourcing to independent suppliers grew from 6 to 45 percent (p. 5). Offshore outsourcing offers competitive advantages when goods and services are produced economically and with acceptable or superior quality by suppliers located outside a firm's home country. Creating value through outsourcing has emerged as an important strategy for firms the services sector in the knowledge based global economy. In spite of the growing significance of outsourcing, we have limited knowledge of offshoring and outsourcing to emerging markets that are moving up from providing low-end services to high-end services (Javalgi *et al.*, 2009).

This article examines and identifies strategic drivers and options that a major outsourcing supplier nation, such as India, might consider in order to build a sustainable advantage in consolidating its position as an exporter of services and its relationships with global partners. More specifically, this article discusses the India's competitive edge as a leading supplier of knowledge-based services and

proposes a model for sustaining this edge. The model proposes key strategic steps to move from the current position (e.g. supplier of business process outsourcing services) to a role of knowledge leader by providing advanced value added services to global clients. This model suggests ways in which a supplier nation can gain leverage in the value chain.

The remainder of the article is organized as follows. Section 1 provides a brief study background. Section 2 presents the discussion on the globalization and the rise of outsourcing to emerging markets. Section 3 focuses on India as offshore outsourcing destination and its competitive challenges. Section 4 discusses strategies for positioning India as a global knowledge leader in the offshore outsourcing area, followed by conclusions.

The study background

Off shoring business models

Outsourcing, in its simplest sense, is an extension of the classic “make-or-buy” decision that manufacturers and other organizations face as they search for cost-saving alternatives or outside technical expertise while focusing on their core competencies. With the emergence of today’s global economy, high-cost manufacturing and service firms have realized that survival in a competitive marketplace requires a careful decoupling of selected operations from a firm’s captive divisions and high-cost domestic suppliers that can be outsourced to qualified suppliers in offshore locations. Offshore outsourcing is the business practice of hiring organizations or employees to perform company operations overseas. For example, a company may manufacture and sell computer parts in the US yet use offshore outsourcing to handle its customer service, basic technical support, etc. As firms are increasingly locating their core activities overseas, the choice of offshore sourcing strategies depends on the firm’s value proposition, which depends on the type of business model chosen to accomplish desired goals.

Offshoring business models may take many forms including the following (e.g. Jahns *et al.*, 2006; Javalgi *et al.*, 2009):

- Captive offshoring is when a company decides to produce goods or services by setting up its own wholly-owned subsidiary abroad in order to gain control of its business activities and take advantage of locational factors that may provide access to cheap labor and specific technical expertise. For example, when an American bank opens a call center in Ireland to handle its customer service operations, the call center is a captive but offshore unit which is owned by and dedicated exclusively to serving the parent corporation.
- Offshore outsourcing is the delegation of some portion of an organization’s recurring internal business functions and back-room or front-room operations to a third party (or vendor) in a foreign country who specializes in those functions. The strategy behind offshore outsourcing is to build competitive advantage by shifting key operations to a qualified supplier operating in a low-cost nation. Offshore outsourcing frees up capital which can be used for other critical areas and permits a firm to focus on its core competencies (Tayles and Drury, 2001). Delta Airlines, for example, contracted with firms in India and the Philippines to handle a portion of its reservations system (Stack and Downing, 2005). Companies such as Hewlett-

Packard, Dell, and GE were among the early adopters of offshore outsourcing practices to India.

- Offshore business development center is a third and more complex model than the preceding two, and requires close partnerships or joint ventures between the originating firm and its outsourcing partner. In this model, the client firm retains a higher level of control than in the fully-outsourced model while transferring some aspects of business activities of a captive center to a third party service provider. When a firm uses this model, it is critical to select a service provider who can be trusted and offers solutions that best fit the client firm’s business needs (Foster, 2006). Cisco Systems, for example, operates its own R&D center in India, and complements its resources with partnership arrangements with Indian vendors (Youngdahl and Ramaswamy, 2008).

In a recent survey of chief financial officers in US firms concerning outsourcing of a range of business operations, the largest sectors doing outsourcing were manufacturing (53 percent), information technology services (43 percent), and research and development (38 percent). Contrary to expectations, call centers accounted for only 12 percent (SourcingLine, 2012).

Globalization and the rise of outsourcing to emerging markets

The key driving factors impacting the knowledge-driven economies of nations in emerging markets such as Indonesia or India are the rising importance of the globalization of services, access to global talent, and the rise of offshore outsourcing of services and advancements in information and communication technologies.

Emerging markets such as South Korea, Malaysia, India, China, Russia, and Brazil continue to lead in the outsourcing of knowledge-based services (Radhakrishnan, 2007). The relocation of labor-intensive services (e.g. payroll processing, telephone call centers) to lower-wage emerging markets is consistent with the well-known “comparative advantage.” axiom of international trade. According to this axiom, countries such as India, China, or Vietnam, with their relative abundance of unskilled labor, should specialize in producing goods and services that are labor-intensive, giving these nations a natural comparative advantage over advanced economies which are handicapped by high labor costs, hence likely to outsource manufacturing and service operations to lower cost nations. But the decision to outsource offshore goes beyond just a drive to reduce costs; strategic outsourcing can shorten the supply chain, bring advanced technological skills to solve key problems, free the client firm to concentrate on its core competencies, and improve its long term viability in the harsh and unforgiving global marketplace.

In studying the phenomenon of outsourcing, management consultant A.T. Kearney developed a location attractiveness index using the following three factors:

- financial structure composed of compensation costs, infrastructure costs, and tax and regulatory costs;
- people skills and availability which consisted of cumulative business process experience and skills, labor force availability, education and language, and attrition rates; and

- business environment composed of country environment (includes economic and political aspects), country infrastructure, cultural adaptability, and security of intellectual property (A.T. Kearney, 2004).

Based on these factors, India, China, Malaysia, Czech Republic, Singapore, Philippines, Brazil, Canada, Chile, and Poland were rated, in this order, as the top ten destinations for offshore outsourcing.

India as offshore outsourcing destination: competitive challenges

India's post-colonial history from 1947 until about 1990 was characterized by an economy that was sluggish, public-sector oriented, isolated, and seldom, if ever, regarded as an economy of any consequence in the competitive world of global business. Offshore outsourcing that started in India in late 1980s, specifically with the IT and BPO sector, witnessed an upsurge as a result of the dot com boom and the need to prepare for potential Y2K bugs. Over the years, the parameters for success in the market underwent complete makeover. The 1990s, however, marked the beginnings of India's economic liberalization with new public policies that opened the nation's doors to international competitors, privatized many public sector enterprises (e.g. airports, telecommunications), invited foreign investments, reduced red tape to obtain permits, exposed domestic firms to the disciplines of the free market, and vaulted this slumbering giant onto the world stage as an emerging and significant economic powerhouse.

Whereas European and American multinational corporations (e.g. Kodak, Colgate-Palmolive, Union Carbide, Unilever) have operated in India for more than half a century, their products and brands were targeted largely for internal consumption. India's role as an "exporter" of services grew to prominence with the offshoring of manufacturing and service operations by high-cost firms based in the US and other advanced nations. China benefited from the outsourcing of manufactured goods; India became the leading destination for outsourcing of services.

Offshore outsourcing destinations and their offshore outsourcing IT and IT enabled service providers are in constant competition with each other. India, with a large number of qualitative offshore solutions providers, has emerged as the leader in providing offshore IT outsourcing services to organizations around the world. India's information technology (IT) sector has proven to be a dominant driver and enduring force in transforming this nation from a sleepy, economic backwater to a fast-growing global economy. India's revenues from offshore outsourcing of IT is estimated to have grossed \$59 billion in 2011 with an estimated employment of two million workers (NASSCOM, 2012). Aggregate IT software and services revenue (excluding hardware) for FY2012 is estimated at US\$88 billion.

But other nations (e.g. the Philippines; South Africa) have emerged to take a share of the market. So, whereas the BPO industry is expected to continue to grow in India, its market share of the offshore piece is expected to decline.

India's competitive advantages

With resource optimization, scalability and adoption of newer technologies as the defining factors, the western enterprises

searching for newer ways of investing more on core business function thereby outsource the peripheral ones to outsourcing destinations like India and Indonesia, China, and Philippines. SourcingLine, a provider of business information and research services, compiles an online database of outsourcing country statistics where each country is scored across dozens of key factors within three broad areas: cost competitiveness, resources and skills, and business and economic environment. A list of the top 20 outsourcing countries (Table I) shows India leading the list with reportedly the best mix of advantages even if it does not lead across all dimensions (SourcingLine, 2012). India remains a highly cost-competitive location with a substantial resource and skill base. Other leaders in the survey include numerous other countries from Asia, but also Latin America and Europe.

A.T. Kearney's Global Services Location Index ranks countries based on their attractiveness for offshoring of services across three dimensions: information technology (IT), BPO, and voice-based work (A.T. Kearney, 2011). The study concludes that "India alone has proven able to compete in all [three] dimensions. It is the preeminent destination and leader in all fields of offshore services, excelling in IT thanks to its elite educational institutions, in BPO because of a large annual output of qualified graduates, and in voice because of the English speaking capabilities of its population" (A.T. Kearney, 2011). The Kearney study notes that top three nations – India, Indonesia and Estonia – have remained in this rank order since the inception of the index in 2003 and are expected to remain as the most preferred outsourcing destinations. Indeed, Asian nations appear on seven of the top ten positions on the Index with Indonesia, Thailand, Vietnam, and the Philippines sharing the short list with Egypt (#4) and Mexico (#6).

India's many competitive advantages include the following:

- *Deep technical strengths* in information technology, science, and engineering give India (and China) a significant set of advantages in attracting knowledge process outsourcing projects. A national and enduring focus in schools and colleges on mathematics, science, and technology has resulted in a large pool of engineering, science, information technology, and medical graduates (see Table II). Table II compares recent trends in bachelor degrees in engineering and related technical field. It is clear that India is lagging behind in degree awarded. A new interest in business and finance has also resulted in a large source of analytically-oriented workers who can handle a wide range of BPO projects.
- *World-class universities.* A select group of institutions in India (e.g. Indian Institutes of Technology; Indian Institutes of Management) have attracted the best and brightest students and faculty, and have produced distinguished alumni who have excelled on the world stage as inventors, entrepreneurs, managers, and business leaders.
- *Long traditions of private enterprise and ownership of property.* Even during its years as a socialist, planned economy, India has had a thriving private sector with commercial codes and laws, rooted in western traditions, that respected and protected individual rights and ownership of private property. This pro-business environment was strengthened in the 1990s as the nation opened the doors to global trade and market economics. The protection of intellectual property, though uneven by western

Table I Top 20 outsourcing countries

Overall rank	Country	Overall outsourcing index	Cost competitiveness index	Resources and skills index	Business and economic environment index
1	India	7.1	8.3	6.0	4.2
2	Indonesia	6.7	8.6	4.3	4.4
3	Estonia	6.6	7.5	5.2	6.9
4	Singapore	6.5	6.4	5.7	9.4
5	China	6.4	7.0	5.6	5.6
6	Bulgaria	6.4	8.8	2.9	5.2
7	Philippines	6.3	9.0	2.8	3.9
8	Thailand	5.9	8.2	2.3	5.9
9	Lithuania	5.9	7.0	3.9	6.5
10	Malaysia	5.8	7.9	2.2	6.9
11	Jordan	5.7	7.6	2.7	5.7
12	Chile	5.7	7.2	3.0	6.9
13	Egypt	5.7	9.0	0.9	4.3
14	Hungary	5.6	6.9	3.4	6.3
15	Czech Republic	5.6	6.9	3.2	6.5
16	Poland	5.6	6.8	3.6	5.5
17	Vietnam	5.4	7.4	2.5	4.5
18	Sri Lanka	5.4	8.3	1.2	4.3
19	Latvia	5.4	7.0	2.7	5.6
20	Argentina	5.4	7.5	2.5	4.4

Source: SourcingLine (2012)

Table II Bachelor degrees in engineering, computer science, and information technology awarded in USA, India, and China (four-year degrees, in thousands)

Country	1999	2001	2003	2005
USA	110.0	114.2	134.4	133.9
India	75.0	82.1	129.0	170.0
China ^a	200.0	219.6	352.5	517.2

Note: ^aChina: Series Ministry of Education Yearbook (See notes in the original sources cited for further elaboration)

Sources: Wadhwa *et al.* (2007); Gereffi *et al.* (2008)

standards, has been stronger in India than in some other Asian countries (International Property Rights Index, 2012).

- *Large English-speaking population.* It is estimated that India has more than 350 million English “users” (i.e. those who read and write English but are unable or uncomfortable to speak it) and about 100 million English speakers who are fluent in both written and spoken English. India may be the world’s second largest English speaking country after the US. English is the “common” language among most educated Indians today. When two Indians from different states meet, they invariably communicate with each other in English. English is the common language for much of India’s medium and large enterprises, many government units, and almost all education at the university level (TESOL-India, 2011).

Virtually all computer users in India use the English edition of Microsoft Windows. Less than 1 percent of all

computer users in India use Indian languages for computers. All emailing within India is in English.

- *An enduring democracy.* With more than 60 years of uninterrupted democratic government, including a free press, open elections, and great freedom of expression, mobility, and lifestyles, India presents a sociopolitical environment which is very comparable to that of the US and other democratic western nations. While such an environment can sometimes pose bureaucratic delays, it also provides a level of confidence and predictability to foreign investors about their rights and responsibilities when doing business in India.

Concerns that threaten India’s competitive edge

Since the turn of the century, India’s economy has enjoyed an enviable rate of growth, ranging from 5 percent in 2001 to nearly 10 percent in 2010 and about 7 percent in 2011 (World Bank, 2012a, b). But competitive advantages in fast-changing global environments can be ephemeral. Indeed, in the wake of the global economic crises of the past four years, the Reserve Bank of India revised India’s GDP forecast to an annual growth of 5.5 percent in 2012-2013 as against 5.7 percent estimated earlier (Moneycontrol, 2013).

In the case of India, the BPO/KPO advantage may erode for a variety of important reasons, some of which are discussed below:

- *Political indifference.* A recent report in the *New York Times* (Bajaj, 2011) quotes economist J. Aziz of JPMorgan-Mumbai who said that Indian policy makers still maintain an “ambivalent” attitude toward foreign investors while some other emerging economies have welcomed them. The negative impacts are noted where foreign direct investment to countries such as Thailand, Indonesia and

Brazil has surged. Direct investment into Brazil, for example, increased by 16 percent, to \$30.2 billion last year, according to the United Nations. To quote the economist Aziz: “In a world awash with liquidity, there are many other places to fish.”

In early 2011, foreign investors reportedly took \$1.4 billion out of the Indian stock market, sending the country’s stock index down 17 percent from the record high it set in early November 2010. Even after nearly two decades of liberalization, the decline in foreign investment is symptomatic of the significant challenges that foreign investors continue to face in India.

- *Corruption.* In 2011, a populist movement in India, led by an anti-corruption crusader, Mr Anna Hazare, stirred a nationwide awareness and protests over government corruption in the awarding of contracts, bribery, and patronage (*Times of India*, 2013). Societal corruption is a deterrent to investors seeking to collaborate or partner with suppliers in a foreign land.

India ranks 74th among 150 countries ranked for corruption by World Audit, a UK-based international not-for-profit organization which reports on corruption, human rights abuses, and other practices (World Audit, 2012). The US ranks 15th; New Zealand, Denmark, and Finland are tied for number one. Even though India ranks higher (i.e. less corrupt) than such outsourcing destinations as Bangladesh and the Philippines, it trails Malaysia (38), China (ranked 61), and Brazil and South Africa (tied at 53).

- *Inflation.* Whereas India’s economy has been growing at an annual rate of more than 9 percent, its inflation rate for 2010 was estimated to grow to 11.7 percent, one of the highest among large emerging economies, ranking India 202 out of 224 nations (Central Intelligence Agency, 2011). Inflationary trends affect the cost of doing business and the uncertainty of rising costs can make investors skittish and deter firms that are seeking to establish long term outsourcing relationships with Indian suppliers. Both China and India face the prospects of inflation as their economies continue to grow and prosper.
- *Bureaucracy and red tape.* The Tata Group, one of India’s largest and most diversified multinational firms, has reported “bureaucratic delays, arbitrary regulatory decisions, and widespread corruption” in its attempts to expand operations within India in steel, power, aviation and telecommunications (Sharma, 2011, p. B1). In its annual rankings of countries for “ease of doing business,” the World Bank (2012a, b) ranks India a distant 134th, behind other emerging economies such as Indonesia (ranked 121), Bangladesh (107), Sri Lanka (102), Russian Federation (123), Pakistan (83), and China (79). India ranks relatively high for protecting investors (44) and obtaining credit (32), but it falls far behind on such criteria as starting a business (165), dealing with construction permits (177), and enforcing contracts (182). The Small Business Administration’s rankings of the best nations to start a business places India 53d; China is 40th, and Malaysia.
- *A systemic economic divide.* A *Wall Street Journal* headline proclaimed: “India’s Boom Bypasses Rural Poor” (Wright and Gupta, 2011, p. A1). Politicians and political analysts point out that India’s recent ascendancy as a world-class economic power appears to have benefited mainly the

affluent upper classes of this populous nation, with very little if any trickling down to the rural poor who make up roughly two-thirds of the country’s 1.2 billion people. Whereas a complex set of factors might explain this anomaly, much blame can be placed on misguided public policies, cultural norms, bureaucratic inefficiencies, and corruption – all reasons that might discourage long term FDI’s in India. The World Bank estimates that 41.6 percent of India’s population lives on \$1.25 or less per day, placing this ostensibly booming economy in the company of 20 of the world’s poorest nations such as Ethiopia, Niger, Bangladesh, and Guinea, 43.3 percent (World Bank, 2012a, b). A silver lining is the evidence that, while poverty at \$1.25 a day in 2005 prices increased from 420 million people in 1981 to 455 million in 2005, the poverty rate as a share of India’s total population decreased from 60 percent in 1981 to 42 percent in 2005.

- *Competition from other nations.* Technical talent, both in breadth and depth, along with factors such as a nation’s currency value, economic stability, political stability, and geographic proximity all play into the location attractiveness of nations that compete as providers of outsourcing services (A.T. Kearney, 2011). Mexico, for example, has benefited from “nearshoring” because of its proximity to the US, and because its average wages decreased by 18 percent in US dollar terms in 2010. Latin American nations have benefited as service hubs because of the growing Spanish-speaking populations in the US.

China, Korea, and Russia may lack fluency in the English language but their technical strengths are considerable. China graduates the largest number of engineers in the world (Wadhwa *et al.*, 2007), and it has begun investing significant resources to upgrade its institutions of higher learning. China and Russia already have strong footholds in high-end analytics and advanced IT. The English language advantage that India currently holds will erode as China and many Central European nations see the results of English language education and speaking skills that are being introduced in schools from the lowest grades.

Sustaining the competitive edge

To understand why nations gain competitive advantage in certain industries, Porter’s (1990, 1998) “diamond” model provides a useful framework for examining policies and national strategies that can sustain India’s competitive advantage in outsourcing of knowledge-based services. The model consists of four interrelated components: factor conditions; demand conditions; related and supported industries; and firm strategy, structure, and rivalry.

Factor conditions – building core national competencies

Factor conditions refer to the factors of production of a nation (e.g. natural resources, labor supply, technological resources, and commercial infrastructure). A nation’s factor conditions, according to Porter (1998), can be grouped into a number of broad categories such as basic, advanced, generalized, and specialized factors. Basic factors are inherited, such as land, climate, and skilled and unskilled labor. Advanced factors, on the other hand include specialized resources which a nation

creates, such as advanced telecommunications infrastructures or technically-trained personnel.

India's mandates for its future as an outsourcing destination will require a resolute commitment to invest in the following "macro-environmental" factors:

- *Intensify investment in creating an educated and trained professional workforce.* Education is indispensable to the knowledge economy, an economy which demands a set of new competencies which includes not only IT and IT-enabled skills, but also scientific and other professional skills. The education system in India has gone through many changes in the last two decades. Without any doubt it has led to better economic and social conditions. India takes pride in its large pool of well-educated and vocationally qualified people who are making their mark both domestically and globally in such knowledge-based areas as science, engineering, information technology, and R&D. However, this group represents a small portion of the nation's one billion people (see Wu *et al.*, 2005). To meet the rising needs of multinational employers, India needs to produce a sustained cadre of knowledge workers by making its educational system more adaptable to the changing economy.

India has developed a handful of world-renowned educational institutions in engineering, medicine, science, and technology. But a large majority of India's universities and colleges are woefully deficient in terms of research capabilities, qualified faculty, up-to-date materials, laboratories, and technological supports, and highly politicized (Altbach, 2005). India will have to develop "bench strength" or depth of talent in its higher education system in order to compete against nations such as China, Indonesia, and Malaysia that are making substantial investments in upgrading their universities and building applied and basic research capabilities.

- *Create a climate for entrepreneurship and innovation.* In the past three decades, Indian high technology entrepreneurs have found supportive environments to invest and grow their businesses in areas such as the US's Silicon Valley or Research Triangle or in city states such as Hong Kong or Singapore. India's poor reputation for "ease of doing business" must be combated with business reforms that will encourage risk-taking, assist entrepreneurs with seed capital, mentoring, and venture capital supports, and provide tax incentives for upgrading of technology.
- *Attract FDI and world-class researchers to build critical strengths in research and development.* A competitive edge will require India to move up the value chain. India's universities, with their primary focus on teaching and only marginal attention to basic and applied research, must revisit these priorities. World-class universities contribute to the knowledge society by conducting important research and recruiting scientists and researchers from a global pool and compensating them at global standards. India's premier institutions are only beginning to adopt these practices by also adopting creative and, until now, unfamiliar approaches to raising funds (e.g. with philanthropic fund development programs directed to alumni and corporations).

Demand conditions – intra-national trade

Demand refers to the nature of the home-market's demand for an industry's products and/or services, the logic being that

a demanding domestic market will pressure local suppliers to be innovative and make improvements in quality and value. Kapur and Ramamurti (2001) have pointed out that Porter's diamond model may not clearly explain India's success in IT and IT-enabled services, probably because India's domestic demand is not as large and sophisticated as the overseas demand for its services. While it is true that India's success in the IT areas comes largely from serving foreign customers, especially those in the US, India's domestic economy continues to expand and a principal driver has been its IT-BPO performance which, for fiscal year 2012, was estimated to exceed US\$100 billion and add 230,000 jobs, accounting for 2.8 million in direct employment and an estimated 8.9 million in indirect job creation (NASSCOM, 2012). The IT-BPO industry's share of total Indian exports (goods and services) increased from less than 4 percent in FY1998 to an estimated 25 percent in FY2012.

The economic boom in India has driven wages and salaries high in urban markets that are home to many outsource suppliers. In order to preempt loss of business to other nations, India must broaden its base of BPOs to providers in lower-cost small towns and rural areas. The giant outsourcing firm, Tata Consulting Services, already outsources certain projects to other suppliers in India.

Related and supported industries – the cluster as critical mass

This dimension of the "diamond" model is critical to achieving competitive advantage in particular industries that share common distribution structures, technologies, and customers or activities. It is true that nations are typically competitive in industries where clusters of related and supporting industries are geographically concentrated, making interactions and connectivity stronger and faster. Porter (1998, 1990) notes that the presence of suppliers and related industries within a nation that are internationally competitive provides several advantages, including creativity, innovation, interactivity and connectivity, and entrepreneurial orientation. India's IT clusters are a case in point where specialized suppliers and service providers and firms in allied industries compete but also cooperate.

Anand Rangachary, Managing Director of Frost & Sullivan's South Asia and Middle East operations, suggests that, in the digital age, "virtual clusters" are as effective as geographic clusters in promoting innovation and creating competitive advantage in the IT industry (Murali, 2011): "The interplay between the various stakeholders of the extended enterprise, namely, platform, software development, product design, prototype, testing, manufacturing and marketing, either through geographic or virtual proximity, has played a critical role in the success of the IT industry globally." Indian firms that partner well in such virtual or physical clusters will find their competitive advantage to be strengthened. But such partnerships cannot thrive if the regulatory and ethical business climates of international partners are conflicted and become the source of worry or distrust.

Firm strategy, structure and rivalry

According to Porter (1998), firm strategy, structure, and rivalry refer to "the conditions in the nation governing how companies are created, organized, and managed, as well as the nature of domestic rivalry" (p. 107). Nations tend to succeed

when the types of organizations favored by the nation are well-suited to their industries' sources of competitive advantage. A nation's cultural and social norms and attitude towards internationalization influence the way firms are organized and managed, and are quite often reflected in government policy.

In India, a new generation of managers and entrepreneurs in knowledge-intensive service industries (e.g. software design; accounting services) has adopted a more global mind set, and these managers understand that, in order to succeed in the global market place, one must seek opportunities beyond ones national borders. This mind set could be attributed to a variety of factors including weak initial demand in India's domestic market, the government's incentives to grow export markets and, perhaps, the recent exposure of Indian entrepreneurs to global environments as they earned advanced degrees from prestigious institutions of higher education in the US, India, and other nations (Nair *et al.*, 2007). A notable example of the last factor is Azim Premji, the CEO of the Indian software firm, Wipro, a Stanford University graduate, who transformed his family business from a minor purveyor of cooking oil into a global software giant (Kapur and Ramamurti, 2001).

Unequivocally, the nature of domestic competition and rivalry has a significant impact on the international competitiveness of a nation's firms. Local competition provides a powerful stimulus for fostering competitive advantage. Witnessing business opportunities, overseas Indians are returning to start new companies, supply venture capital, or act as angel investors (Kapur and Ramamurti, 2001).

Chance and government factors – preparing for contingencies

In addition to the four determinants discussed above, Porter (1998) suggested two additional determinants: chance and government. These two determinants impact all of the four elements of the diamond either for better or for worse. Chance events are unexpected and just happen. How a nation prepares for chance outcomes determines its ability to react and take advantage of such situations. The threat of terrorism, for example, and how well prepared a nation is to handle such an unpredictable event, would help foreign investors and firms seeking outsourcing partners to assess the risks of entering into business relationships with firms in a particular nation.

Government – through its public policies and willingness to work with domestic and global private sectors – can influence (and be influenced by) each of the four determinants either favorably or unfavorably. India's government bureaucracies have made major strides in overcoming their notorious reputations for red tape, but a national focus on streamlining FDI and other trade transactions will be critical as major nations compete for a lion's share of global outsourcing.

Positioning policies for India as a global knowledge leader

The global outsourcing of services has evolved into many forms. Researchers (Javalgi *et al.*, 2009; Kedia and Somnath, 2007) have discussed three progressively sophisticated levels of outsourcing: tactical, strategic, and transformational (see Figure 1). Outsourcing at the tactical level covers a wide range of low-level services ranging from call centers and

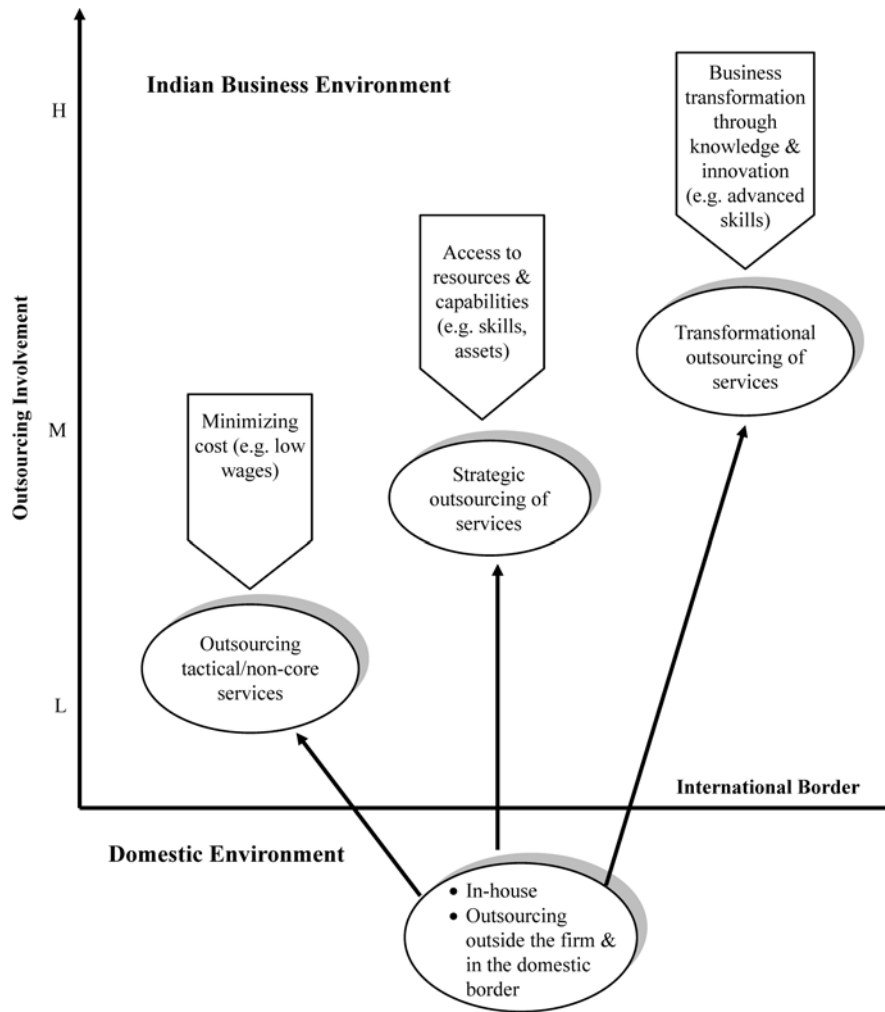
telemarketing to data entry, medical and legal transcriptions, and claims processing with the focus being on cost reduction. Strategic outsourcing covers higher level activities such as project management, technical support, and software development. Transformational outsourcing involves services that can make a major impact on the client firm or the client firm's value chain (e.g. recruiting and human resources management, customer relationship management, engineering design, IT strategy and planning, and medical diagnostic services). Transformational outsourcing enables the firm to retain control, create highest value for an organization, and build sustainable competitive advantage (Javalgi *et al.*, 2009). The motivation to use the transformational offshore outsourcing is to concentrate on innovative high-end value added activities in the firm value chain. Clearly, the three types offer the tool to address different business objectives ranging from cost reduction to significant change in the firm's value propositions (Javalgi *et al.*, 2009).

BPO, an all-inclusive term, covers outsourcing from the lowest tactical levels to some of the higher transformational levels. BPO involves the contracting of a firm's operations or business processes (e.g. payroll; transcription of legal or medical documents; technical support) to an outside supplier. The Indian BPO model has increasingly grown from transcribing and data entry to rule set based processing where clients are demanding more advanced expert knowledge-based services. Hence there is a rising interest from the clients who are seeking expert knowledge services. Some of them are legal services, pharmaceutical marketing, research, and many more.

With the emergence of so-called knowledge economies that depend on information and telecommunications technologies to complete the value chain, outsourcing has taken on heightened importance as both a creator and distributor of knowledge. Known as "knowledge process outsourcing" (KPO), this type of global business activity demands higher levels of technical and intellectual skills in order to perform a function or complete a process. Because information and telecommunications technologies together serve as the ubiquitous and indispensable operational backbone for the outsourcing of business services, business process outsourcing is also referred to as information technology-enabled services (ITES). ITES, in turn, has spawned higher-end KPOs, a label that covers a wide and diverse range of outsourced services including the following:

- investment research services (equity, fixed income and credit, and quantitative research);
- business research services;
- data analytics;
- market research services;
- valuation and fairness opinions;
- legal research services (also known as legal process outsourcing);
- financial modeling;
- engineering and technical support outsourcing;
- technical/industrial/architectural design;
- computer-generated imagery and digital animation; and
- management consulting.

Figure 1 Offshore outsourcing types and the level of involvement



Source: Javalgi et al. (2009)

Strategies for moving up the value chain: from BPO to advanced KPO

India’s future as a leader in knowledge process outsourcing will be shaped by a complex set of commitments and strategic investments that India’s private and public sectors should be willing to make over the next five to seven years. The competitive edge here refers to more than just being the dominant high volume, low-end provider of BPO services but one where Indian suppliers will work toward balancing the lop-sided bargaining power of customer firms and, perhaps, even tipping the power scale toward the suppliers. This type of long term strategy will require India’s key outsourcing sectors, lead by IT and KPO, to move up the value chain in a strategic and multilateral effort.

Figure 2 maps the progressive steps that Indian suppliers might take as they move from low levels of knowledge leadership and low levels of competitive advantage up to higher levels in the value chain. The progression shows that certain key outsourcing industries in India have the opportunities to move from being low-end BPOs by ratcheting up their value-added services with knowledge-intensive providers of KPO services. As these industries build

deeper R&D strengths and their service clusters in India and abroad become exclusive or preferred providers of advanced knowledge services (e.g. financial modeling, software engineering for mobile applications, specialized medical diagnostics), they will eventually reap dividends as customer firms worldwide seek their services as “global knowledge leaders.”

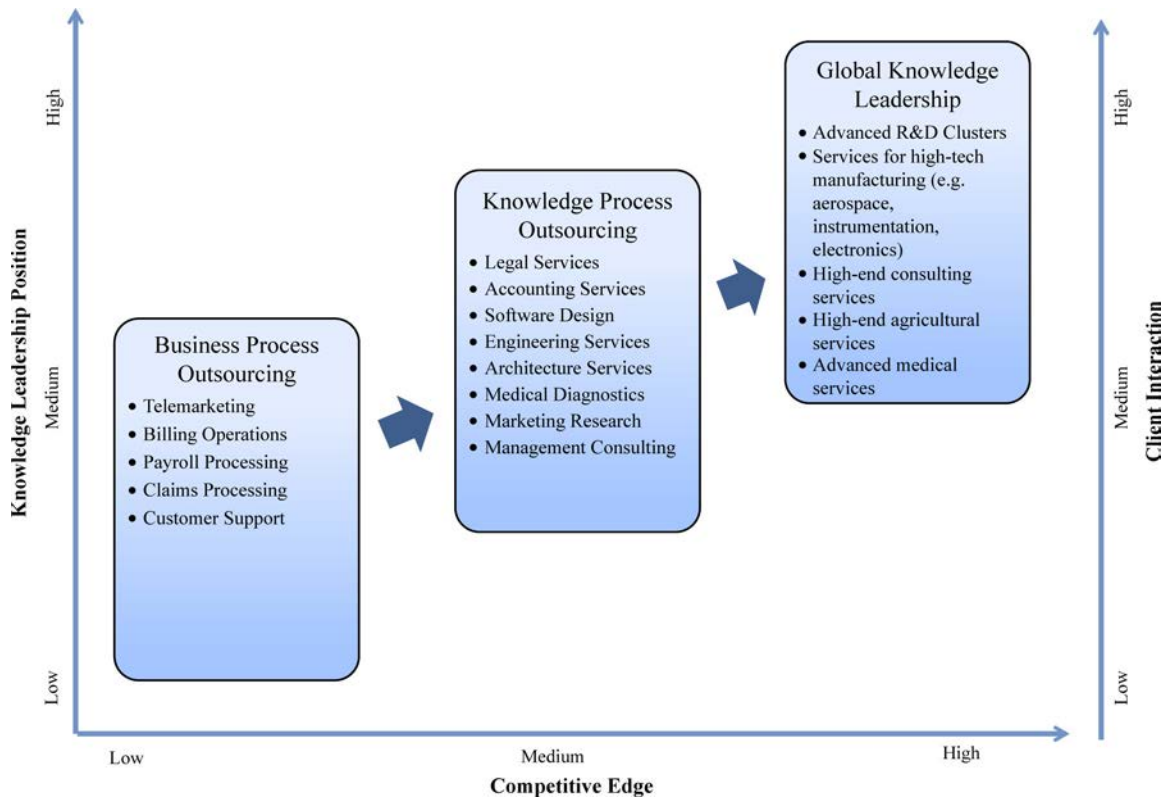
The path up the value chain will require a national commitment and resolve in attending to a myriad issues and initiatives. Selected issues for consideration are presented below.

1. Establish strategic partnerships with client firms

The provider of outsourced services may find a new account to be a windfall but will soon realize the risks that come with being a supplier to a firm that wields disproportionate influence in the value chain. Risks that supplier firms take on include the possibility that they may become over-dependent on the sole customer, or will be subject to unreasonable demands (e.g. forced price reductions or higher levels of customer service) from the customer firm.

Reducing dependence on a customer firm may involve strategic investments in improving quality, service, and

Figure 2 Moving up the outsourcing value chain



product innovations that will tip the customer-supplier power balance in favor of the supplier. Becoming a sole supplier of knowledge-based services because of exclusive technical resources or human capital – developed either in-house or acquired – can force the client firm to moderate its negotiating position and propose more equitable arrangements with the supplier firm. For example, ten years ago, Tata Consulting Services (TCS), the IT unit of the giant Indian industrial holding company known as Tata Group (which includes Tata Motors and Tata Steel), did only very basic work for a large Detroit automaker. Now TCS tests thousands of engine components, using computer models, and suggests improvements for their design (*The Economist*, 2013).

Indian firms that supply higher-end, higher value services to international customers will find opportunities to strengthen their bargaining power over customers by proposing partnership arrangements such as joint ventures. Powerful customers may, in turn, attempt to minimize their risks with a highly-valued supplier by proposing a merger or acquisition or developing the requisite expertise in-house. Again, the power relationship in such customer-vendor partnerships must be carefully studied and evaluated.

2. Attract foreign direct investment (FDI) from suppliers of high-end, knowledge-based services

India's current comparative advantages in delivering a range of low- to high-end outsourced services to customer firms in the west are likely to be unsustainable as other nations (e.g. China, Nigeria) gear up to compete with newly-trained English-speaking workers who can compete for the

commodity- or low-end of the BPO business spectrum. India's public policy makers may find it advantageous to target key high-value, knowledge-intensive multinational firms (e.g. financial services; aerospace) and provide incentives that will invite them to invest in India and partner with local suppliers. Already, it is reported that IBM employs more engineers in its India operations than it does in any other country except the US. Such FDI creates a foundation for technological clusters (see item 4 below) that can create a sustainable edge for India as a global business partner.

3. Serve strategic niches with value-added solutions

Knowledge leadership will require a commitment on the part of selected firms and industries to invest in innovation and new technologies that leverage India's strengths in IT, engineering, science, and technology that match the needs of selected customer applications. Strategic niches can become profitable if outsourcing suppliers can progress from offering piece-meal projects to high value-added solutions. For example, Infosys, a large Indian software firm, offers "Finacle" solutions which address the core banking, mobile banking, and e-banking needs of retail, corporate and commercial banks worldwide.

4. Building research and development (R&D) megaclusters

Internationalization of research and development activities has accelerated in the 1990s. India is considered a leading place for locating R&D centers. Nearly one hundred multinationals have already set up R&D centers in the country, creating technological and innovative capabilities for

Indian firms (World Bank, 2012a, b). The Indian cities of Bangalore, Chennai, Delhi, Hyderabad, and Mumbai have so far been the most attractive destinations for R&D largely due to the presence of foreign companies, internationally recognized educational institutions, and research laboratories.

In the last five to ten years, in the R&D sector, for example, more than 70 multinational corporations (e.g. Eli Lilly, General Electric, Intel, and Hewlett Packard) have set up R&D facilities (Som, 2006). In Bangalore, India, the Daimler Chrysler Research Center is heavily involved in applied research in avionics, simulation, and software development; HP Labs India has built a prototype that can scan hand written mail through a small handheld device instead of a scanner (Som, 2006).

India is building an international reputation for its innovations in areas ranging from pharmaceuticals to software. Over the past decade, companies such as AstraZeneca, Glaxo-Smith-Kline, ABB, Ericsson, and SKF have established and expanded significant R&D operations in India which offer significant cost advantages in the areas of contract research and clinical trials (Pandey *et al.*, 2004). In the area of IT and IT-enabled services, India is expected to continue on the path to becoming a global leader as it increases its R&D capabilities and develops greater university-industry collaborations.

The collaboration of government at the central and state levels with private sector participants, universities, business schools, and civic leaders will be vital in developing megacusters or “ecosystems” that can provide a portfolio of services ranging from low-end to premium-priced services. Long term viability will also be assured when the chance uncertainties of doing business in India – whether these be terrorist threats or unwritten rules of ethical conduct – can be minimized with a cooperative national effort that makes India the country with the least surprises for doing global business.

5. Creating a culture of ethical behavior

With the outsourcing of business operations, new pressures have emerged for parent corporations that are trying to transfer their corporate values and practices to offshore suppliers who contribute to the design and manufacture of the final product. These values can influence all aspects of a firm’s operations from design integrity and quality of manufacturing or service delivery to employment policies and ethical codes of business conduct.

The challenge of creating shared values across cultures is significant even when the relationship between manufacturer and a supplier is arms-length (as in the case of a shipper who handles a firm’s cargoes). But when a firm is investing in long-term relationships with suppliers in other nations, the need to develop common cultural values and codes of conduct that meet international standards for legal and ethical behavior becomes preeminent. With the growth of outsourcing to low-cost regions of the world, many with different or uneven standards of ethical conduct, it becomes imperative for parent corporations to include ethical oversight as one of the many critical performance values in managing their relationships with outsourcing partners.

For nations such as India – as well as for other outsource destinations that rank low on ethical standards – a commitment to forging and enforcing sustainable codes of conduct will be important long-term goals if they have ambitions of being global thought leaders. Strong anti-

corruption laws, backed by fastidious and fair enforcement, will be needed. Ethical analysis and understanding of global business best practices must be inculcated into all levels of a nation’s educational curricula to create a generation of technocrats, managers, and leaders who will run business that will be viewed with respect rather than suspicion – and as partners, not mere suppliers, in global trade.

For three decades, India has been a destination for offshore outsourcing of services following a pattern set earlier by manufacturing. Government units at the federal and state level as well as an enterprising private sector rolled out the welcome mat for western companies that were seeking a low cost, skilled, and dedicated labor force. The majority of workers spoke good English, had technical background, and embraced the training offered by employers. Specific sectors in this business process outsourcing were and are billing, payroll and claims processing, telemarketing, and customer support.

As might be expected, there were and still are barriers to further growth. These range from questions about the level of technical competence achieved by graduates from second or third tier institutions to competition from other nations. However, Indian firms and government agencies have adopted policies and procedures to maintain a competitive edge, e.g. raising standards at the workplace and universities, providing opportunities for further training, and forming physical and virtual clusters for related operations. India, in effect, is now moving up the value chain, from business to knowledge process outsourcing in such areas as legal work, software design, accounting and consulting services.

Conclusion

India is regarded to be a super power when it comes to providing offshore IT and IT enabled outsourcing services. Over 50 percent of the *Fortune* 500 companies have already outsourced their requirements to Indian software vendors. Some of these beneficiaries in the current trend of outsourcing to India are: Microsoft, Oracle, Citibank, General Electric, Reebok, General Motors, Morgan Stanley, Wal-Mart, AT&T, Sony, Boeing, Coca-cola, Pepsi, Swissair, United Airlines, Philips, IBM, among many more.

To achieve knowledge leadership position in the outsourcing world, India needs to take additional steps in variety of areas. For instance, India has to ease up on bureaucratic rules, improve infrastructure, encourage even more entrepreneurial ventures, and expand its domestic market. Specifically, in rising even further on the value chain, research and development centers will have to be developed for high-tech services that complement high-tech manufacturing, e.g. R&D for advanced materials, better instrumentation, and high-end consultative services that range from intelligence gathering to anti-piracy enforcement. In addition to better intellectual property protection, Indian firms and government agencies are likely to be involved in all aspects of access, security, and privacy concerns in the field of telecommunication and electronics interchange. One field that holds major promise here is that of “big data” with strong emphasis on high level analytics, pattern recognition, and data base management. India is an ideal offshore outsourcing destination due to a variety of advantages it possesses over other countries. It has the opportunity to establish itself as a knowledge leader in the services sector in the knowledge based global economy.

References

- Altbach, P.G. (2005), "Higher education in India", *The Hindu*, Tuesday, April 12. www.hinduonnet.com/2005/04/12/stories/2005041204141000.htm
- A.T. Kearney (2004), *A.T. Kearney's 2004 Offshore Location Attractiveness Index*, A.T. Kearney, Chicago, IL.
- A.T. Kearney (2011), "Offshoring opportunities amid economic turbulence", A.T. Kearney Global Services Location Index 2011, available at: www.atkearney.com/index.php/Publications/offshoring-opportunities-amid-economic-turbulence-the-at-kearney-global-services-location-index-gsli-2011.html?q=global+services+location+index
- Bajaj, V. (2011), "Foreign investment ebbs in India", *New York Times*, February 24.
- Bunyaratavej, D., Hahn, L. and Massini, S. (2011), "Conceptual issues in services offshoring research: a multidisciplinary review", *Group and Organization Management*, Vol. 36 No. 1, pp. 70-102.
- Cavusgil, T., Knight, G. and Riesenberger, J.R. (2008), *International Business*, Pearson-Prentice Hall, Upper Saddle River, NJ.
- Central Intelligence Agency (2011), *World Fact Book*, Central Intelligence Agency, Washington, DC, available at: www.cia.gov/library/publications/the-world-factbook/index.html.
- (The) Economist (2013), "On the turn: India is no longer the automatic choice for IT services and back-office work", January 19, 2013, available at: www.economist.com/news/special-report/21569571-india-no-longer-automatic-choice-it-services-and-back-office-work-turn
- Foster, I. (2006), "Globus Toolkit Version 4: software for service-oriented systems", *Journal of Computer Science and Technology*, Vol. 21 No. 4, p. 513.
- Gereffi, G., Wadha, V., Rissing, B. and Ong, R. (2008), "Getting the numbers right: international engineering education in the US, China, and India", *Journal of Engineering Education*, Vol. 97 No. 1, pp. 13-25.
- International Property Rights Index (2012), "Property rights alliance and Americans for tax reform", *Americans for Tax Reform Foundation*, available at: www.internationalpropertyrightsindex.org/ranking
- Jahns, C., Hartmann, E. and Bals, L. (2006), "Offshoring: dimensions and diffusion of a new business concept", *Journal of Purchasing and Supply Chain Management*, Vol. 12, pp. 218-231.
- Javalgi, R.G. and Martin, C.L. (2007), "Internationalization of services: identifying building blocks", *Journal of Services of Marketing*, Vol. 21 No. 6, pp. 391-397.
- Javalgi, R.G., Dixit, A. and Scherer, R.F. (2009), "Outsourcing to emerging markets: theoretical perspectives and policy implications", *Journal of International Management*, Vol. 15, pp. 156-168.
- Kapur, D. and Ramamurti, R. (2001), "India's emerging competitive advantage in services", *Academy of Management Executive*, Vol. 15 No. 2, pp. 20-32.
- Kedia, B. and Somnath, L. (2007), "International outsourcing of services: a partnership model", *Journal of International Management*, Vol. 13 No. 1, pp. 22-37.
- Kotabe, M., Mol, M. and Ketkar, S. (2008), "An evolutionary stage theory of outsourcing and competence destruction: a triad comparison of the consumer electronics industry", *Management International Review*, Vol. 48, pp. 65-93.
- Lewin, A.Y., Perm-Ajchariyawong, N. and Russell, J. (2009), "Taking offshoring to the next level: the 2009 offshoring research network corporate client survey report", research report R-1473-11-RR.
- May, J. (2010), "The best country to start a business ...", *Wall Street Journal*, p. R4, November 15.
- Moneycontrol (2013), "RBI [Reserve Bank of India] lowers GDP growth forecast, rate cut hopes dim", Monday, January 28, available at: www.moneycontrol.com/news/economy/rbi-lowers-gdp-growth-forecast-rate-cut-hopes-dim_814166.html
- Murali, D. (2011), "Clusters can cut through the glass ceiling", *Business Line, The Hindu*, available at: www.thehindubusinessline.com/features/eworld/article1685018.ece
- Nair, A., Ahlstrom, D. and Filer, L. (2007), "Localized advantage in a global economy: the case of Bangalore", *Thunderbird International Business Review*, Vol. 49 No. 5, p. 591.
- NASSCOM (2012), available at: www.nasscom.org/indian-itbpo-industry (accessed 4 February 2013).
- NASSCOM (2012), "Indian IT-BPO industry", available at: www.nasscom.in/indian-itbpo-industry.
- Pandey, A., Aggarwal, A., Devane, R. and Kuznetsov, Y. (2004), "India's transformation to knowledge-based economy: evolving role of the Indian diaspora", *EvaluateServe*, pp. 1-33.
- Porter, M.E. (1990), *The Competitive Advantage of Nations*, Free Press, New York, NY.
- Porter, M.E. (1998), *The Competitive Advantage of Nations*, Free Press, New York, NY.
- Radhakrishnan, S. (2007), "Rethinking knowledge for development: transnational knowledge professionals and the 'new' India", *Theory and Society*, Vol. 36, pp. 141-159.
- Sharma, A. (2011), "India's Tata finds home hostile", *Wall Street Journal*, p. B1, 13 April, 2011.
- Som, A. (2006), "Bracing for MNC competition thorough innovative HRM practices; 'the way ahead for Indian firms'", *Thunderbird International Business Review*, Vol. 48 No. 2, pp. 207-237.
- SourcingLine (2012), "Top outsourcing countries", available at: www.sourcingline.com/top-outsourcing-countries.
- Stack, M. and Downing, R. (2005), "Another look at offshoring: which jobs are at risk and why?", *Business Horizons*, Vol. 48 No. 6, pp. 513-523.
- Tayles, M. and Drury, C. (2001), "Moving from make/buy to strategic sourcing: the outsource decision process", *Long Range Planning*, Vol. 34 No. 5, pp. 605-622.
- TESOL-India (2011), "India-world's second-largest English speaking country", available at: www.tesol-india.ac.in/EnglishTeachingIndustry/india-worlds-second-largest-english-speaking-country
- Times of India (2013), "Office of Anna's anti-corruption movement inaugurated at Ralegan Siddhi", January 13, 2013, available at: <http://timesofindia.indiatimes.com/city/pune/Office-of-Annas-anti-corruption-movement-inaugurated-at-Ralegan-Siddhi/articleshow/18001971.cms>
- UNCTAD (2011), "UNCTAD global investment trends monitor", No. 5, 17 January 2011, available at: www.unctad.org/en/docs/webdiaeia20111_en.pdf

UNCTAD (2012), available at: <http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx> (accessed 4 February 2013).

Wadhwa, V., Gereffi, G., Rissing, B. and Ong, R. (2007), "Where the engineers are", *Issues in Science and Technology*, Spring, available at: www.issues.org/23.3/wadhwa.html

World Audit (2012), "World democracy audit 2012 corruption rankings", available at: www.worldaudit.org/corruption.htm

World Bank (2012a), *World Development Indicators*, The World Bank, New York, NY, available at: http://publications.worldbank.org/index.php?main_page=product_info&cPath=0&products_id=24044

World Bank (2012b), available at: <http://data.worldbank.org/> (accessed 4 February 2013).

Wright, T. and Gupta, H. (2011), "India's boom bypasses rural poor", *Wall Street Journal*, 30 April-1 May, A1, A12.

Wu, K.B., Kaul, V. and Sankar, D. (2005), "The quiet revolution: India is achieving universal elementary education", *Finance and Development*, p. 42.

Youngdahl, W. and Ramaswamy, K. (2008), "Offshoring knowledge and service work: a conceptual model and research agenda", *Journal of Operations Management*, Vol. 26 No. 2, pp. 212-221.

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