UNIVERSITY OF GHENT

FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION

ACADEMIC YEAR 2008 – 2009

SUPPLY CHAIN MANAGEMENT IN EMERGING MARKETS: INDIA

Master’s thesis submitted to obtain the degree of
Master Business Engineering: Operational Management

Julie Deman & Jean-Christian Tuyishime

Under guidance of

Prof. Dr. Robert Boute & Prof. dr. Ir. Ann Vereecke
CONFIDENTIALITY CLAUSE

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Name student  Name student

Julie Deman  Jean-Christian Tuyishime
I. PREFACE

Completing our master’s thesis has been an enriching and challenging journey. We would not have reached our destination of completing the thesis successfully without the support of some people we would like to thank explicitly.

First of all, we wish to extend our gratitude to our promoters. Many thanks to professor dr. Robert Boute, for his guidance, patience, support and motivation. Despite a very busy schedule as Professor at the Vlerick Leuven-Gent Management School, he has always managed to find enough time to provide us his advice and assistance. We also express our thanks to professor dr. ir. Ann Vereecke for making it possible for us to write our thesis on this particularly fascinating topic.

Secondly, we are grateful to the many professionals who have shared their expertise and insights with us. We thank Mr. Philip De Bie, Vice-President Aftermarket & Accessories at Picanol N.V., Mr. Tim Van den Bosch, Supervisor Sales Department at Nippon Express Belgium NV, Mr. Matthias Reytjens, senior consultant at S&V Management Consultants, Mr. Franky Veryser, supply chain manager Europe & Asia at Solutia Europe, Mr. Alejandro Parodi, doctoral student and transport team lead at Solutia Europe, Ms. Vicky Tan, transport and warehousing buyer at Solutia Singapore, Mr. Dinesh Bheere, customer service representative at Solutia India, Mr. Ninil Kotanat, logistics engineer at Solutia India, Mr. D. Panchal, Partner Indirect Tax at Deloitte Mumbai, Mr. Tom Timmerman, 1st Citizen at Value Republic and Mr. Michel Tanghe, sales executive at OOCL Benelux N.V..

In addition, we are thankful to the Belgo-Indian Chamber of Commerce and Industry (BICC&I) for inviting us to the seminar “India & Logistics”, and the Deloitte Academy Belgium and Deloitte Belgium’s Indian Desk for inviting us to the seminar “Doing business in India: Special focus on Corporate and Indirect Tax”. We also thank the members of the Flanders Institute for Logistics (FIL), the Port of Ghent, Flanders Chamber of Commerce and Industry (VOKA), Flanders Investments and Trade (FIT), ArcelorMittal Ghent, and PriceWaterhouseCoopers who have contributed to the realization of this project.

Finally, we are deeply grateful to our parents who have been by our sides through every step of lives and our studies with unconditional love and support. Many thanks to our friends and family as well, for always being there for us.
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<th>Description</th>
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<tbody>
<tr>
<td>3PL</td>
<td>Third party logistics</td>
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<td>4PL</td>
<td>Fourth Party Logistics</td>
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<td>AAI</td>
<td>Airports Authority of India</td>
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<tr>
<td>B2B</td>
<td>Business-to-Business</td>
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<tr>
<td>B2C</td>
<td>Business-to-Consumer</td>
</tr>
<tr>
<td>BPO</td>
<td>Business Process Outsourcing</td>
</tr>
<tr>
<td>C&amp;F agents</td>
<td>Carrying &amp; Forwarding agents</td>
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<tr>
<td>CAGR</td>
<td>Compound Annual Growth Rate</td>
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<tr>
<td>CAV</td>
<td>Customer Assemble Value</td>
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<td>CDV</td>
<td>Countervailing duty</td>
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<tr>
<td>CenVAT</td>
<td>Central Value Added Tax</td>
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<tr>
<td>COGS</td>
<td>Cost Of Goods Sold</td>
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<td>CONCOR</td>
<td>Container corporation of India</td>
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<tr>
<td>CST</td>
<td>Central Sales Tax</td>
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<tr>
<td>CWC</td>
<td>Central Warehousing Corporation</td>
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<td>DC</td>
<td>Distribution Center</td>
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<td>DDT</td>
<td>Dividend Distribution Tax</td>
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<tr>
<td>EDI</td>
<td>Electronic Data Interchange</td>
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<tr>
<td>EOU</td>
<td>Export-Oriented Unit</td>
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<td>EXIM policy</td>
<td>Export &amp; Import policy</td>
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<tr>
<td>FBT</td>
<td>Fringe Benefits Tax</td>
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<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
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<tr>
<td>FTWZ</td>
<td>Free Trade &amp; Warehousing Zone</td>
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<td>FTZ</td>
<td>Free Trade Zone</td>
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<tr>
<td>FZ</td>
<td>Free Zone</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GIS</td>
<td>Geographical Information Systems</td>
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<td>GPS</td>
<td>Global Position Systems</td>
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<td>GRDI</td>
<td>Global Retail Development Index</td>
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<td>GTS</td>
<td>Goods &amp; Services Tax</td>
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<tr>
<td>HLL</td>
<td>Hindustan Lever Limited</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<td>--------------</td>
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<tr>
<td>INR</td>
<td>Indian National Rupee</td>
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<tr>
<td>IR</td>
<td>Indian Railways</td>
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<tr>
<td>ITeS</td>
<td>IT-enabled services</td>
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<tr>
<td>ITS</td>
<td>Intelligent Transportation System</td>
</tr>
<tr>
<td>J.N.P.T.</td>
<td>Jawaharlal Nehru Port Trust</td>
</tr>
<tr>
<td>LSP</td>
<td>Logistic Solution Provider</td>
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<tr>
<td>LTL</td>
<td>Less than Truck Load</td>
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<td>MAT</td>
<td>Minimum Alternative Tax</td>
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<tr>
<td>NCAP</td>
<td>National Civil Aviation Policy</td>
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<tr>
<td>NFE</td>
<td>Net Foreign Exchange</td>
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<tr>
<td>NHAI</td>
<td>National Highways Authority of India</td>
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<tr>
<td>NTPC</td>
<td>National Thermal Power Corporation</td>
</tr>
<tr>
<td>PCU</td>
<td>Passenger Car Unit</td>
</tr>
<tr>
<td>PMI</td>
<td>Purchasing Manager’s Index</td>
</tr>
<tr>
<td>POS-systems</td>
<td>Point-Of-Sales systems</td>
</tr>
<tr>
<td>PPP</td>
<td>Purchasing Power Parity</td>
</tr>
<tr>
<td>SCOR-model</td>
<td>Supply Chain Organization Reference model</td>
</tr>
<tr>
<td>SKU</td>
<td>Stock-keeping Unit</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>TEU</td>
<td>Twenty-foot Equivalent Unit</td>
</tr>
<tr>
<td>USBIC</td>
<td>U.S.-India Business Council</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
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1. Introduction

India is a promising demand market. It is the second most populous country in the world and it has a 300 million strong middle class with increasing disposable income and unmet needs. Foreign retailers and investors are currently competing to get their products to the Indian consumers. Furthermore, multinational companies are increasingly sourcing from India. Each year, a large number of English-speaking engineers graduate from Indian universities. They are highly skilled and cost up to five times less than their peers in Europe, the U.S. or Japan. India is also a very large exporter of natural resources and commodities such as coal and iron ore.

As an emerging economy, however, India presents many challenges to managing effective supply chains. Poor infrastructure, overstretched capacity, a highly fragmented supplier base, the lack of traditional retail channels and point-of-sales data, ineffective usage of information technologies and communication, a very complex system of taxes and restrictive government regulations, are just some of the challenges that can make the sourcing and retailing opportunities in India seem unattainable.

Consequently, many logistic and distribution models that have proven their value in developed economies, will often not work when applied to India. This represents a major challenge for multinational firms, since they either have to adapt their existing strategies to the peculiarities of the Indian landscape or design new strategies from scratch, that are entirely adapted to the local conditions. On top of that, the concept of supply chain management is still nascent in India. Except for the industry leaders, many Indian corporations are still reluctant to sharing information and to engaging in collaborative relationships with suppliers, third-party logistics providers, distributors and retailers.

Thus, India has a tremendous market potential. It also offers remarkable sourcing opportunities. However, whether you want to source from India, or need to get your product to the Indian market, strong logistics and supply chain processes are necessary in order to support your objectives. But how do you cope with all the challenges of managing effective supply chains in India?

The answer to this question is obviously case-specific. However, we will attempt to provide you with the necessary tools to get you started. What should you be aware of when sourcing from India or when trying to distribute your products to the Indian consumer? What are the main obstacles? What are the opportunities? Which best practices and formulas have worked so far?

These are the type of questions that we will try to answer throughout are master's thesis. We will do so by reviewing the literature thoroughly and critically. In addition, we will verify our findings through
interviews with multinational corporations and professionals who are experienced with doing business in India.

1.1. **Purpose and scope**

In this thesis, we investigate the opportunities and challenges of managing effective supply chains in India. Supply chain management is, however, a very broad concept. In addition, there is ample literature on business process outsourcing and manufacturing in India.

With the previous in mind, we have decided to limit our scope to the core supply chain management processes of sourcing and delivery, as the literature on these key areas is rather scarce. Following the Supply Chain Organization Reference Model (SCOR-model) we define **Sourcing** broadly as “the process that procures goods and services to meet planned or actual demand”, and **Delivery** as “the process that provides finished goods and services to meet planned or actual demand, typically including order management, transportation management and distribution management.”

Furthermore, it is not our aim to provide a decision framework on whether or not to go to India. We take the point of view of a firm that has already decided to go to India, either in order to tap into the sourcing opportunities, or in order to get its products to the Indian consumers. The purpose of this thesis is to provide a helicopter view of the Indian business landscape, and map important pitfalls, roadblocks and obstacles. We also look at the opportunities and the paths that some multinational firms have taken successfully.

Through extensive literature review and discussions with professionals from European multinational corporations and from Indian firms, we look at the impact of the current global financial crisis on India, and we assess the trends and opportunities.

Given the importance of building taxes into supply chain optimization, the complexity of the Indian tax system and, to the best of our knowledge, the lack of a clear overview of the Indian tax structure in the literature, we will present a concise, yet comprehensive overview of the Indian tax structure from a supply chain point of view.

1.2. **Structure**

Our master’s thesis is structured as follows: first, we give a short introduction on supply chain management in emerging markets, with special focus on the impact of the financial crisis. Then, India’s economic history and its current situation are discussed briefly. In the following section, we pay attention to India as a demand market. We look at what makes the potential of the Indian market, and
how to win the Indian consumer through customized products and adequate pricing strategies. Next, we examine the challenges that are related to sourcing from India. In the section after that, we examine the logistics obstacles and the opportunities in depth. These are subdivided into three main categories: infrastructure, logistics services providers and information and communication technologies. We then look at the Indian retail sector, its structure, the challenges and distribution models that multinational retailers have adopted in India. We also provide a concise yet extensive overview of the complex tax structure and its impact on supply chain management. We conclude our master’s thesis with a short summary, the limitations of our research and the opportunities for future research.

2. Supply Chain Management in emerging markets

Emerging markets are hot, today more than ever. While these lower-cost countries were perceived by multinational firms as an opportunity to benefit from labor cost arbitrage in the past, the trend has changed. Next to radical cost reductions, other key forces are also driving multinational corporations towards globalization and emerging markets. These are: new markets and growth opportunities, technological capabilities, and political and macroeconomic incentives (Kouvelis, P. and Niederhoff, J., 2007). Thus, yesterday’s low-cost countries are now becoming tomorrow’s new markets and strategic locations to tap into local technologies and know-how.

However, emerging markets have their own challenges, ranging from poor physical infrastructure, inexistent distribution channels and a fragmented supplier base to a lack of transparent regulations. This can cause effective time-tested supply chain management practices that work in developed countries, to fail terribly when applied in emerging economies. Multinational firms entering these markets therefore often need to adapt their existing supply chain strategies to the uniqueness of each emerging market or develop newer ones for that environment (Swaminathan, J.M, 2007).

2.1. Impact of the financial crisis on globalized supply chains in emerging markets

The current financial crisis has led to sudden changes in emerging markets. For a little while, optimists hoped that, first, emerging markets were “de-coupled” from the economic slowdown of the West and, secondly, that they could even recover faster than the rest of the world and provide the engines that could pull the world out of the economic recession. However, evidence shows that the first statement may not be quite true. In fact, the negative impact of the global recession on emerging markets may have been so strong that it may take quite a while before they fully recover.
The notion of “decoupling” entails that emerging markets such as India and China had begun to witness sufficient growth of their middle class with sharp increase in internal demand for goods and service, which would make them less dependent on exports to the developed world and to the inflow of Foreign Direct Investments. Thus “decoupling” implied that these countries could withstand an economic recession. In fact, it was a Wall Street marketing notion that was used to promote investment funds to the BRIC-economies (Authers, J., 2009).

But if investment was based on “decoupling”, the reality is different. Stock markets are often used as indicators of the economic well-being, both in emerging and developed markets. “In November 2008, when the S&P 500 Index had fallen by 50 percent from its 2007 high, the MSCI Emerging Markets Index fell by a sharper 70 percent. Since last summer, panicked U.S. and European investors have been selling and bringing their money home, causing a steeper collapse in the relatively less liquid emerging markets”, thus Ignatius Chithelen, Managing Partner of the New York City-based investment firm Banyan Tree Capital Management. Mr. Chithelen believes that emerging markets are not de-coupled but rather "turbo-coupled" to developed economies (India Knowledge@Wharton, 2009). This seems to be true given that emerging markets’ stocks were hit harder by the economic downturn than those in developed economies: “by the end of [February 2009], emerging markets stocks had fallen 63 percent since they peaked on Halloween 2007, having been down as much as 70 percent at one point. No region had gone unscathed, although Eastern Europe, down 74.6 percent over that period, according to the MSCI indices, had fared notably worse than the rest. Developed markets have fallen by about 55 percent from their peak, which was on the same date.” (Authers, J., 2009)

Trade in emerging markets is part of a globalized supply chain, which is ultimately linked to demand in developed economies. Many emerging markets have grown through exports to the West, easy access to cheap capital and high commodity prices. These export-led economies have now taken a huge blow, as these three pillars have collapsed: exports to the West are plunging and the global credit crunch is making it even harder for emerging markets to get trade finance. The confidence among manufacturers in Brazil, Russia, India and China, has also decreased strongly as revealed by the latest KPMG/Markit Business Outlook Survey: “The severity of the current weakness in the US, Europe and Japan is clearly hitting the external sectors of the BRIC economies hard as export demand and foreign investment weakens”, thus Andrew Smith, chief economist at KPMG.

So is there still hope that emerging markets will be able to provide the engines to pull the world out of Emerging markets may be less vulnerable to the crisis for two reasons. First, whereas household and corporate credit make up more than half the GDP of developed economies, the opposite goes for emerging markets where household and corporate credit is often much less than 50 percent of the GDP
Supply Chain Management in Emerging Markets: India

(Authors J., 2009). In addition, after the financial crisis a decade ago, many emerging markets—especially Asian economies—reorganized their financial systems. Though these reforms left these emerging economies skewed towards exports, the majority of emerging Asian markets have run high trade surpluses and built-up foreign exchange reserves. All of this gives them more room for economic stimulus to jump-start the economy (The Economist, 2009a).

The second reason is that it seems like the emerging market’s attempt to set their house in order has had an effect. Indeed, it is easy to look at the economic slowdown in emerging markets as a plague, brought down on these economies from outside. However, most of them suffer two recessions: a domestic one, and an external one. Plunging domestic demand has exacerbated the effect of weaker export, especially in Asia (The Economist, 2009b). Nonetheless, the efforts of emerging market’s governments to stimulate internal demand seem to be having some effects (Authors, J., 2009).

Thus, there is reason to believe that emerging markets could follow quickly once recovery starts in the West. However, while the world is looking at emerging markets to provide the thrust to pull the economy out of the recession, emerging markets are looking out for themselves in an attempt to tackle the consequences of over-dependency on exports and to stimulate domestic demand (Marvin, D., 2008).

Authors at the Economist summarize the current situation in Emerging Markets as follows (The Economist, 2009a): “During the past five years virtually all emerging economies boomed. Now their fortunes will diverge much more. The most important factor determining how they cope with the recession in the rich world will be whether they are high savers, able to stimulate their own economies, or big borrowers. If international investors continue to shun risk and rich-world governments swamp markets with their own borrowing, it will be hard for emerging-market governments to issue bonds and for banks and firms to roll over debts. Some developing countries will therefore remain sluggish for longer than others.”

The impact of the financial crisis should not be generalized, as it affects each emerging market differently. In fact, India is the strange bird in the flight formation of the BRIC economies. It has a high public debt-to-GDP ratio and a unique growth pattern, which makes it different from other emerging markets: typically, economies grow through strong exports of manufactured goods. The manufacturing and related processes are usually labor-intensive with low usage of technology. India’s growth was mostly driven by the export of high technology processes which required skilled labor. Services have therefore become the largest constituent of the Indian economy, contributing 51 percent of GDP. IT-enabled services (ITeS) and Business Process Outsourcing (BPO) are India’s fastest growing segments (Deloitte Touche Tomatsu, 2007).
In the next section, we take a look at how the world’s second most populous country became the emerging market to reckon with that it is now. This will allow us to understand India’s current situations and get a better grasp of the key determinants of managing supply chains in India.

3. Emerging India

3.1. Economic Background
India gained independence in 1947 (Agarwal, M. and Berlage, L., 2003), after two centuries of British colonial rule. These were then followed by forty years of an economic strategy that mostly focused on reducing poverty in India and decreasing the country’s dependency on foreign trade. To achieve this goal, the Indian government established a stringent regulatory environment based on the USSR’s centralized socialistic economy. Quotas and import restrictions were implemented on goods and services that could be produced within the country; Foreign Direct Investments (FDIs) were restrained – they were considered to be a form of exploitation. This set the stage for a protectionist economy with consequences that would linger for many years to come.

It soon became clear that such a policy only allowed poor GDP growth rates. In the ‘60s and the ‘70s, the gross domestic product grew at a rate of 3.8 percent and 3 percent respectively. This rate was far from sufficient to favor economic development, especially with population growing at a rate of 2.3 percent in both decades. Prime Minister Indira Ghandi’s attempt to breach the established rule of protectionism and regulations in the ‘80s resulted in higher growth of the GDP and the GDP per capita. The promising economic outlook encouraged short-term investments and credits to the Indian government. However, the large fiscal imbalances over the ‘80s and their spill-over effect on the trade deficit, culminated in an external payment crisis. The outbreak of the Gulf War and the subsequent rise in oil prices intensified the problem even more. Foreign creditors started to withdraw their short-term investments, and the crisis grew to a point that the Central Bank had refused new credit to the Indian government, and that foreign exchange reserves were so low that the Indian government was close to bankruptcy.

The government of India, headed by P.V. Narashimaha Roa launched several reforms which pulled the Indian economy out of the crisis. These reforms were collectively referred to as the ‘liberalization of India’ in the media, with Dr. Manmohan Singh as Minister of Finances. Many of the quotas and import restrictions were lifted, the tax system was restructured, red-tape and bureaucratic delays were reduced and regulations on FDIs were relaxed. This marked the beginning of a successful era for India.
3.2. Current situation

In the past decade, India has achieved considerable GDP growth. In 2007, the GDP amounted US$ 1.1 trillion, with continued spurt in economic growth to a five-year annual average of 8.8 percent. It is the second fastest growing economy after China and one of the most promising destinations for foreign investments in the world. When measured at purchasing power parity (PPP) exchange rates, India ranks fourth next only to the U.S., China and Japan¹.

India has a population of over 1 billion individuals. Demand has been growing over the past years, stimulated by a 300 million strong middle-class with disposable income and unmet needs. In fact, after having held the first position for three years in a row, India now ranks second in A.T. Kearney’s Global Retail Development Index (GRDI) as the one of top markets in which retailers are trying to get a foothold.

The gloomy economic outlook caused by the current financial crisis did not leave India unscathed either. India’s economic growth slowed to just 5.3 percent in the last three months of 2008, a huge step backwards for an economy that averaged 9 percent annual GDP growth². The global recession hurt demand and soured business sentiment. The latest figures indicate that Indian exports have tumbled down by 33 percent in March 2009 to US$ 11.5 billion (€ 8.7 billion) from a year earlier. This represents the biggest drop on record. Gems and jewelry, pharmaceuticals and the automotive industry are the sectors that have been the most hit by the recession. The Purchasing Manager’s Index (PMI) – a composite measure of a range of industrial indicators in an economy – indicated contraction in the Indian manufacturing industry for five months in a row: from a healthy 57.8 percent in July 2008, the PMI dropped to 44.4 percent in December 2008, only to see a small upturn in January 2009 to 46.7 as a result of demand recovery in the broad sectors (Sivam, R., 2009). The Indian IT sector, which contributes 25 percent of the India’s total exports, was also hit by the credit crunch. Current IT outsourcing export’s revenue average US$47 billion a year. However, a study by the management consultancy McKinsey and Nasscom, India’s IT industry lobby, reveals that the IT outsourcing sector is facing decreasing client’s budget, pricing pressures, the threat of rising protectionism developed economies, and competition from other low cost countries such as China, the Philippines and Costa Rica. The industry, which is at the basis of India’s economic growth, might therefore miss its US$ 60 billion target for next year (Lamont, J., 2009b).

¹ Economist.com: http://www.economist.com/countries/India/profile.cfm?folder=Profile-FactSheet
² Kazmin A., “India’s GDP growth slows sharply to 5.3 %”, Financial Times, February 27, 2009
Table 1 shows the real GDP growth for India, as projected by the Economist Intelligence Unit.

<table>
<thead>
<tr>
<th>Year</th>
<th>Real GDP growth</th>
</tr>
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<tbody>
<tr>
<td>2008</td>
<td>6.0%</td>
</tr>
<tr>
<td>2009</td>
<td>5.0%</td>
</tr>
<tr>
<td>2010</td>
<td>6.4%</td>
</tr>
<tr>
<td>2011</td>
<td>8.0%</td>
</tr>
<tr>
<td>2012</td>
<td>8.1%</td>
</tr>
<tr>
<td>2013</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

Table 1: Real GDP growth estimates (Source: the Economist Intelligence Unit)

We should, however, bear in mind that exports are not the main factor that determines how exposed an economy is to the global crisis, as revealed by a comparison between India and China in the Economist (The Economist, 2009a): *India’s exports as a percentage of GDP are much smaller than China’s, so one might expect it to be less vulnerable to the effect of the financial crisis. But India financed a big share of its investments by borrowing overseas or by issuing new equity. With a high public debt-to-GDP ratio, India will have a hard time accessing funds as foreign capital dries up. In addition, the government’s huge budget deficit gives it less room for fiscal stimulus than other emerging economies with high savings.*

Despite the economic downturn, the Indian GDP is still growing at a fast pace. In fact, the manufacturing Industry grew in April for the first time in five months, as indicated by the Purchasing Manager’s Index (PMI) for India, which rose to 53.1, spurring hope that the times of tumbling exports and falling growth estimates have come to an end (Lamont, J., Hille, K. and Brown, J., 2009).

India is also still home to the world’s second largest market with consumption needs that need to be fulfilled. Some multinational corporations have entered the Indian market successfully. Other tried and failed. With the grey clouds of the financial crisis hanging over the globe, some potential entrants are getting cold feet, others are relocating activities to India or targeting the Indian market to boost revenues. Regardless of the industry or their size, or whether they are sourcing from India or trying to get their products and services to the Indian customers, all firms that are now competing successfully on the Indian market have one thing in common: they have all worked hard to learn how to navigate the complexities and the peculiarities of the Indian market.

4. India as a demand market

4.1. The market potential

India offers a tremendous market potential. It is one of the ten largest retail markets in the world and the fourth largest economy in terms of Purchasing Power Parity (PPP), ranking next only to United States, Japan and China. In addition, per capita income has more than doubled from US$ 460 in 2000-2001 to US$ 950 in 2007 thanks to strong economic growth. At the same time, consumer spending increased by 75 percent in the past four years alone (CIA, 2009). India also continues to be one of the most attractive
countries in terms of retail market opportunities, ranking second in A.T. Kearney’s 2008 Global Retail Development Index (GRDI). At $510 billion in 2008, the Indian retail market opportunity is larger than ever.

The driving force behind this growth is a burgeoning middle-class. This segment of about 40 million households earns US$ 4,000 – US$ 10,000 per household per year and it is expected to grow to 65 million households by 2010 (Biswas, R., 2006). While the Indian population in this income segment still spends nearly half their budget on basic necessities, that amount is falling every year, leaving more money for other areas of consumption. In the same vein, a study by the McKinsey Global Institute finds that the consumption pattern of the Indian consumer is rapidly shifting towards discretionary spending (McKinsey Global Institute, 2007).

Serving the massive middle class, however, requires a thorough understanding of the local consumption patterns. In addition, prices and products need to be tailored to the taste and wallets of Indian consumers (Bharadwaj, V.T. et al, 2005). We also emphasize the importance of viewing the Indian market as a subcontinent: serving India is similar to serving a widely diverse market where languages, cultures, habits and consumer preferences are different in every single Indian state. Each state therefore requires a customized approach.

Thus, when serving India, “the biggest mistake is thinking there is a single India” (Prasso, S., 2008). This statement summarizes the key challenge of serving the Indian market. It is a heterogeneous nation, composed of 28 States and 7 Union Territories, 603 districts and 5000 municipalities. Each state has its own culture, rules and regulations, languages and preferences for products and services. Thus, spending enough time and resources into understanding the needs of your target markets is crucial to serving the Indian market successfully.

4.2. Product design

A common mistake made by foreign multinational corporations is to simply make minor adjustments to products and business models that are successful in developed countries, and then replicate them in India. Such a strategy does not work over the long run. Long-term success in India requires firms to acquire a whole new set of abilities and set up new organizational structures that will foster continuous generations of innovative products and services that are tailored to the needs of Indian consumers and industrial buyers (Coleman, G., 2005).

Thus, winning in the Indian market will take more than just tweaking successful products and services of developed economies and selling them at a lower price to Indian consumers. Instead, gaining market
acceptance requires, first, deep understanding of the local needs and all the factors that influence consumer preferences, and then designing products that are customized to local habits and conditions. Setting up local market research or R&D centers has therefore often proved to be a successful strategic decision in order to provide a product or service that truly responds to the market needs (Pfeiffer, P., 2007). It should also be noted that creating awareness for your products in India and adequately managing your brands to appeal to the Indian consumer, can be a challenging endeavor as explained in Appendix 1.

The literature is rich with examples of multinational firms that failed year after year, before they finally understood the preferences of Indian consumers. Coca-cola initially failed because the brand was too American; Kellogg's failed because Indian consumers would not eat cold cereals for breakfast; early launches of microwave ovens as a product failed because they did not fit into the Indian way of cooking (Prasso, S., 2008). Many firms never recovered from their mistakes; others learned from them as shown by the following examples.

- Samsung India’s initial strategy mainly focused on providing premium products with advanced technology and a matching price tag. However, it appeared that focusing on premium customers was not the right strategy, especially in a market that is powered by volume-growth. The firm now designs products that are tailored to the needs of the mass, such as washing machines with memory back-ups and refrigerators with built-in stabilizers to compensate for the frequent power outages (Bansal, S., 2008).

- Nokia India also equipped its newest version of the Nokia1100 model mobile phone with a dust resistant keypad, an anti-slip grip, and a built-in flashlight that is mostly preferred by Indian truck drivers who have to travel the poorly lit roads by night (Bharadwaj, V.T., et al, 2005).

- Hyundai tailored its Santro to the Indian market by reducing its engine output to keep the small car’s fuel efficiency high. In addition, the spare parts were priced reasonably, and more changes were made to the offering to meet the expectation of a market that is highly sensitive to the Total Costs of Ownership. In contrast, other global car manufactures entered the market with vehicles that had low gas mileage, high repair rates and after-sales service costs (Pal Singh, S..).

In the B2B-segment, the rules of the game are the same as in the developed economy. Indian industrial buyers have high standards. During our interview, Ms. Vicky Tan, Transport and Warehousing Buyer at Solutia Singarope (interview with Ms. Vicky Tan, March 6th, 2009, teleconference call with India at
Ghent) confirmed that “Indian customers are highly demanding and very tough negotiators. They expect a strong value proposition, on-time deliveries and zero-default quality, all for a fair price… and a little extra.” What the “little extra” exactly means, seems to be a local custom that is more meant to strengthen the relationship between a supplier and his customer. Thus, if your customer orders, let’s say ten spare parts for the machines he bought from you, do throw in some extra ‘goodies’ for the other machine that you expect that it might break down soon. It is just good business practices.

Depending on the industry, however, it may sometimes be necessary to adapt your product to the local conditions. Mr. Philip de Bie, Vice-President Aftermarket and Accessories at the Picanol Group, provided us with a good example (interview with Mr. Philip de Bie, September 10th, 2008 at Ieper): “We used to move our weaving machines by railways, thinking they would be transported under the same conditions as they are in Europe. Machines were fixed tightly to the wagon surface so they wouldn’t slide back and forth during transportation. But, Indian trains stop very abruptly. So when the train stops, the lower part of the machine also stands still, while the upper part is more subject to inertia and keeps on moving. This caused quite some damages to the machines. After realizing this, we also became conscious of how important it is to adapt the machines to the Indian workspace as well.”

4.3. Pricing for India

Next to adapting designs to the local needs, it is important to ensure that your Indian consumers and industrial buyers can afford your products and services.

In the B2C-segment, the income diversity of the population is a factor that should not be overlooked. In addition, the Indian middle-income consumer still spends a larger share of his budget to necessities and has therefore much less disposable income than his counterpart in developed countries does. Many Indian workers also receive their income on a daily basis, whereas consumers in the developed economy are usually paid on a weekly, bi-weekly or monthly basis. Products that are offered on the Indian market should therefore meet the income levels and cash flows of the targeted customers. The innovative micro-selling method by Unilever illustrates this well. When Unilever started selling shampoos to the Indian market, they were bottled and priced in the same way as their offerings in developed countries were (US$ 2). However, only the higher income segments could afford an entire shampoo bottle. By reducing packaging size to single-serve sachets for 2 cents, Unilever was able to reach the mass market.
5. Sourcing from India

Sourcing is defined as the entire set of business processes required to purchase goods and services. In doing so, companies acquire raw materials, components, services, or other resources from suppliers to execute their operations (Chopra, S. and Meindl, P., 2008, p. 417). An organization typically decides to source from an international location when it adds value to its activities in terms of cost, quality, time or capability (Swaminathan, J.M., 2007).

Good sourcing decisions can lead to a significant competitive advantage. First, as firms have reduced vertical integration and as they are increasingly outsourcing the manufacturing of components, today’s share of purchased parts within the cost of goods sold (COGS) is higher than several decades ago (Chopra, S. and Meindl, P., 2008, p. 419). Good sourcing decisions can therefore result in lower costs of goods (or services) sold. Secondly, given the current financial crisis, achieving a low cost structure has become crucial to the survival of numerous firms.

Today, many multinational manufacturing firms are looking at India as a high-potential sourcing opportunity. It has a very large number of very competent, English-speaking engineers graduating each year; with labor costs that are often just a fifth of what their peers may cost in developed economies. India has also abundant natural resources such as coal, manganese, bauxite, titanium, iron, natural gas, petroleum and a total cultivable area of nearly 1.3 million square km.

However, you have answered the questions about the strategic role of your sourcing activities in India – Should India be a source for your firm’s local operations, or are you sourcing for global operations – there are some critical challenges that need to be understood when sourcing from India (Swaminathan, J.M., 2007; Moser, R. and Blome, C., 2008).

First, India is characterized by a fragmented supplier base, with a lot of intermediaries and huge capabilities differences between suppliers. The first top tier suppliers are sophisticated and they can easily compete with their peers in developed markets. They follow world-class practices, possess leading-edge technologies and are up-to-date with the latest management techniques. India has, in fact, the most firms conferred with the Deming Award outside Japan and most of these have been awarded to top tier suppliers. Tier 2 and tier 3 suppliers are often rural and lag far on the top tier.

Secondly, even the most experienced sourcing professionals will be overwhelmed by the size, the complexity and the diversity of India. “In terms of laws, taxation, languages, cultures and other elements, there exist significant differences among the various states in India. There also are differences among the various business sectors. So sourcing from India actually needs to be translated into sourcing from a particular part of the country or
Thirdly, mostly second tier suppliers – and bellow – far lag their peers in developed economies in terms of quality, delivery reliability and value added services (Swaminathan, J.M., 2007). In fact, these suppliers have no significant process or quality management, which increases the inherent risks of sourcing from India (Moser, R. and Blome, C., 2008). This is why due diligence is so important when selecting your Indian vendors: the choice to source from India should therefore be supported by due diligence, both from a strategic and from an operational point of view. Sourcing from India implies changes in the existing supply chain network: new relationships are built and linked to the existing network, while obsolete relationships must be abandoned. Analyzing a sourcing opportunity merely from a strategic point of view is bound to lead to unexpected outcomes, such as the hidden costs of matching and coordinating processes, and the resources needed to leverage your firm’s competences in order to bring your Indian suppliers up to speed. Potential of decrease in flexibility and responsiveness should also be taken into account. Thus, operational due diligence allows to truly understand the value that can be created from sourcing from Indian firms (Rothenbücher, J. and Niewiem, S., 2008).

As Mr. Tom Timmerman, First Citizen at the Belgian consultancy firm Value Republic, pointed out (interview with Mr. Tom Timmerman, April 4th, 2009 at Zwijndrecht), due diligence should be extended to corporate citizenship and social responsibility. In today’s economy, providing a good product with the right features is no longer sufficient. Brand image and the way the product is perceived by the end-users are increasingly influencing consumers’ behavior. Nike learned this lesson the hard way. The Nike swoosh has often faced criticism for use of child labor, due to production contracts that were given to companies that operate in areas where inadequate regulations and monitoring makes it hard to ascertain that child labor is not used.

When sourcing from India, it is therefore crucial to know your suppliers through and through, and to make sure that they comply with all standards and regulations. Mr. Gunjan Bagla, managing director at the Indian Amritt Ventures Inc., provides useful advice in his webinar on Profitably Sourcing Products from India at the Californian Institute of Technology (CalTech) (Bagla, G., 2008). Mr. Bagla recommends that you should visit your Indian suppliers at least once, and do it again as often as possible. Looking for suppliers via web search, e-mails and phone calls can harm your business, simply because companies that are qualified may not respond; they are often too busy chasing what they consider to be real prospects. Therefore, chances are that the response you may get, comes from a company that is too
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poorly run to get business on their own. Or it may come from some intermediary who does not own any facilities of its own, in which case you would be having no access to the actual sources. Thus, not only does your firm have the duty to uphold human rights and (inter)national labor standards in its core activities, it should monitor the corporate responsibility in all the operations throughout the supply chain, especially those that take place in low cost countries. For instance, India has the *Factories Act* which regulates the labor standards in India. However, corruption hinders the system from working adequately (Stigzelius, I. & Mark-Herbert, C., 2009).

Aiming for global standards and compliance with the developed codes of conduct can lead to ‘extra costs’ – such as higher wages, limited use of overtime work and the inherent inflexibility that standards commonly bring along. However, it also improves your brand image, spurs sales and delivers a clear message to all your suppliers and business partners about the importance you give to social responsibility (Stigzelius, I. and Mark-Herbert, C., 2009).

Indian manufacturing firms have also been making significant efforts to change the country’s reputation as a low-quality manufacturing center. In fact, they are looking to differentiate themselves from China by focusing on skill-intensive design and manufacturing outsourcing (Tohamy, N. 2009). On the topic of quality issues, Mr. Bagla advises to educate your supplier about your quality expectations, and set mutual incentives to meet them. Mr. Timmerman, however, recommends making sure that you have quality managers locally. These can be your own employees or specialized agencies such as SGS (interview with Mr. Tom Timmerman, April 4th, 2009 at Zwijndrecht).

A fourth challenge when sourcing from India – and the biggest one according to Moser, R. and Blome, C. (2008) – is the lack of local sourcing talent. These local professionals can bring two crucial things to the table that expatriates cannot: the local *knowledge* about market conditions, prices and actual cost, and the *network* through which this knowledge can be gained and accumulated.

Finally, the logistics challenges in India, as well as other factors can disrupt your sourcing activities. These other factors include geopolitical instability and the climate conditions such as the monsoons season. In the next section, we discuss the logistics challenges at lengths. It goes without saying that risk mitigation strategies such as dual sourcing and flexible transportation capabilities should always be part of each scenario analysis.

Conclusively, sourcing from India offers many opportunities. However, the challenges are also there. They can be both external (logistics challenges, lack of quality and transparency at the supplier’s end,) and internal to the firm (lack of knowledge about India at the corporate level, shortage of local sourcing...
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talent). However, these obstacles can be overcome, though it often requires creative thinking as the story of AMUL illustrates.

The story of AMUL

The Kaira District Milk Cooperative Union – better know as AMUL – has succeeded in removing intermediaries from the procurement and distribution process by encouraging consolidation of the supplier base. Initially, the small farmers from India depended on intermediaries to transport their milk to the local market. These intermediaries were often wealthier villagers who owned a truck. Given their importance, they would also charge higher margins for the transportation without adding much value to the network, and leaving the small farmer with very little profit. AMUL encouraged small farmers in each village to form cooperatives where all the milk would be collected and then picked up by one of AMUL’s trucks. This way, AMUL gets the necessary milk supply for the production of dairy products, while farmers get higher margins.


6. The logistics challenges of doing business in India

Even with the opportunities that India has to offer, the existing logistics challenges make these opportunities seem out of reach. The Indian industry spends an exceptionally high amount of its GDP on logistics. While Japan, the United States and Europe spend 11, 10 and 9 percent respectively, India’s logistics cost has been estimated to be around 14 percent of its GDP – out of which 40 percent can be attributed to transportation alone. In addition, almost 22 percent of India’s total sales is tied up in inventories in the supply chain network nationwide (Sahay, B.S and Mohan Ramneesh, 2003; Kilgore, M. et al, 2007). Table 2 compares Indian logistics costs to those of China and the U.S.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>US</th>
<th>China</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistic costs as a percentage of final products</td>
<td>8%</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Logistics contribution as a percentage of the GDP</td>
<td>10%</td>
<td>21%</td>
<td>14%</td>
</tr>
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Table 2: Logistics costs in India (Source: Flanders Investments & Trade)

The under-developed infrastructure for transportation, power and water constitutes one of India’s main obstacles to even faster economic growth, and it is being strained beyond its capacity. The high national output has been putting tremendous stress on the Indian physical (roads, railways, ports, power, etc.), digital (telecommunications, broadband networks), service and human infrastructure of logistics.
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(Chandra, P. and Jain, N., 2007). In addition, poor management of the existing logistics infrastructure is still a major challenge to achieving supply chain excellence in the country. “From unreliable electricity supplies, to dilapidated roads, to congested seaports and airports, India’s infrastructure preparedness pales in comparison to China’s well-run, foreign-investment-fed industrial centers like Guangzhou. In fact, respondents identified immature physical infrastructure as the primary risk associated with operating in India”, states the latest AMR Research’s quarterly supply chain risks survey (Tohamy, N., 2009).

On top of infrastructural and management challenges, companies in many sectors still have to contend with unclear, ever-changing – and sometimes anti-business – government regulations, a very complex tax system, bureaucracy and red-tape (Goddard, L., 2007). For instance, multi-modal transportation requires the approval of different government agencies and ministries, which are very poorly coordinated. In addition, due to the complex structure of the Indian taxation system, many organizations have to work with supply chain models that are highly inefficient by Western standards. This is the case for Agfa Healthcare, which operates up to twelve warehouses in India in order to minimize the burden of the inter-state tax. A hub-and-spoke network with one central distribution center is just too expensive: it comes with heavy fiscal burdens and high transportation costs. All of these issues make India a country in which, at the end of the day, managing logistical operations becomes a highly stressful undertaking.

In the next section, we discuss the major hurdles facing the Indian logistics industry. According to Olsson, J. (2005), these obstacles can be subdivided into three categories:

- The inadequate infrastructure,
- Insufficient knowledge and exposure of logistics solution providers
- Ineffective usage of information technology.

6.1. Inadequate infrastructure

Infrastructure development is the greatest challenge facing India if it is to sustain high levels of economic growth. India’s position on the world trade map has been growing steadily over the past years. However, the physical infrastructure has not been able to keep up with the country’s economic expansion. Transported volumes are climbing rapidly, demand for energy has increased and the telecommunication network is reaching its maximum capacity.

We asked Mr. D. Panchal, senior partner at Deloitte Mumbai, whether he considered the complex regulatory and taxation system to be a bigger impediment to supply chains than the deficient infrastructure. Or is it the other way around? Mr. Panchal stated that “the complexity of the taxation system
is something that can be dealt with just by simplifying Indian policies. And the Indian government is already working towards simplification of its regulations. However, the infrastructure problem is a much bigger hurdle that will take more time to solve, especially in these challenging times of credit crunch and decreased FDI inflows to the country” (interview with Mr. D. Panchal, March 3rd, 2009 at Diegem).

The key infrastructural challenges that we discuss involve the active role of roads and the Indian road freight industry, railways, ports and shipping, airports and the Indian air freight industry. These, in turn, are supported by power, energy and the ICT-infrastructure. Although the Indian government has been taking steps to improving the country’s physical infrastructure, there is still much ground left to cover. Many years of underinvestment are now taking their toll on the country’s competitiveness as India still compares unfavorably to other emerging economies. In addition, structural inefficiencies in the financial system, coupled with the global credit crunch, have left the country with a shortfall of US$ 1.9 billion in financing key infrastructure project, as a recent study by McKinsey reveals (Lamont, J., 2009b).

### 6.1.1. Roads and the road freight industry

Figure 1 shows the relative value of transportation, compared to other element of the logistics cost in India. Transportation is an essential sub-process of supply chain management. In fact, transportation management is the backbone of the entire supply chain, as it makes it possible to have the right product in the right quantity and the right condition, at the right place, at the right time, for the right customer at the right cost (Vijayaraghavan, T.A.S., 2001). Yet, 90 percent of Indian roads are structurally unsuitable for loaded trucks.

![Figure 1: Elements of the logistics costs in India (Source: Sanyal S., 2006)](image)

Roads are the lifeline of an economy. In India, road transportation accounts for 65 percent of freight traffic and 85 percent of passenger traffic. India has the second largest road network of the world: it is nearly twice as long as China’s and it ranks second only next to the USA’s, which has a total road
network of 6.4 million km. Yet, of India’s 3.3 million km, only 2 percent are express highways and less than half the roads are paved.

Off the highways, transportation links become very scarce to non-existent. Firms can only use trucks that are smaller than 6 meters (2-axle rigid trucks and smaller). Access to the interior of the mainland is limited, since only 48 percent of the 55,000 villages are connected with roads (Rastogi, A., 2006). Reaching consumer in rural India then becomes a challenge, especially given that this is were the next market potential is expect to come from. So how does a firm get its product to the remote Indian villages?, we asked Mr. D. Panchal, senior partner at Deloitte Mumbai: “Through a cascade system,” he answered, “which implies that firms deliver their goods to large distributors, who in turn break bulk and redistribute it to smaller stores” (interview with Mr. D. Panchal, March 3rd, 2009 at Diegem).

The Indian road network is not only in very poor shape; it has also reached its designated capacity. This ultimately results in very frequent congestions. The average speed on Indian highways is 30 km per hour, which is three times lower than the average speed on highways in developed countries. The high average daily traffic volumes indicate the urgent need for improvement of the road infrastructure and enhancement of the highways capacity. While the designated capacity is 15,000 Passenger Car Units (PCUs) per day, Indian highways record an average daily traffic volume of 39,000 PCUs (Biswas, R., 2006). Some Indian States have tried to manage road congestions by introducing ‘truck curfews’, which are specific hours during which trucks are allowed to enter the city limits. Once a vehicle misses the curfews, however, it is held alongside the roads until the next day when it will get the chance to enter the city limits (Drickhamer, D., 2007). Such policies only lead to more delays (Sahay, B.S and Mohan, R., 2003).

To meet the infrastructural need, the National Highways Authority of India (NHAI) launched the National Highways Development Project. This project has three phases, which are meant to upgrade and widen the country’s highway network. The first phase incorporates the development of the Golden Quadrilateral connecting Delhi, Mumbai, Chennai and Kolkata. The second phase involves the development of the North-South and East-West links, which runs from Srinagar to Kanyakumari and from Porbunder to Silchar. Phase III consists of the upgrade of existing national highways (Rastogi, A., 2006).

The NHAI is also investing in the development of an Intelligent Transportation System (ITS) in order to increase the effectiveness of transport services on the highway and automate many processes such as toll collection (Chandra, P. and Jain, N., 2007). Given the important role of road transportation in supply chain efficiency, the ITS is expected to add significant value to logistics operations. Successful
implementation of such a project will lead to better management of road infrastructure and transportation: traffic congestions will be significantly reduced, the average speed on Indian roads will increase, the average wait time on tollbooths will decrease, better fleet management and traceability of trucks will become possible, and information flow will improve.

The Indian Road Freight Industry is highly fragmented and largely unorganized with many small operators. The industry is deregulated and its structure consists of transporters, broker agents and small operators – these are truck owners with a license to operate and a small fleet of up to five vehicles. The World Bank report titled *Indian Road Transport Service Efficiency Study* finds the Indian road freight industry structure to be an effective one, given the very low freight rates and despite the deficient infrastructure. In fact, “India has achieved a highly competitive, low-cost road freight transport industry for basic services, with highway freight rates among the lowest in the world”, the report states. The key findings of the study are summarized hereafter:

### INDIA ROAD TRANSPORT EFFICIENCY STUDY: Summary of key findings

- India has achieved a highly competitive, low-cost road freight transport industry for basic services, with highway freight rates among the lowest in the world.
- In fact, trucking freight rates are so low that the industry is suffering an intense period of low profits or even losses.
- While the industry delivers very low freight rates, service quality is poor, with low reliability and transit times nearly double that of developed countries.
- Equipment utilization rates for the Indian trucking fleet, which average 60,000 km to 100,000 km per truck-year, are less than a quarter of those in developed economy.
- Truck delays at checkpoints have been estimated to cost the economy anywhere between INR 9 billion (EUR 135 million) and INR 23 billion (EUR 344.5 million) a year in lost truck operating hours.\(^3\)
- The trucking industry today uses mainly 2- and 3-axle rigid trucks with a small sleeper cab and an open top freight box of 30 to 40 cubic meters. Given the competitive market conditions, it can be inferred that the existing fleet mix is overall the most economical given the array of vehicles currently available to the Indian trucking industry.
- Introduction of tractor-trailer multi-axle vehicles would reduce not only transport costs but also road damage caused by the higher axle-loadings of 2- and 3-axle rigid trucks.
- The incentives proposed for introduction of multi-axle trucks include reduced tax and highway toll rates in recognition of the lower costs these trucks impose on public infrastructure.

\(^{3}\) 1 Indian Rupee (INR) = 0.015 EUR (average per May 15th, 2009)
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- Road Safety is a major concern for India, with fatality rates about ten times those in the developed economies, and trucks are responsible for a disproportionate share of these accidents. The annual economic loss from road accidents has been estimated to exceed INR 550 billion (EUR 8.2 billion), with a majority attributable to the truck fleet.

    Source: India Road Transport Service Efficiency (2001), World Bank

Thus, the industry is market-driven, competition is fierce, operational costs are high and the margins are thin. The poor road conditions have a negative effect on vehicle lifespan, which significantly increases operating costs for the small truck owner (Kilgore, M. et al, 2007). In addition, the many check posts and toll points lead to massive delays and increase total costs of transportation with “facilitation payments” and bribes in order to speed up the process.

The importance of intermediaries in the structure of the road freight industry exacerbates the erosion of margins even more, as explained by the Economist Intelligence Unit: “Vehicle ownership is firmly in the hands of individual truck owners, of whom 67 percent have a fleet of less than five vehicles. As the average size of the fleet is small, individual truck owners are unable to directly contract vehicles to companies. Freight consolidators and brokers therefore provide truck owners with consignments, and take a commission in the process. Truck owners lack the bargaining power to negotiate prices and thus get minimum profit. The increasing cost of input and lower profits ultimately affects the ability of truck owners to upgrade and expand their fleet. (The Economist Intelligence Unit, 2006)”

So all this ultimately leaves the small truck operator with too little profit to re-invest in better transportation assets. To compensate for the low margins, small fleet operators pursue a low cost structure by postponing equipment maintenance and expansion projects, and by limiting their investments in technology. Using unskilled low-cost labor and loading trucks beyond their capacity to maximize cargo volume are often used practices to minimize operating costs. This, however, influences supply chains negatively by increasing transportation risks such as frequent breakdowns, delays and damage to transported cargo.

Although the World Bank’s report found the structure of the road freight industry to be effective within the Indian context, we believe that there is still much room left for improvement. The cost of coordinating the large fragmented base of logistics services suppliers is very high. In addition intermediaries, such as freight consolidators and brokers, still play too big a role in the industry structure without adding much value. As India competes more and more on a global scale, the current industry structure is bound to place the country in an even more disadvantageous position.
Fortunately, market forces are gradually taking over, with noticeable consolidation taking place in the sector. As current trend shows, the entry of global logistics services providers on the Indian market has compelled small truck owners to organize themselves in cooperatives in order to stay competitive. Consolidation of the industry is also taking place through mergers and acquisition of logistics services suppliers, as we will discuss in greater detail in section 6.2 on the 3PL market.

However, as Ms. Vicky Tan, (interview with Ms. Vicky Tan, March 6th, 2009, teleconference call with India at Ghent) transport and warehousing buyer at Solutia Singapore, pointed out during our interview, it should be noted that, next to the advantages of flexibility and low costs, other factors must be taken in account when choosing the appropriate mode for moving cargo throughout India. For instance, whereas customers in developed countries place a high premium on short lead-times, the Indian customers are often willing to trade a short lead-time for lower prices, depending on the urgency of the delivery and the lead-time sensitivity of the industry. This should evidently be weighed against the required levels of inventory.

6.1.2. The railways network

Indian Railways (IR) is the second largest railways network in the world, spreading over 110,000 km of tracks and covering almost 7,000 stations. Unlike the road freight industry, IR is still under single management of the Indian government. Eight major commodities contribute 89 percent of IR’s freight transportation – i.e. coal, fertilizer, cement, petroleum products, food grain, finished steel, iron ore and raw material to steel plant. The remainder consists of other commodity moving in bulk and in container.

Rail transportation offers the advantages of containerization facility and ease in transporting ship containers and wooden crates (Chandra, P. and Jain, N., 2007). However, domestic movement of containers by rail is a monopoly of the Container Corporation of India (CONCOR), a subsidiary of Indian Railways. Third-party logistics providers therefore have to rely on CONCOR for containerized transportation of goods within the country. The problem is that CONCOR is not able to manage the growing freight volumes: next to charging monopoly prices, CONCOR lacks the necessary funding to invest in much needed infrastructure such as rakes and inland container depots to cover the demand. This ultimately results in higher transaction costs for the other logistics services providers (Mitra, S., 2006).

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4 This paragraph is mostly based on information found on [http://www.indianrail.gov.in](http://www.indianrail.gov.in)
For the past decade Indian Railways has been losing market share of its freight business to roadways and low cost airlines. Two main reasons underlie this continual slide of IR’s market share: first, the inability of the railways system to keep up with the traffic growth of an expanding economy and, secondly, qualitative undersupply.

Due to capacity constraints and a lack of funding to invest in extra capacity, IR’s management chose to focus on bulk cargo for the core industries, losing its customers in the high value non-bulk sectors in the process. The latter, however, often recorded much higher growth rates. In addition, the skewed Indian policy of subsidizing passenger traffic and an increase in freight rates are driving away even some of the long distance bulk traffic from the railways to roadways (Vijayaraghavan, T.A.S., 2001). Railways transport costs in India are, in fact, three times those in China according to a special MorganStanley report on India and China (Xie, A. and Ahya, C., 2004). Furthermore, the slow average speed of 25 km per hour for freight movement, the low average wagon turnaround time and the insufficient connectivity of the railways networks indicate logistics inefficiencies within IR (Sahay, B.S and Mohan, R, 2003).

Table 3 illustrates the lower efficiency of the Indian railways network compared to that of developed economies.

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>INDIA</th>
<th>AUSTRALIA/EUROPE/US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average speed (kmph)</td>
<td>23.3</td>
<td>100</td>
</tr>
<tr>
<td>Capacity (TEUs)</td>
<td>90</td>
<td>150</td>
</tr>
<tr>
<td>Axle Load of Wagons (Tons)</td>
<td>22</td>
<td>30</td>
</tr>
<tr>
<td>Load capacity per wagon (Ton)</td>
<td>88</td>
<td>120</td>
</tr>
<tr>
<td>Pay Load: tare weight of wagon</td>
<td>2 – 2.6</td>
<td>4.5 – 5.5</td>
</tr>
</tbody>
</table>

Thus Indian Railway carries 450 kg of wagons dead weight for every 1000 kg of freight carried compared to 170 kg in the US

Table 3: Indian railways network (Source: Vaidyanathan G., 2007)

To cope with this new challenge and to recapture the market share of freight business from the trucking industry and low cost airlines, Indian Railways has been gradually looking into new ways to improve its performance through better assets utilization and investments in infrastructure, enhanced marketing initiatives, internal reorganization and gradual liberalization of the industry.

First, the continual increase in asset utilization has been achieved mostly by implementing new technologies and operational improvements. Indian Railways recently reported increased operational performance thanks to the Freight Operating Information System. The system gives freight customers access to information on the current state of their consignments in transit, which allows them to plan
their inventory and manage logistics operations more effectively. It also improves internal and external flow of information, thus allowing better management of rakes and faster billing and payment transactions.

Secondly, investments in infrastructure have been approved by the Indian government, such as the two Dedicated Freight Corridors that are meant to help increase freight movement speed up to 100 km per hour and to provide India with the much needed rail infrastructure to sustain its high economic growth. These freight corridors will run along the Golden Quadrilateral connecting the four metro cities of Delhi, Kolkata, Mumbai and Chennai, which is already saturated (Rastogi, A., 2006).

Third, enhanced marketing initiatives include competitive quotes, provision of door-to-door services, the introduction of multi-point trainloads and stronger focus on movement of containerized cargo.

Fourth, IR has undergone internal reorganization, which includes decentralization of power, staff reduction, and focusing business units on clear market segments such CONCOR that is focused on national and international movement of containers.

Finally, the industry is undergoing gradual liberalization, by involving the private sector through Private Public Partnerships and licensing to private players. The entry of private players is meant to increase competition and efficiency in the sector, and eliminate both the price distortions that have been created by CONCOR and the inadequate subsidizing policy. For example, IR is collaborating with bulk users of freight transportation in a Public Private Partnership to expand the railway infrastructure throughout the country. Also, private players have been given licenses to operate in multi-modal transport, which had been a monopoly of CONCOR so far (Acharya, R.C., 2006). A few areas where the private sector can explore new opportunities include the construction of Freight Corridors, the construction of logistics parks and warehouses, cargo handling at terminals, port connectivity works, modernization and the upgrade of passenger terminals, hospitality and catering, commercial utilization of surplus land where the private sector can invest in public utilities such as food plazas, cyber cafés, etc.

Thus, Indian Railways would focus on their core competencies of moving goods and passengers and hiving off non-core businesses to the private sector. Major players such as Reliance Industries, P&O ports, APL Logistics, Maersk, Central Warehousing Corporation (CWC) and Adani Logistics have shown interest in this sector.
6.1.3. Indian ports and shipping

India has a coastline that spans 7,600 km, and consists of 12 major ports and 185 minor and intermediate ports. Yet, the country’s ports system is not well utilized: many of these 185 minor and intermediate ports are just "notified", with little or no cargo handling actually taking place, while 2 of the 12 major ports handle 70 percent of the entire seaborne cargo to India (Kilgore, M. et al, 2007).

With the liberalization of the Indian economy in 1991, trade barriers have been gradually lifted. This has led to a boom of the country’s international trade, 95 percent of which is seaborne. The change in consumption patterns on the Indian market has also boosted the demand for containerized transportation of goods, which had been growing at a remarkable compounded annual growth rate of 17.2 percent (Rastogi, A., 2006).

However, a 2005 study of all Indian major ports predicted a continual capacity shortfall for container traffic at India's major ports. Back then, the available capacity was estimated to average 4 million TEUs, while traffic handled had already surpassed the available capacity, leading to congestions in most container terminals at these major ports. Based on the impending projects to increase container terminals capacity at some of India's major seaports over the next 5 years, the capacity for container traffic at major Indian ports was projected to reach 8 million TEUs at best by 2010, while traffic would have reached 8.66 million. This still indicated a shortfall (Paul, J., 2005).

According to the latest worldwide report by Drewry Shipping Consultants Ltd., a U.K.-based independent maritime adviser, the year-on-year growth of container volumes at India's major ports dropped from +25 percent in February 2008 to -25 percent in February 2009. Meanwhile, decreased FDIs inflows to the country and structural inefficiencies in India’s financial system have left the government with a shortfall of nearly US$ 2 billion in financing key infrastructure development projects.

Where do Indian ports rank in comparison to the world’s top 30 seaports? The only Indian port that appears in the list is the Jawaharlal Nerhu Port Trust (J.N.P.T.) in New Mumbai. It ranks 25th among the world’s busiest ports in terms of container traffic, as illustrated by Figure 2. However, due to infrastructure constraints, high demand, a lack of storage space and the outdated handling equipment,

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5 The classification “major”, “intermediate” and “minor” is mostly for administrative purposes and less linked with the handled volume: the major ports fall under Central Government jurisdiction, whereas the intermediate and minor ports are administered by the coastal State Governments of West Bengal, Orissa, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Goa, Maharashtra and Gujarat.

6 Twenty-foot Equivalent Unit (often TEU or teu) is an inexact unit of cargo capacity often used to describe the capacity of container ships and container terminals. It is based on the volume of a 20-foot long shipping container, a standard-sized metal box which can be easily transferred between different modes of transportation, such as ships, trains and trucks. (source: Wikipedia).
Indian ports rank poorly compared to the competition in the region. Some examples and key metrics illustrate this well: first, the average pre-berthing time at major Indian ports has gone up from 11.26 hours in 2007-2008, compared to 8.43 hours in 2006-2007. This represents a 34 percent increase over one year, leading to total freight charges going up by 2 to 3 percent since shipping companies have to pay demurrage charges. The increased pre-berthing time reveals growing congestion in Indian ports (Bijith, R., 2008). In addition, the turnaround time in major Indian ports is 1.77 days, compared to 0.5 days in Singapore. The average container dwell time at major ports is 1.88 days for imports and 3.78 days for exports. These two metrics demonstrate the lack of appropriate handling equipment and ICT to support the operations in Indian seaports.

![Figure 2: India’s J.N.P.T compared to some of the world’s busiest sea ports in 1,000 TEUs (Source: http://www.hafen-hamburg.de)](image)

Moreover, frequent labor issues and strikes at major Indian ports are also known to increase pre-berthing times (Bijith, R., 2008). Furthermore, even within its largest ports, India cannot support 6,000 TEU containerships, which make up 25 percent of today’s shipping volume (Kilgore, M. et al., 2007). A comparative study by Drewry Shipping Consultants Ltd. indicates that the use of a 10,000 TEU vessel as compared to a 4,000 TEU ship can reduce costs by 37 percent. Furthermore, the insufficient usage of communication technologies at Indian ports leads to longer lead times. Indian harbors are only

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7 In commercial shipping, **demurrage** is an ancillary cost that represents liquidated damages for delays. It occurs when the vessel is prevented from loading or discharging cargo within the stipulated laytime (Source: Wikipedia).

8 Cargo- and container-related **dwell time** refers to the time cargo and containers stay in a terminal’s in-transit storage area while awaiting shipment by vessels in the case of exports or evacuation by rail or road for import.
equipped to provide partial Electronic Data Interchange (EDI) services. Shipping to India therefore involves a large amount of paperwork, which is one of the reasons why customs clearance takes 6 days on average – depending on the ports, the goods shipped and other factors – while it only takes 1 or 2 days in Belgium. Appendix II provides more information about the traffic handled by each of the major Indian ports, and which of the ports are specialized in handling which types of cargo.

Given its privileged geographic position, India clearly plays as significant role as an international maritime transportation hub. Further investments in infrastructure, equipment and information and communication technologies would increase its competitive position as stated by Deshmukh, A. (2005): “By developing a large number of efficient ports, [India] can become the largest international hub to deliver goods from West to the East and vice-versa. Doing so, it can provide an essential service that will benefit the state for further economic development and can also earn substantial revenue for the State/Country.”

To remedy these urgent problems, the Indian government launched the National Maritime Development Program as of 2005. The program aims to increase the capacity and the efficiency of seaports by actively involving the private sector. The participation of the private sector in creating and operating facilities at major ports is on the basis of open competitive bidding, using Build-Transfer-Operate Models with the assets going back to the Port after the concession period. The concession period can be of thirty years at most (Deshmukh, A., 2005).

Many areas of privatization at Indian ports have been identified. These include leasing out existing assets of the Port, the creation of additional assets, leasing of equipment for port handling and leasing of floating crafts from the private sector and captive facilities for Port based industries. However, according to U.S.-India Business Council (USBIC) president Ron Somers, viable models that demonstrate the returns on investments still need to be developed for these public-private partnerships (Burnson, P., 2009).

Furthermore, the Indian Ports Policy Reform is meant to develop more capacity at Indian ports and increase their efficiency. The policy reform features initiatives such as streamlining the processes to speed up transportation and relevant documentation; fiscal incentives to encourage fleet acquisition, modernization and growth; new projects to provide better connectivity between eastern and western coasts without going to Sri Lanka, and to develop inland water transportation; labor reforms; higher budgetary support given to road connectivity and decongestion of container traffic inside ports through additional railway lines and the construction of transshipment hubs and new container terminals.
6.1.4. Airports and air freight transportation

India has 450 airports, 11 of which are international. International air freight transportation only accounts for 5 percent, which is very small compared to other transport modes. However, it has been growing steadily over the past years. Recently, the Airports Authority of India reported that cargo movements reached 1.4 million tons in 2006, two-thirds of which was international (Neelam, M., 2007). India’s economy is booming, and so is the demand of global shippers. To meet the needs of their customers, carriers are rapidly expanding and investing in equipment and infrastructure. In addition, with “Open Skies”-agreements being signed between India and its trade partners, many private airlines are joining the market (Rastogi, A., 2007). FedEx express in one of the carriers taking advantage of the “Open Skies”-agreement between Indian and the U.S. “FedEx has expanded its market position by increasing flight frequencies in and out of India and improving connectivity between key export centers and regional hubs, resulting in improved service, especially for customers in Delhi and north India. The company also added capacity to move shipments of greater weight and size to key global markets within 24 to 48 hours” (Burnson, P., 2009).

On the regulatory sides, some promising reforms are on the agenda. In 2006, the Indian Civil Aviation ministry presented a draft of the National Civil Aviation Policy (NCAP), which aims to allow more FDIs in the sectors and enhancing air connectivity across regions. The NCAP also encourages the promotion of regional airlines and move towards an ‘Open Sky’ (Rastogi, A., 2007). In addition, two of India’s major airports, Delhi and Mumbai, were privatized. The privatization deals include provisions for better management, infrastructure development and expansion of the airports.

Notwithstanding these developments, government regulations are still an obstacle to the growth of the airfreight industry. The government still has several monopolies, such as a postal monopoly on documents of 300 gram and less. In addition, a high service tax is still imposed on service providers and FDIs in the airfreight sector are still limited to 49 percent ownership in a company (Neelham, M., 2007).

6.1.5. Power and Energy

According to Xie, A. and Ahya, C. (2004), electric power is the number one infrastructural bottleneck in India. As illustrated by Table 4, the shortfall in electric power supper in ’08-’09 is estimated at 11 percent, up from a 9 percent shortage in 2003.
Supply Chain Management in Emerging Markets: India

<table>
<thead>
<tr>
<th>Region</th>
<th>Energy (MU) Requirements</th>
<th>Deficit (%)</th>
<th>Peak Demand (MW)</th>
<th>Deficit (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern</td>
<td>171079</td>
<td>-10,4</td>
<td>33034</td>
<td>-10,7</td>
</tr>
<tr>
<td>Western</td>
<td>188943</td>
<td>-16</td>
<td>37240</td>
<td>-20,5</td>
</tr>
<tr>
<td>Southern</td>
<td>150333</td>
<td>-7,4</td>
<td>27184</td>
<td>-7,9</td>
</tr>
<tr>
<td>Eastern</td>
<td>61398</td>
<td>-4,9</td>
<td>12901</td>
<td>-9,6</td>
</tr>
<tr>
<td>North Eastern</td>
<td>7328</td>
<td>-14,2</td>
<td>1820</td>
<td>-25,4</td>
</tr>
<tr>
<td>All India</td>
<td>579081</td>
<td>-10,9</td>
<td>109809</td>
<td>-13,8</td>
</tr>
</tbody>
</table>

Table 4: Supply position 2008-2009 (Source: Central Electricity Authority, Indian Ministry of Power)

Power outages have become routine in the day-to-day business life of India. In fact, in almost all the Indian states, there are electric power cuts of 2-6 hours per day. Consequences for supply chains are far-reaching. For example, the pharmaceutical and food processing industries lose millions in terms of perishables such as in-process products and inventories; and IT-firms lose valuable data and hundreds of billable hours. Sudden halt of production lines in the manufacturing industry causes loss of materials and production, breakdowns of machinery, idle capacity and time to re-start, flaws in the finished goods and failure to meet customer expectation.

The frequency of power outages in India has caused firms to perceive them as minor annoyances. However, as the examples above illustrate, power outages can cost a firm a significant share of its profit and even knock companies out of business. This emphasizes the importance of investing in back-up solutions such as power generators, frequent back-ups of key data, working with laptops instead of desktops, etc. Indian firms are now accustomed to this best practice. In addition, the implementation of processes to predict power outages and solve disruption caused by power cuts is necessary for many industries.

Apart from poor supply, electric power tariffs in India rank among the highest in the world. This is linked to the high inefficiency of the sector. About 20 percent of the electricity that is generated in the country is distributed to farmers at insignificant charges\(^9\), while another 40 percent is lost in transmission and distribution. Thus, some 60 percent of the total yields virtually no revenues (According to Xie, A. and Ahya, C., 2004). Both the technical and commercial aspects are problematic to the profitability and viability of the State Utilities. They therefore jeopardize impending improvement projects.

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\(^9\) Note: it is important to notice that, given the industry structure, the Indian electricity sector has to serve both commercial and social objectives.
The government still controls the Indian energy sector, with 52.5 percent of the capacity belonging to the State governments, 34.5 percent to the Central government and only 13.5 percent to the Private sector. To remedy the many industry problems, the state-owned National Thermal Power Corporation (NTPC) has been working together with private partners to increase supply of electric power, through efficient generation and distribution operations. To this purpose, the power sector has been reformed and funds are being invested into building new power plants and introducing both nuclear and renewable energy throughout the country.

The Government of India has set out the ambitious mission of “Power for all by 2012”, which aims to achieve an installed generation capacity of at least 200,000 MW by 2012 – which represents a 30 percent increase from the present level of 144,564.97 MW. Power requirements are projected to double to 400,000 MW by 2020. The main objectives are to provide sufficient reliable and quality power to foster the current GDP growth rate. In addition, the project is expected to allow optimum power cost, improve the commercial viability of the power industry and provide power to all Indians. The “Power for all by 2012” strategies range from regulatory reforms to more investments in the Transmission and Distribution network.

6.2. Insufficient knowledge and under-exposure of 3PL/LSP

Outsourcing logistic processes offers many advantages, especially for a corporation that is expanding overseas. When entering the Indian market, your firm may not be familiar with the tax system, local regulations, import/export policies and the local culture. In addition, building your own logistics and distribution network from scratch would be a highly resource-consuming endeavor, given the huge diversity in geographic conditions, in the state of the infrastructure and in consumer habits. Integrated end-to-end logistics operations that are managed by an experienced 3PL provider, who has long been operating in India, could help your organization achieve its goals more effectively. It would also allow your firm to focus on its core competencies, reduce costs, improve its service level and release capital that can then be used more productively (Mitra, S., 2006). A 3PL provider, who offers an extensive array of logistics solutions can relieve your firm from huge logistics costs and alleviate the hassle of dealing with several incoherent logistics services providers (LSP).

Yet, the logistics sector in India that provides these services is highly fragmented and underdeveloped. The road freight transportation sector is dominated by small fleet operators and individual truckers, the

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10 Source: [http://www.powermin.nic.in/indian_electricity_scenario/introduction.htm](http://www.powermin.nic.in/indian_electricity_scenario/introduction.htm)
11 Source: [http://www.powermin.nic.in/indian_electricity_scenario/power_for_all_target.htm](http://www.powermin.nic.in/indian_electricity_scenario/power_for_all_target.htm)
freight forwarding services segment also consists of thousand small customs brokers and clearing & forwarding agents. Similarly, there are many small warehousing services and providers of Management Information Systems (Manda, S., 2006).

### 6.2.1. Challenges to the growth of the 3PL/LSP market

The concept of a single LSP managing a firm’s entire logistics process is still nascent in India. It is also following the same pattern as that of developed industries a few decades ago: at the beginning, 3PL providers offered only basic logistics services such as transportation and warehousing. It took a while before they could manage their clients’ entire logistics process and even offer end-to-end supply chain solutions as 4PL services providers. India is also on its way, but the road ahead is still long.

The first challenge to the growth of the Indian 3PL market is the limited services offered by the logistics firms (Mitra, S., 2006). On top of the list of provided services stand Warehousing, Full Truck Load and Freight Forwarding services, as illustrated by Figure 3. According to a report by real estate consultancy Cushman & Wakefield et al., warehousing accounts for about 20 percent of the total Indian logistics industry. Its turnover was US$ 20 billion in 2007-08. The boom in commodities and retail is expected to boost Indian warehousing, which is projected to grow by 35 to 40 percent annually, reaching a US$55 billion turnover by 2010. At that time, India will have more than 45 million square feet of warehousing space and over a hundred logistics parks (Commodityonline.com, 2008).

![Figure 3: Services offered by at least 50% of the respondents (Source: Mitra, S., 2006)](image-url)
The number of logistics services providers who offer an extensive array of value-added services and customized solutions to its customers, is limited. This requires each customer to rely on more than one logistics services provider to satisfy their outsourcing needs. This increases the complexity of managing the logistics process, with higher coordination costs as a result. In addition, it significantly diminishes the opportunities for building and sustaining long-term contracts with the logistics services provider.

Figure 4 shows the value chain coverage of the five largest Indian logistics services providers. It illustrates that even India’s largest 3PL providers still cover a small part of a firm’s entire value chain. To solve this problem, some Indian logistics services providers are joining strategic alliances in order to provide end-to-end solutions to their customers.

In terms of geographic presence, the Indian 3PL sector can be divided into three segments: National major 3PL providers with nationwide presence, Regional 3PL providers with strong presence in one or two regions and Small remote companies. Multinational companies in all sectors are still the main users of 3PL services. Domestic major firms in leading industries have also started to outsource their basic logistics functions, while a large number of SMEs are also gearing up to use 3PL services in their logistics functions. (Manda, S., 2006)

A second reason why many logistics functions are still kept in-house is the lack of trust and awareness. Indian firms are still very cautious when it comes to outsourcing their logistics operations. Whereas North-American, European and Japanese firms outsource 57 percent, 40 percent and 80 percent of their logistics activities respectively, Indian corporations outsource less than 10 percent of their logistics. Figure 5 shows the main concerns that corporations in India have about outsourcing logistics activities. In brief, most firms fear leakage of sensitive information or the possibility of losing control. A lack of trust in the capabilities and reliability of 3PL providers also induce firms to keep their operations in-
house. This portrays a picture of a landscape where information sharing and collaborative partnerships still have to pick up.

Figure 5: Reasons not to use 3PL services (Source: Sahay, B.S. & Mohan, R., 2006)

Third, the complicated tax structure and regulations represent another roadblock to the growth of the Indian 3PL sector. The Central Sales Tax levied on goods that cross a state border, makes it impossible for logistics services providers to deliver the best of logistics solutions for their customers. The service tax levied on purchased services holds many firms back from purchasing logistics services. A lack of uniform, centralized and transparent regulations makes the whole picture even more complicated. For instance, Indian logistics are governed by several bodies. The transportation regulations for logistics are the responsibility of the Ministry of Shipping, Road and Highways; procurement of raw materials is governed by the Export and Import Act of India (1998) and the Ministry of Commerce handles the EXIM Policy. In addition, State Governments have enough freedom and authority to implement the regulations in a way that fits best to the specificities of their geographic jurisdictions. This ultimately leads to a variety of regulations throughout the Indian subcontinent.

This diversity necessitates firms to adopt varied logistics models that are appropriate for each state and that facilitate the effective storage and transportation of goods mostly sold in that state. This makes it very difficult for firms to adopt a uniform logistics model for the whole country (Manda, S., 2006).
again, the rule of thumb is to approach India as a subcontinent – just as you would approach the entire European market – rather than as a single country with the same conditions everywhere. We discuss the importance of tax-optimization of supply chains in section 8.

Finally, 3PL providers are also reluctant to bringing in new investments to the country due to the poor infrastructure. Ports congestions, the deplorable state of many Indian roads, quasi-inexistent links to remote areas and frequent power outages are just some of the obstacles that the 3PL industry has to face on a daily base. This ultimately sets a vicious circle in motion: the poor infrastructure affects the performance of 3PL providers negatively which leads to unsatisfied clients, who then decide to keep even more logistics functions in-house. The revenues of 3PL providers then decrease, which then makes them unable or unwilling to invest more into the Indian logistics industry.

### 6.2.2. Trends in the Indian 3PL sector

A first trend in the Indian 3PL industry is the ongoing consolidation activity and the entry of global logistics players: large logistics services providers are acquiring smaller players in order to enlarge the range of services that they offer (Mitra, S., 2006). For instance, DHL acquired Blue Dart, TNT took over Speedage Express Cargo Service, while FedEx acquired Pafex. In addition, *“the entry of global third party logistics players has led to the remodeling of the logistics services in India. From a mere combination of transportation and storage services, logistics is fast emerging as a strategic function that involves end-to-end solutions that improve efficiencies”*, thus a report by real estate consultancy Cushman & Wakefield et al.

Next to speeding up sector consolidation on the Indian logistics market, multinational 3PL providers are importing their international knowledge and experience into India; especially their expertise in IT and supply chain management. This will improve industry practices and accelerate the development of India’s logistic sector.

Both the Indian government and bulk users of logistics infrastructure are also increasingly focusing on investments in infrastructure. This is expected to impact the growth of the 3PL market positively. The Indian government has also declared many concessions in the BPO sector, under which 3PL services fall. These concessions include allowing 100 percent FDI – with certain restrictions in some cases. This gives the Indian logistics sector a head start to China where FDI in logistics is still not permitted.

Implementation of the uniform value added tax (VAT) by all Indian States and the upcoming Goods & Services Tax (GST) are also expected to decrease the complexity of the tax structure. This will allow more efficient logistics models such as changes in the warehousing/DC system to make long-haul transportation more efficient, schedule changes to cut down the number of expensive Less than Truck
Load (LTL) shipments, implementation of cross-docking systems which would reduce the required material and documents handling significantly and improve delivery performances, etc.

Further development in the sector is expected to lead to the rise of 4PL services providers; at least once the 3PL market has been fully tapped. The new generation of firms is expected to expand outsourcing to non-traditional logistics operations such as inventory management, labeling and packaging, reverse logistics, distribution, etc. (Olsson, J., 2005) and outsource the management of entire operations to a single organization.

6.3. Ineffective usage of ICT in logistics

Information is a key driver of effective supply chains. It is the glue that holds all the other drivers together, and allows them to create an integrated and coordinated supply chain. It is the foundation on which supply chain transactions and management decisions are based (Chopra, S. and Meindl, P., 2007, p. 482).

Efficient management of information and communication technology throughout the supply chain is therefore crucial to maximizing visibility in the entire network. However, despite the criticality of IT capabilities to the integration of services provided by 3PLs and notwithstanding India’s globally recognized expertise in the area of information technologies, the penetration of ICT into logistics process is still very low.

Sahay, B.S and Mohan, R. (2006) have identified communication, IT integration and information sharing to be some of the main issues to the implementation of 3PL services. In his survey of 3PL providers in India, Mitra, S. (2006) reveals that India still lags far behind on global standards: 78 percent of the respondents uses mobile commerce, 56 percent uses Electronic Data Interchange (EDI) and only 31 percent uses bar coding. Satellite tracking and Global Position Systems (GPS) are used by less than 10 percent of the respondents, while Geographical Information Systems (GIS) are used by less than 5 percent. Respondents also reported the use of logistics management solutions, ranging from Warehouse Management Systems to web-based applications such as Intranet and Java (Mitra, S., 2006).

According to Chandra, P. and Jain, N. (2007), the low levels of ICT in Indian operations can be attributed to the inappropriate evaluation of its benefits to a business. Thus, providers of supply chain solutions and 3PL providers need to educate their customers, and reinforce the perceived value of technology as a mean to improve communication and the flow of information through the supply chain.
On the other hand, the low penetration of ICT in operations management offers the opportunity for firms to build entirely fitting systems from scratch, instead of tweaking on existing ones. Though this requires more effort and consumes more resources, developing information technologies that are adapted to the local conditions can turn out to be a source of considerable competitive advantage over time. India is an emerging market with a lot of potential; adopting a long-term view is therefore essential.

In the segment of fleet management, telematics solutions for vehicle tracking are growing at a high rate as revealed by the *Telematics Opportunity for India Report* by Frost & Sullivan (2007). The use of telemetry in vehicle tracking and fleet management systems has been around for several years now. It involves the use of technology to measure and transmit data from a remote source such as a vehicle, to a receiving station where the data can be analyzed. As the Indian market grows, customers are increasingly moving from basic vehicle tracking devices toward GPS-based online tracking systems.

Ineffective usage of ICT is, however, not only limited to logistics. It extends to all stages of the supply chain, with the distribution process being severely hit by a lack of accurate information as well. We elaborate more on this in the following section.

**7. The Indian retail industry and the distribution channels**

Even though India is a booming consumer market, the poor retail store coverage, limited transportation possibilities, the lack of warehousing standards and restrictive government regulations can make the challenges of getting the products to the customers seem insurmountable.

Furthermore, a large percentage of India’s population lives in remote villages that lack access to conventional retail stores. Access to the interior of the mainland is also limited, since only 48 percent of the 55,000 villages are connected with roads (Rastogi, A., 2006). Given the culture-specific nature of retail, copying successful distribution channels of the developed economy will therefore not work in India. The challenge lies in creatively thinking of alternate ways to get your products and services to your buyers.

**7.1. The retail sector**

India’s retail sector is highly fragmented and unorganized. It is currently in the hands of 15 million family-run stores and corner shops. These so-called “Mom-and-Pop” stores or *Kirana* stores represent 95 percent of the Indian retail sector. They offer only basic necessities, are usually small – no more than 50 square meters of retail space – and they employ up to 21 million jobs to the Indian population.
However, as demand for luxury products increases, global retailers are hoping that the planned US$ 1 trillion in new mall retail space, logistics infrastructure and distribution capabilities, will open opportunities to create organized retailing such as multi-branded hypermarkets and mall-style shopping experience (Kilgore, M. et al, 2007).

Modern format retailing still lags behind on other emerging markets, as shown by Figure 6. In addition, the importance of the traditional small-store (kirana) retailers is not going to make the task of creating organized retailing easy. First, these Kirana stores are the easiest way to generate self-employment, since the required investments in capital, land and labor are limited (Biswas, R., 2006). Consequently, new retail outlets emerge almost everywhere throughout the country. Secondly, Kirana stores are usually located in the customer’s neighborhood, thus offering the advantage of proximity. Large distributors on the other hand are often forced to set up their facilities outside City limits due to the Indian tax structure. However, a trip to the mall outside the city is only feasible to households that own a car and that have the means to buy products in bulk. The smaller consumer will therefore prefer the corner shop at the end of his street. Finally and most importantly, there is the trust between the shopkeepers (kiranawalla) and the consuming households from the surroundings. The neighborhood kiranawalla easily grants credit to his customers when necessary, and offers free home delivery for the regular monthly supply, informally called ‘ration’12.

Figure 6: Modern format retailing in emerging markets (Source: Industry HSBC)

Another roadblock to the growth of organized retailing in India resides in the restrictive government regulations to the entrance of foreign retailers. India already has large domestic players in the retail

sectors such as Pantaloon, Reliance and Bharti. However, current regulations only allow a 51 percent majority stake in a joint venture for single-branded retailers such as Nike, whereas retailers carrying many brands can only enter the Indian market through a franchise or a cash-and-carry model. This basically means that Nike can have its own Nike retail stores in India, while Wal-Mart cannot set-up hypermarkets in India under its name since it carries several brands. However, while restrictive regulations prevent foreign entrants from entering the single-branded retail market, there are no restrictions on FDIs on the wholesale market. A few foreign multi-branded retailers – such as Wal-Mart and Metro – have found innovative schemes to enter the Indian market. For instance, Wal-Mart Stores Inc. entered the Indian market through an equally (50/50) owned joint venture with Bharti Enterprises signed: the wholesale retailing stores Bharti Wal-Mart Private Ltd, which will sell groceries, consumer appliances and fruits & vegetables to small businesses and retailers. The joint venture will open up ten to fifteen cash-and-carry stores over the next seven years. In addition, Bharti Retail, a fully owned subsidiary of Bharti Enterprises, that will own and manage the retail stores, entered a franchise agreement with Wal-Mart that will provide back-end technical and supply chain support.

Thus, cash-and-carry models are becoming the “back-door” for foreign retailers to enter an Indian market that is dominated by small kirana stores. Franchises are then used to leverage expertise and know-how. Metro, Shoprite and Wal-Mart have pioneered the way, and other retailers are lining up to enter the Indian market as well. Appendix II summarizes the routes through which foreign individuals, institutional investors and corporations can invest in India.

Modern-style retailing still has a long way to go. It is expected to grow at a compound annual growth rate (CAGR) of 40 percent; from US$ 20 billion in 2007 to US$ 107 by 2013. The following box summarizes some of the industry growth drivers.

GROWTH DRIVERS OF THE RETAIL INDUSTRY

According to Biswas, R. (2006), further growth in domestic retail demand will be fuelled by:

- **Economic growth** with increasing disposable income for the Indian middle-class as well as the migration of population to higher income segments.

- **Demographics**: more than 50 percent of the population is under 25 years of age. This age interval is expected to grow rapidly. Mari Bhat P.N. (2001) states that 86 percent of the total population growth in the first quarter of

\[13\] A.T. Kearney Global Retail Development Index 2008
the twenty-first century will be in the age bracket 15-65 years of age. Over the period 2000-2025, expectation of life at birth, under realistic circumstances, is also projected to increase by 7 years for the male gender and 9 years for the female gender.

- **Urbanization**: the urban population is expected to increase from 28 percent in 2002 to nearly 40 percent in 2025 (Ernst & Young, 2007; World Bank), while income is expected to grow simultaneously in these segments.

- **Credit availability**: retail loans have increased considerably over the past years. Despite the global economic downturn, Indian banks are increasingly offering more tailored solutions, ranging from loans against future receivables to micro-financing.

- **Regulatory enablers**: despite the current restrictive regulations, a noticeable trend towards policy simplification and FDI relaxation is creating many growth opportunities for the retail sector. In addition, States Governments are increasingly becoming aware of the opportunities that growing retail activity offers such as employment, tax revenues and income from acquisition of real estate. The future will therefore see development in these areas as well, through land and rent reforms, changes in old regulations, zoning laws and private holdings which made it difficult to get quality real estate in central locations.

### 7.2. Distribution intermediaries

While modern-format retailing is still developing, multinational firms are tenaciously pursuing business models that reflect organized retailing through partnerships with local distributors – also called stockists-and Carrying & Forwarding Agents. These third party services providers have extensive market knowledge, and sufficient infrastructure to receive large shipments, break bulk and deliver the products to customers or to retail shops.

In fact, it is quite common for firms in India to work with multi-tiered networks where intermediaries hold a very important place. Retailing in developed economies is largely consolidated, which gives large retailers enough scale and reduces the importance of intermediaries such as distributors. Bringing in intermediaries into the supply chain structures does little to reduce costs. Actually, it can even lead to higher costs due to additional transactions. In contrast, the highly fragmented Indian retail sector is composed of small retailers. They have limited storage capacity and therefore need frequent replenishment. The most cost-effective way for manufacturers is to bring full truckloads of their products close to the market first, and then distribute them locally with smaller vehicles and ‘milk runs’ – which are smaller deliveries. Products can be brought closer to the market either by your own warehouses or
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by using local distributors who can take delivery of a full truckload, break bulk and then arrange for the ‘milk runs’ (Chopra, S. & Meindl, P., 2008).

Indian distributors and C&F agents add value to your supply chain in many ways. First, they can act as one-stop shops for smaller retailers. Secondly, they can reduce logistics costs by aggregating products across multiple manufacturers during their delivery runs. Third, they can take care of collections, since their costs of collection is significantly lower than having each manufacturer collect from retailers on its own (Chopra, S. and Meindl, P., 2008: 6). Fourth, regional distributors offer the advantage of proximity to the market that your firm wants to serve. This alleviates the tax burden as it allows your firm to avoid Central Sales Tax, a tax that is levied for inter-state sales of goods. Furthermore, proximity to the market allows you to buffer for lead-time variability.

Given their important role, however, many intermediaries tend to set high profit margins (5-10 percent for a distributor, 2-4 percent for a C&FA) which strongly affect the price that the consumer will pay for the product (Swaminathan, J.M., 2007).

7.3. Micro-enterprises

The next surge of demand in India will come from the rural market. However, some rural areas are too remote to be accessed by the periodical delivery truck or your typical sales representative. Some firms have managed to get their products and services even to the most remote areas of India by encouraging the local entrepreneurial spirit. Supporting micro-enterprises is one way to quickly gain access to existing retail outlets or to establish a selling network as illustrated by Hindustan Lever Ltd.’s Shakti Project.

SUCCESS STORY: UNILEVER’S SHAKTI

With less than a third of the population living in urban areas, scarce to non-existent transport infrastructure and a very fragmented retailer base, distributing products and services to end users in rural areas - where 50 percent of the middle-class is located - challenged even one of the country’s largest corporations: Hindustan Lever Limited (HLL), the Indian subsidiary of Unilever. In order to cater to the half million villages with a population under 2000 inhabitants each, HLL set up a direct-to-consumer retail operation by creating a network of entrepreneurs to sell its products door-to-door. The project was called Shakti (“strength” in Sanskrit).

India has a growing number of women’s Self-Help Groups, with a nationwide presence. Project Shakti

consists in training and coaching some of these women to run small shops and deliver HLL’s products to their villages and to small villages in close proximity.

Next to providing Hindustan Limited Lever with a larger network of retailers in remote areas, the project enables more visibility throughout the distribution process. By training its candidates in replenishment and inventory management, HLL obtains valuable sales information which it then uses to fine-tune its distribution activities. Project Shakti is already a multi-million dollar business, which represents a significant share of HLL’s overall revenues, while providing an annual combined income for Shakti entrepreneurs of over US$25 million a year. *(Source: Worldbank.org)*

Swaminathan, J.M (2007) argues the lack of information tracking at retail end is one of the main hindrances to effective distribution processes in India. Point-of-sales (POS) systems are only emerging in urban areas. The small mom-and-pop stores still rely on pen and paper to keep track of their sales and to manage their inventory and have no access to bar coding. Fragmentation of the retail market also harms the integration of information throughout the supply chain. Moreover, small retailers do not possess the necessary skills and knowledge to provide firms with adequate information feedback. For instance, it is quite common for a retailer in the rural area to order only those products that are in stock at the warehouses; products that are out of stock and possibly are in great demand are never replenished while slow moving products are being ordered all the time. “The lack of SKU level sales and demand information at the retail outlets leads to usage of approximate surrogate measures such as total coverage of rural retail outlets, number of sales person visits and the overall product line sold in a given time frame. […] The lack of such [bar coding] data and information makes the planning process more of a push strategy, primarily driven by sales objectives that a firm would like to achieve in a given period. This leads to unwanted effects like ‘inventory dump’ and ‘hockey stick’ phenomenon that lead to self-induced seasonality, wherein firms show very high sales towards the last quarter.” *(Swaminathan, J.M., 2007)*

The Shakti’s example illustrates both the importance of innovation and creativity when approaching the Indian market, and the advantages of these innovative endeavors. By providing its Shakti personnel with adequate training in inventory management and order policies, HLL ensured that it would receive accurate demand information. This increased visibility can help the company to improve its demand planning and lower its inventory levels. In addition, the Shakti project allowed HLL to create new markets against low costs of customer acquisition, strengthen the brand recognition and improve its brand image by collaborating with humanitarian groups *(Pfeiffer, P. 2007)*.
Kilgore, M. et al. (2007) also advise firms to set up a decentralized multi-tiered distribution system, as pure flow-through models from plant to retailers cannot be expected in the near-future. Given that Indian supply chains cannot be expected to become reliable in the near-future, the authors also recommend to rely more heavily on inventory and to reside closer to the market to buffer for lead-time variability.

8. Building tax issues into supply chains

Complying with tax regulations in developed economies is challenging. Yet, if you think that Belgium has a complicated tax structure then think again, because here comes India and it has reinvented it all.

Indian taxes and duties are known to be a labyrinth, but they are essential parameters in the optimization of supply chains. Corporate tax treatment in India varies significantly from State to State, as all levels of government have the authority to levy taxes on goods and services (Bhavna, D., 2004). The Federal government levies taxes on income, imports (Custom duties), the rendering of services (Service Tax) and goods manufactured in India (Central Value Added Tax or CenVAT). The State Governments may charge taxes on professions, on property transactions (Stamp Duty), the VAT on intra-state sales of goods, the Central Sales Tax (CST) on inter-state sales of goods and the State Excise. Local bodies tax properties, Octroi when goods enter the city limits, and the supply and use of utilities such as water. Table 5 gives an overview of the tax structure per government level. Error! Reference source not found.

<table>
<thead>
<tr>
<th>Central government</th>
<th>State government</th>
<th>Local government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income taxes</td>
<td>Central Sales Tax (CST)</td>
<td>Octroi duty</td>
</tr>
<tr>
<td>Wealth-tax</td>
<td>Value Added Tax (VAT)</td>
<td></td>
</tr>
<tr>
<td>Excise (Cenvat)</td>
<td>State levies / Entry tax</td>
<td></td>
</tr>
<tr>
<td>Customs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service tax</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Overview of taxes per government (Source: Deloitte)

The multidimensional tax system - Federal vs. State vs. Local, Goods vs. Services, Intra-state vs. Inter-state, Direct vs. Indirect, etc. - ultimately adds tremendous complexity to the job of managing supply chains. However, Koudal, P. and Engel D.A. (2007) have shown that incorporating global tax issues

15 Source: [http://www.indianembassy.org](http://www.indianembassy.org)
into restructuring effort can double bottom-line results (Figure 7). So imagine what tax optimization of your Indian supply chain can do for your bottom-line.

In the past decade, the Indian tax structure has undergone significant fiscal rationalization to simplify the tax administration, clarify the structure and the incidence of the tax system, and improve the competitiveness of the Indian market. Indirect taxes have particularly been subjected to reforms.

In 2005, a uniform Value Added Tax (VAT) was introduced. It was supposed to become the incumbent model as the Central Sales Tax (CST) that is levied on inter-state sale of goods would phase out. Though it took a while, a dual VAT system, levied both on State and federal level, is now into place in all Indian states. The dual VAT systems coexist alongside the CST. The later is expected to have fully phased out by 2010.

Furthermore, goods and services are still subject to different taxes. The Service Tax is levied on a defined set of services, while VAT and CST are imposed on goods. A roadmap to a Goods & Services Tax (GST) has been drawn. Implementation is expected to start as of 2010. Figure 8 provides an overview of the Indian tax provision. In the following paragraphs, we introduce shortly each of these categories and discuss how they can impact the supply chains through examples.

Figure 7: Building tax issues into supply chain optimization (Source: Koudal, P. & Engel, D.A., 2007)
8.1. Taxes levied by the Central Government

8.1.1. Direct taxes

Table 6 provides an overview of the direct taxes in India that are levied by the federal government. They influence the choice of business entity under which a firm wants to operate in India.

Next to direct corporate income tax, companies in India are subject to a Minimum Alternative Tax (MAT), wealth tax, Capital Gains Tax and Dividend Distribution Tax (DDT).
<table>
<thead>
<tr>
<th>TAX</th>
<th>RATE OF TAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Tax</td>
<td></td>
</tr>
<tr>
<td>Up to INR16 150000</td>
<td>NIL</td>
</tr>
<tr>
<td>INR 150001 to 300000</td>
<td>10%</td>
</tr>
<tr>
<td>INR 300001 to 500000</td>
<td>20%</td>
</tr>
<tr>
<td>Above 500000</td>
<td>30%</td>
</tr>
<tr>
<td>Corporate tax</td>
<td></td>
</tr>
<tr>
<td>Domestic company</td>
<td>30%</td>
</tr>
<tr>
<td>Foreign company</td>
<td>40%</td>
</tr>
<tr>
<td>Minimum Alternative Tax</td>
<td>10% of book profits</td>
</tr>
<tr>
<td>Fringe Benefit Tax</td>
<td>30%</td>
</tr>
<tr>
<td>Dividend Distribution Tax</td>
<td>15%</td>
</tr>
</tbody>
</table>

| **Table 6: Income-tax rates at a glance (Source: Deloitte)** |

**Corporate Income-Tax**

**Domestic companies** are subject to a corporate income tax of 30 percent of their worldwide income. There is a surcharge of 10 percent if the total income exceeds INR 10 million. Additionally, a 3 percent *education cess*17 is levied on the amount of income tax including the surcharge. Thus, the effective corporate tax income on domestic companies is:

- 30.9 percent where income is less than or equal to INR 10 million
- 33.9 percent where income is more than INR 10 million

**Non-resident companies**, on the other hand, are subject to a corporate income tax of 40 percent, with an additional surcharge of 2.5 percent if the total income exceeds INR 10 million. A 3 percent education cess is also levied on the amount of tax including the surcharge. Thus, the effective corporate tax income on domestic companies is:

- 41.2 percent where income is less than or equal to INR 10 million
- 42.23 percent where income is more than INR 10 million

**Minimum Alternative Tax**

Normally, the tax liabilities of a company are computed according to the Income-Tax Act. However, the profit and loss account of the company is prepared according to the Companies Act. From this discrepancy originated the so-called “Zero Tax companies”. These were firms who had book profits

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16 INR: Indian Rupees
17 *Education cess*: to give a boost to primary and secondary education in the country a cess of 2% for primary education and 1% for secondary education is levied on income tax, corporation tax, excise and customs duties and service tax.
according to their Profit and Loss statements, but who were not paying any taxes because their total income was negative, nil or insignificant when calculated according to the Income-Tax Act.

The MAT was introduced in order to bring these companies under the Income-Tax Act. If the income tax that a company has to pay on its total income is less than 10 percent, then the company’s book profits will be considered as its total income. A 10 percent tax rate will be charged on this amount, with an additional surplus charge and cess.

*Fringe Benefits Tax (FBT)*

A 30 percent fringe benefit tax is levied on employers for all perquisites provided to employees other than salary of wages, tips, health insurance and pension plan.

*Dividend Distribution Tax (DDT)*

Domestic companies are liable to pay 15 percent DDT on every amount that is declared, distributed or paid as dividends, with an additional surplus charge of 10 percent.

**8.1.2. Income tax holidays**

To attract investments and spur economic activity, Indian tax law foresees income tax exemptions for a given period, especially when the nature of the activity has a beneficial effect on the Indian economy. These are summarized in Table 7.

<table>
<thead>
<tr>
<th>Tax Holidays</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Infrastructural activities</td>
<td>100% - 10 consecutive years</td>
</tr>
<tr>
<td>✓ Developing Special Economic Zones (‘SEZ’)</td>
<td>100% - 10 consecutive years</td>
</tr>
<tr>
<td>✓ Industrial undertaking – established in the State of Jammu and Kashmir</td>
<td>100% - 5 years, and 30% - next 5 years</td>
</tr>
<tr>
<td>✓ 30% - next 5 years</td>
<td>Undertaking established in North-Eastern States</td>
</tr>
<tr>
<td>✓ 100% - 10 consecutive years</td>
<td>Other tax holidays also available under the tax law</td>
</tr>
</tbody>
</table>

Source: Gupta C.A., “Introduction to corporate tax in India” at Seminar “Doing Business in India: Special Focus on Corporate and Indirect Tax”, Deloitte Academy, Diegem (Belgium), March 19, 2009

Table 7: Income-tax holidays at a glance (source: Deloitte)
8.1.3. Indirect Taxes

Indirect taxes have the most impact on supply chains. Those levied by the federal government can be divided into three categories: CenVAT, customs duties and the service tax. For all three categories, credit is available only to the manufacturer or service provider. Figure 9 provides an overview of both federal and State-level taxes.

![Figure 9: Indirect Taxes at a glance (Source: Deloitte)](image)

**Excise duty or CenVAT**

Central excise duty or Central Value-Added Tax (CenVAT) is charged on goods manufactured in India at the rate of 8.24 percent. This tax is levied ad valorem – i.e. calculated on the transaction value of goods. With the global economic downturn, the Indian government has lowered the CenVAT to 8 percent in order to relieve the tax burden on the manufacturing industry.

Introduction of CenVAT has allowed a gradual shift from physical tax control to a record-based control and payments of duties on a quarterly basis. In turn, this has resulted into the reduction of day-to-day compliance burdens. This is ultimately bound to reduce lead times within the supply chain as the information flow gains some speed (Bhavna, D., 2004).

**Customs duties**

A basic customs duty is levied on goods that are imported into India (plus surcharge in some cases) with an education cess of 3 percent. Customs duties are payable on the value of the imported goods (Madhavan, S. et al., 2007). The maximum rate is 15% for industrial goods, which falls in the same range as the rest of emerging Asia. The Indian duty labyrinth is clarified in Table 8.
THE DUTY Labyrinth

Duties consist of:

- Basic duty that is applicable on every imported good. It is calculated on the Customer Assemble Value (CAV) or on 101% of the transfer price.
- Countervailing duty or CVD. The CVD is calculated on CAV + Basic Duty. CDV was introduced in order to put foreign firms on the same footing as domestic ones, since domestic firms have to pay excise duty.
- Two types of education duties can be imposed.
  - Education cess (1) is calculated on the CVD. The revenues it generates are for education purposes.
  - Education cess (2) is calculated on Basic Duty + CVD + Ed. Cess (1)
- Additional duty, which can be based on 101% of the landed cost or on Transfer Price + Basic Duty + CVD + Ed. Cess (1) and (2)


Table 8: The Indian duty labyrinth (source: Agfa Healthcare)

Several categories of imported goods are adjusted for exceptions. This way, taxes are decreased. The downside however is that it brings along a lot of research and paperwork to be up-to-date of the exemptions, since they can be changed by the custom authorities anytime.

Service tax

Service Tax is levied on the provision of certain specified taxable services at the rate of 10 percent, plus 3 percent education cess. The tax is imposed on the gross amount charged for the service. In 2007, the list services consisted of 106 services. It is extended each year, as aim of the Indian government is to have nearly all services included to the list.

According to the destination principle, a service that is provided outside the country’s borders but whose benefits are received within India will be taxable. However, if the service is provided outside the country by an Indian firm, then no service taxes will be imposed. Exports are Zero rated and a refund can be obtained when service tax is paid on input services that are used for exports.

8.1.4. Indirect taxes and your supply chain: an example

Figure 10 illustrates a short example that clarifies the Indian indirect tax system throughout the supply chain. Raw materials are sourced outside the country. Goods are then manufactured in India, stored in State A and sold in State B. When sourcing the goods from outside the country, customs duty is
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incurred. Excise duty (CenVAT) is levied on the manufactured goods and CST is imposed when goods are sold in another state. VAT is levied at the state level in the final stage, but can be retrieved by the customers.

VAT and CST cannot be offset by one another and are therefore difficult to recuperate. This is the main reason why so many firms have to operate warehouses or distribution centers in each state where they sell products, as we explain in paragraph 8.2.1. Consequently, efficient models such as hub-and-spoke distribution and cross-docking are practically unfeasible from a financial point of view. Managing supply chains in India therefore means tying up significant working capital into facilities while trying to gain visibility in highly complex networks of suppliers, distributors, facilities, rules and regulation, and third party services providers.

The 10% Service Tax on the other hand, is levied on the provision of services such as consultancy and logistics. This tax burden hinders the use of 3PL services. As a consequence, many firms prefer to keep non-core logistics activities in-house. In many cases, this hurts the efficiency of the supply chain process and the profitability of the firm.

The octroi tax that is levied when goods are brought within City limits also influences the location of suppliers, the frequency of deliveries and the inventory levels within the supply chain. Suppliers and

Figure 10: How Indian indirect taxes can impact your the supply chain (source: D. Panchal, Deloitte Mumbai)
large distributors will therefore prefer to locate outside city limits due to the high cost of property and taxes within the city area. Higher transportation costs often mean lower frequency of deliveries to business partners within the city limits or the customer ordering in larger lots. This ultimately increases both the cycle inventory and the safety stock within the supply chain or alternatively results in frequent stock-outs and lost sales. Distribution facilities that are located outside the city walls also will often lose sales to those located in the proximity of the consumers. This is one of the advantages that small neighborhood stores have over large distributors located ‘outside the Octroi limits’. It is also an obstacle to the consolidation of the Indian retail industry. Table 9 provides an overview of the current Indirect tax rates.

<table>
<thead>
<tr>
<th>Duties/ Taxes</th>
<th>Central Govt.</th>
<th>State Govt.</th>
<th>Local Govt. (municipalities)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Levy</td>
<td>Rate (%)</td>
<td>Levy</td>
</tr>
<tr>
<td>Custom Duties</td>
<td>√</td>
<td>24.42 (13.85)</td>
<td>-</td>
</tr>
<tr>
<td>CenvAT</td>
<td>√</td>
<td>8.24(^{19})</td>
<td>-</td>
</tr>
<tr>
<td>Service Tax</td>
<td>√</td>
<td>10.30(^{20})</td>
<td>-</td>
</tr>
<tr>
<td>CST/VAT</td>
<td>√</td>
<td>2.00</td>
<td>√</td>
</tr>
<tr>
<td>Entry Tax/Octroi Duty</td>
<td>x</td>
<td>-</td>
<td>√</td>
</tr>
</tbody>
</table>

- Note: the underlined rates are pass through taxes, while the remainders are costs

Table 9: Indirect taxes in India (Source: Deloitte)

8.2. Taxes levied by the State Government

8.2.1. From differential sales tax to uniform value added tax

The Central Sales Tax is a tariff that is applied on inter-state sales of goods. It is a differential tax since it varies from State to State. In fact, in the old Indian tax structure, each state had the authority to determine the rate of its Central Sales Tax (CST). Consequently, rates varied significantly depending on the State: for example for some goods it can vary from 8 percent in the Northern States to 20 percent in the South (Bhavna, D., 2005). With the federal government pushing towards a streamlined tax system, the authority of Indian States in this aspect has weakened.

Consider a direct transaction of goods between a manufacturer located in State A and a retailer located in State B. In this case, the manufacturer will have to incur CST as well as local taxes and duties. However,

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\(^{18}\) Consists of Basic Customs duties (BCD) – 10%; Additional Duties of Customs u/s 3(1) (CVD) – 8.24%; various Education Cess – 3%; Additional Duties of Customs u/s 3(5)(ADO) – 4%

\(^{19}\) Cenvat rate 8% and various Education cess 3%

\(^{20}\) Service tax 10% and various Education cess 3%
if the manufacturer distributes goods to the retailer from his own DC in State B, then the manufacturer will only have to pay local taxes and duties. Therefore, in order to avoid paying CST, a manufacturer needs a DC in each State so that the flow of goods happens within the same state (Avittahur, et al., 2005). For instance, Agfa Healthcare has 12 different warehouses in India due to the impact of CST.

India is a federal republic with 28 States and 7 centrally administered territories (Union Territories). Thus, a firm with a nationwide presence would need 35 distribution centers. Such a large amount of facilities cannot be justified from an efficiency point of view, especially when sometimes a DC is necessary even to serve areas with very low demand. It therefore seems that managing a trade-off between CST and logistics efficiency is the rule on the Indian landscape (Avittahur, et al., 2005). Frequent State border check posts enhance the problem even more by adding significant lead-time variability, higher levels of inventory and higher compliance costs to the supply chain.

On April 1st, 2005, a uniform Value-Added Tax (VAT) was introduced. This was one of the largest reforms of India’s public finances for the past 50 years. VAT would introduce more clarity, certainty and self policing mechanisms to the Indian tax structure, while CST phased out gradually. Today, both coexist, with State VAT being charged on intra-state sales of goods, while CST is charged on inter-state sales of goods. However, CST is expected to disappear completely by 2010. A credit mechanism has been installed for the input of VAT paid. Table 10 provides an overview of current VAT rates.

<table>
<thead>
<tr>
<th>VAT rates at a glance</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Basic rate: 12 %</td>
</tr>
<tr>
<td>- Essential commodities: 0%</td>
</tr>
<tr>
<td>- Jewelry: 1%</td>
</tr>
<tr>
<td>- Industrial inputs, capital goods and items of mass consumption: 4%</td>
</tr>
<tr>
<td>- Petroleum products, tobacco and liquor are subject to higher VAT that the basic 12.5%. The actual rate depends on the state</td>
</tr>
</tbody>
</table>

Table 10: VAT tax rates at a glance (Source: Deloitte)

Still, there are a couple of points to be kept in mind:

- First of all, the VAT is a destination-based tax, meaning that exporters can no longer purchase goods free of tax. VAT must be paid at purchase and then a refund can be obtained through the VAT return process.

- Secondly, the VAT credit mechanism is subjected to prescribed rules. For instance, stock transfer outside the State incurs retention at a given rate. So, when moving goods from a
warehouse in State A to a warehouse in State B, less VAT credit will be granted. Such circumstances complicate the optimization of the network of warehouses and distribution centers even more.

- Third, the VAT framework is merely a guideline. It is still up to governments at State-level to determine which of the VAT rates (12.5%, 4% or an exemption) are applied to which goods (Bhavna, D., 2005). This is still bound to lead to nationwide inconsistencies, with products being higher priced in certain regions and having better profit margins in others.

8.3. Evolution of the tax system
The next milestone in the Indian tax reform could be the integration of goods and services taxation through the Goods and Service Tax (GST). This would simplify the taxation system even more, and end the long standing distortions that have been caused by differential treatment of the manufacturing and the service sector.

The project is still in the pipeline, as the Indian government is still investigating the feasible models under which the new system could be introduced. In addition, a consensus with all 28 States still needs to be reached. Key to successful implementation of the GST is that the Central State Tax must have phased out entirely. GST implementation is expected to take off on April 1st, 2010. Figure 11 shows the roadmap towards the goods and services tax.

![Figure 11: Goods and services tax (Source: Deloitte)](image)

8.4. Special Economic Zones
Special Economic Zones fall under the Indian Foreign Trade Policy. The term encompasses a broad range of more specific zone types such as Free Zones (FZs), Free Trade & Warehousing Zones...
(FTWZs), Free Trade Zones (FTZs) and other Export-Oriented Units (EOUs). The Indian Foreign Trade Policy defines SEZs as “specifically delineated duty free enclaves that are considered to be foreign territory for the purposes of trade operations and duties and tariffs.” Consequently, “goods and services going into the SEZ area from the Domestic Tariff Area (DTA) are treated as exports and goods coming from the SEZ area into DTA are treated as if these are being imported.”

However, one of the characteristics of a special economic zone is that, if the NFE-condition is satisfied (cfr. infra) exemption from federal indirect taxes (excise duty, custom duty and service tax) as well as from state indirect taxes (CST & VAT) can be obtained. By offering a 15-year tax holiday for activities in the SEZ, the Indian government aims to:

- generate of additional economic activity
- promote the exports of goods and services;
- promote investment from domestic and foreign sources;
- create employment opportunities;
- develop infrastructure facilities;

The fiscal incentives that are available to SEZ Units and SEZ Developers, are summarized in Table 11 and Table 12.

<table>
<thead>
<tr>
<th>Establishing a new SEZ unit / developer</th>
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<tbody>
<tr>
<td>- Exemptions</td>
</tr>
<tr>
<td>- Customs duty on import/ export of goods</td>
</tr>
<tr>
<td>- Excise duty on manufacture in SEZ or procurement from DTA</td>
</tr>
<tr>
<td>- Service tax on services used for authorized operations by way of refund to SEZ/ SEZ unit</td>
</tr>
<tr>
<td>- Central sales tax on procurement of goods</td>
</tr>
<tr>
<td>- Drawback &amp; refunds on procurement of goods &amp; services from DTA also available</td>
</tr>
<tr>
<td>- In general, exemption from State Taxes &amp; duties available</td>
</tr>
</tbody>
</table>

Table 11: Fiscal Benefits Direct Tax (Source: Deloitte)

Source: [http://sezindia.nic.in](http://sezindia.nic.in)
Establishing a new SEZ unit

- Income-tax holiday for up to 15 years on export profits
  - First 5 years: 100%
  - Next 5 years: 50%
  - Next 5 years: up to 50% (subjected to creation of reserves)
- Exemption from Minimum Alternate Tax (MAT)

Developer or Co-developer SEZ

- Income-tax holiday on profits derived from SEZ development
  - 100% for any 10 out of first 15 years
- No Dividend Distribution Tax (DDT)
- No Minimum Alternate Tax (MAT)

Table 12: Fiscal benefits Indirect Taxes (Source: Deloitte)

Special Economic Zones Units may be setup for the manufacture of goods, or the rendering of services. The only condition is that they must be Net Foreign Exchange Earners. The Net Foreign Exchange Earning (NFE) is calculated cumulatively for a period of five years from the beginning of production. It entails that the cumulative value of the exports is more than the cumulative value of imports for 5 years.

Next to fiscal benefits, special economic zones offer other advantages. For instance 100 percent FDI is allowed within these zones, labor laws and regulations are more liberal than in the rest of the country, there are no limitations to subcontracting and no import license is require.

9. CONCLUSIONS

9.1. In summary

For the past decade, the Indian economy has been growing at a rapid pace. Spurred by a booming middle-class and the export of IT-enabled services, India has become one of the most appealing sourcing and demand markets among the emerging economies.

India’s business process outsourcing industry in renowned over the globe. However, the country has also been making forays into the manufacturing sector and it is working hard to change its reputation as a low-quality manufacturing center. With a very large number of skilled, English-speaking engineers graduating each year, India is looking to differentiate itself from China by focusing on skill-intensive design and manufacturing outsourcing. Furthermore, it has abundant natural resources. Several multinational corporations are therefore currently looking at India as a high-potential sourcing opportunity.

India is also a highly attractive demand market. With a 300 million strong middle-class, a young population and increasing urbanization, it ranks among the ten largest retail markets in the world.
However, these opportunities can seem insurmountable due to the many challenges and inherent risks of doing business in India. First, the fragmented supplier base, and the lack of quality management and transparency at the supplier's end can make it hard to procure raw materials, spare parts or finished goods from India profitably and without running the risk to harm your brand image. Secondly, the creaking transportation infrastructure, capacity constraints in seaports and frequent power outages intensify even more the challenges of sourcing profitably from India or getting your goods to the Indian market. Third, the absence of organized retailing makes it hard for manufacturers to get their product to the Indian consumer. Restrictive government regulations and a very complex taxation system represent a fourth hindrance to setting up effective distribution and retail networks.

Based on our review of the literature and our explorative interviews with professionals who have experienced with doing business in India, we can identify three rules of thumb:

1. **Consider India as a subcontinent, not as a single country.** India is a heterogeneous nation, with 28 states, 7 union territory, different languages, cultures, social classes, religions, income levels, and a multitude of habits and preferences. Approaching India as a subcontinent means that you should take all these differences into account and decide which segment of the Indian subcontinent you want to serve or source from, and customize your strategy to fit the needs and capabilities of each segment.

2. **Use local talent.** Navigating the obstacles and regulations of the Indian landscape requires extensive knowledge about India, which is often not available at the corporate headquarters of multinational corporations. Actively seeking partnerships with local players and tapping into the highly skilled, local professional pool can provide your firm with the necessary knowledge and the network needed to gather this knowledge, source from local vendors or get your product to the Indian consumer.

3. **Think long-term.** As an emerging market, India still has a long way to go until it is fully developed. The majority of suppliers are small and underdeveloped, while the consumer market is only blossoming. Going for the quick financial gains is therefore a strategy that will not work. Instead, we recommend business models which nurture the market for long-term growth, develop suppliers' capabilities through mutual incentives, focus on building strong relationships with key local partners and fulfill the firm's social responsibility.
9.2. Limitations and opportunities for future research

A first limitation of our thesis lies in the interview methodology and the non-representative sample of interviewees. We conducted several interviews with several professionals from European multinational firms, who have experience with doing business in India. As the interviews were explorative, our goal was mostly to find out which challenges these professionals have come across and which opportunities they see in India, and compare the results to our findings from the literature review. We did not use standard questions, but rather adapted our question to the activities of each of these firms.

Secondly, we decided to focus on the sourcing and delivery processes of supply chain management. Planning, manufacturing and reverse logistics are other areas which are open for further investigation.

Furthermore, we narrowed our research to supply chains of tangible goods. However, given the importance of the service industry in India, supply chain management of services should be examined as well.

Other key issues that can be investigated include supply chain risks and quality management processes in India.
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APPENDIX I: BRAND MANAGEMENT

The lack of conventional advertising in India also constitutes a challenge to serving the Indian consumers adequately.

India still has low literacy levels, which significantly reduces the effectiveness of advertising in print media. Communicating the brand value through the packaging rather than through words therefore becomes essential. In addition, the penetration of modern advertising media such as TV and Internet is mainly limited to urban areas. With 50 percent of the middle-income segment living in rural areas, such low media penetration significantly decreases the reach of conventional advertising campaigns. This ultimately results in low brand recognition and high vulnerability to counterfeits. For instance, the rural consumer identifies FMCG and durables through visual recognition of color, images (animals, logos…) and numbers. For this consumer, there is no difference between Philips and Phillips or between Levi’s 501 and Levis 501.

Another consequence of low media exposure in India is that consumers sometimes lack the knowledge about what a product does. When selling brands, it is therefore important to educate your consumers simultaneously by telling exactly what your product does (Bharadwaj V.T. et al, 2005). Creative promotion techniques will also often be necessary to reach the rural market. For example, Hindustan Lever Limited has been using magicians, ‘town criers’ and mobile advertising to promote its products throughout India.

Creating brand awareness in India is a challenging undertaking: as the market is still developing, it may take a while before the efforts finally pay off. Therefore patience and a long-term perspective are key to winning the Indian consumers: give the market enough time to develop. Notwithstanding the challenges, the rewards for the market shaper can be significant, both in brand recognition and insights required to stay ahead of the competition. (Bharadwaj V.T. et al, 2005)
APPENDIX II: PORTS
Table 13 illustrates the traffic handled by India’s major ports, in terms of volumes, vessels and container traffics. It is also interesting to notice that each of the major ports is specialized in handling different type of cargo, as shown by Table 14. Based on data from the Indian Ports Association, we were able to determine the five most significant ports per type of cargo.

<table>
<thead>
<tr>
<th>Ports</th>
<th>Cargo handled (x 1000 tonnes)</th>
<th>Vessel traffic</th>
<th>Container traffic (x 1000 TEUs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>'07 - '08 % increase over '06 - '07</td>
<td>'07 - '08 % increase over '06 - '07</td>
<td>'07 - '08 % increase over '06 - '07</td>
</tr>
<tr>
<td>KOLKATA (Kolkata Dock Systems and Haldia Dock Complex)</td>
<td>57282 4,1</td>
<td>3385 21,2</td>
<td>425 21,8</td>
</tr>
<tr>
<td>PARADIP</td>
<td>42438 10,2</td>
<td>1513 4,2</td>
<td>4 100,0</td>
</tr>
<tr>
<td>VISAKHAPATNAM</td>
<td>64597 14,6</td>
<td>2346 11,8</td>
<td>71 26,8</td>
</tr>
<tr>
<td>ENNORE</td>
<td>11563 7,9</td>
<td>213 6,0</td>
<td>- -</td>
</tr>
<tr>
<td>CHENNAI</td>
<td>57154 7,0</td>
<td>2052 -0,3</td>
<td>1128 27,3</td>
</tr>
<tr>
<td>TUTICORIN</td>
<td>21480 19,3</td>
<td>1602 4,5</td>
<td>450 19,4</td>
</tr>
<tr>
<td>COCHIN</td>
<td>15810 3,6</td>
<td>806 -31,5</td>
<td>254 11,9</td>
</tr>
<tr>
<td>NEW MANGALORE</td>
<td>36019 12,4</td>
<td>1144 10,1</td>
<td>21 23,5</td>
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<td>MORMUGAO</td>
<td>35128 2,6</td>
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<td>14 7,7</td>
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<td>JNPT</td>
<td>55756 24,4</td>
<td>3106 11,9</td>
<td>4060 23,1</td>
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<tr>
<td>KANDLA</td>
<td>64893 22,5</td>
<td>2598 22,3</td>
<td>167 -6,2</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>519159 11,9</td>
<td>20917 3,6</td>
<td>6712 21,1</td>
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Table 13: Traffic handled at major Indian ports

<table>
<thead>
<tr>
<th>Dry Bulk</th>
<th>Liquid Bulk</th>
<th>Break Bulk</th>
<th>Container</th>
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<tr>
<td>Paradip (22%)</td>
<td>Kandla (19%)</td>
<td>Mumbai (23%)</td>
<td>J.N.P.T. (47%)</td>
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<tr>
<td>Mormugao (22%)</td>
<td>Haldia (16%)</td>
<td>Tuticorin (18%)</td>
<td>Chennai (12%)</td>
</tr>
<tr>
<td>Mumbai (13%)</td>
<td>Mumbai (15%)</td>
<td>Kandla (17%)</td>
<td>Kolkata (9%)</td>
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22 Source: [http://www.ipa.nic.in/oper3e_2008.htm](http://www.ipa.nic.in/oper3e_2008.htm)
23 Source: [http://www.ipa.nic.in/oper4d_2008.htm](http://www.ipa.nic.in/oper4d_2008.htm)
Table 14: Ports specialization by type of cargo

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<tr>
<td>J.N.P.T. (11%)</td>
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<td>Haldia (9%)</td>
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<td>Kolkata (8%)</td>
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<td>New Mangalore (10%)</td>
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Supply Chain Management in Emerging Markets: India
APPENDIX III: FOREIGN DIRECT INVESTMENTS

Foreign Direct Investment can be subdivided into different categories, which fall under different regulations. In this appendix, we look at Foreign Direct Investments from made by corporations – as opposed to those made by business angels and institutional investors.

FDIs in India are allowed in the following cases:

- Wholly owned subsidiaries
- Financial collaborations
- Joint ventures and technical collaborations
- Capital markets via euro issues
- Private placements or preferential allotments

Figure 12: Types of foreign investment in India

24 This chapter is based on insights from the Deloitte Academy’s seminar on Doing Business in India: Special focus on Corporate and Indirect taxes
Figure 12 shows the two specific routes for foreign companies to invest in India: the automatic route and the approval route. Figure 13 explains these routes in more details. The *automatic route* is the easiest one, as no approval from the Indian authority is required. Only the sectoral caps\(^{25}\) must be taken into account. For instance, only 51 percent ownership is allowed for single-branded retail; sector caps for the Telecom industry are 47 percent, etc.

![Automatic route and Approval route diagram]

Figure 13: FDI routes\(^{26}\)

The more difficult *approval route* must be taken in the case of activities that require industrial license, activities that are not covered in the sectoral policies of the automatic route or "*proposals that are made by a foreign collaborator that has an existing financial/technical collaboration in India.*"

The Foreign Investment Promotion board (FIPB) is an independent body that will give a case-to-case approval. It can take up to four or six weeks before the body has ruled over the proposal. IN the case of rejection, the FIPB always provides an clarification about its decision. A recent update on FDIs declares that a Government approval or an FIPB approval is also necessary in the case of a

\(^{25}\) *Sectoral caps* are the limits on investments by Persons Resident Outside *India* or Foreign Companies for each Industry

\(^{26}\) RBI: Reserve Bank of India: one of its tasks is to administer foreign exchange regulations.
“transfer of ownership or control of Indian companies with sectoral cap from resident Indian citizens to non-resident entities” (Gupta, C.A. 2009).