CHAPTER -2

HISTORY OF E-COMMERCE AND ROLE OF E-COMMERCE IN THE AUTOMOBILE INDUSTRY IN INDIA

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CHAPTER 2

HISTORY OF E-COMMERCE AND ROLE OF E-COMMERCE IN THE AUTOMOBILE INDUSTRY IN INDIA

2.1 Introduction

Electronic Commerce is not just a technology; it is a way of conducting business that has the potential to impact every aspect of the firm’s value chain. Implementing full-scale, innovative applications of electronic commerce requires management teams to view the market place beyond the typical physical boundaries. The greatest problem the pioneers of electronic commerce encounter is the limited set of models that constrain our thinking. We tend to think of the web in our “industrial age” paradigm – where everything must be described and related to the physical world (Enix Consulting limited, 1998). If electronic commerce applications are not placed in the proper business context and the strategy aligned with the business’ overall strategy, the electronic commerce application is likely to fail. New models of business are necessary that integrate electronic commerce initiatives with overall business goals. Electronic commerce is just a transactional component of e-enablement as depicted in Diagram 2.1 below:

**Diagram 2.1 Evolution of Electronic enterprise**

E-enablement is about using the networking technologies in such a manner that most of the operations of an enterprise happen off a network – linking back to the suppliers...
and transacting with the customers. The benefits of enablement are: accurate deliveries, overnight order fulfilment, real-time and self-service information.

**Diagram 2.2: Traditional value chain model**

Source: Cambridge Information Network

**Diagram 2.3: Customer-oriented value chain model**

Source: Cambridge Information Network

The difference between the Traditional value chain and the Customer-oriented value chain can be depicted from the above models. The latter indicates the ‘Customer
centric’ business models are the need of the hour and Organizations need to devise their business models keeping the ‘Customer’ as the core of business. They need to specifically lay down their goals and objectives keeping in view the ‘Customer’ as the focal point for conducting successful business.

MODELS OF E-COMMERCE ADOPTION

IT ADOPTION FACTORS IN AUTOMOBILE SECTOR:

The Steps Model of E-Commerce adoption

The 'steps' model can help us understand the different types of E-Commerce business applications that the business may encounter. It may also help us to identify the types of assistance that may be provided to small enterprises.

MODEL: Moving Up the E-Commerce Ladder

![Steps to e-commerce diagram]

SOURCE: Commonwealth Telecommunications Organisation (CTO)

Step 1. Starting Out: Simple messaging using mobile communications

Currently 'wireless' communications – including short messaging services (SMS) – provide a cheap and widely available option for enterprises.
Step 2. Getting Online: Email messaging – a powerful business communication tool

This involves sending or receiving emails from a computer terminal either located on the business premises or via a facilitator (such as an Internet Café or Telecentre). Email is a cheap, quick and reliable way to exchange business information with customers, suppliers, and business contacts who are also connected to email. A variety of information can be sent – not just messages, but documents, photographs, drawings, or any other computer data file.

Step 3. Web Publishing – to reach a wider customer base

Web publishing can be used to make enterprise information available – by using an online brochure, for example. Its simplest form may consist of a 3-4 page website giving a basic business profile, some information about products and services, and contact information – physical and postal address, telephone and fax, and email contact. In a more advanced form it may include an online catalogue – an online version of a conventional catalogue that can be easily updated. Even a simple web presence offers the ability to access a wide – potentially global – market with 24/7 accessibility.

Step 4. Web Interacting – to improve relationships with users

Web interaction will allow customers (for example) more scope to browse through images, descriptions and specifications relating to your products and services. It may allow them to submit email enquiry forms, to order online, to use online services or to use a shopping cart facility and order confirmation – that could be paid for and fulfilled (delivered) offline. Interaction over the web can improve customer service and response to customer queries.

Step 5. Web Transacting – moving to true E-Business

This can be termed as having a full E-Commerce capability that covers the whole transaction process from the placing of an order to online payment for goods and services via secure networks. For B2C E-Commerce this will involve making use
of secure credit card payments systems, and for B2B E-Commerce will involve payment through secure banking systems.

**Step 6. Web Integration – a fully e-enabled enterprise**

E-Commerce may also take on a wider role within a business through Web integration. Web integration provides an electronic platform that links customer-facing processes such as sales and marketing (the "front office") with internal processes such as accounts, inventory control and purchasing (the "back office"). This is often called E-Business or the business may be described as becoming fully "e-enabled". E-Business links internal systems with external networks (customers, suppliers and collaborators) via the Internet. Integrating systems can make it easier and cheaper to do business, and it can encourage customer loyalty and repeat business.

**Model for E-Commerce Implementation in Automobile Sector**

A review of the Information Systems implementation literature shows that the framework developed by Tornatzky and Fleischer (1990) may be useful in developing a model for the implementation of E-Commerce. This model represents three major contexts of the implementation of IS, they are:

1. Characteristics of IS technology innovation, 2. organisational factors, 3. IS related factors.

**Implementation in Automobile Sector**

Four factors are included in the model, namely, (1) organisational factors; (2) managerial factors; (3) environmental factors; (4) technical factors.

In order to fully understand the preliminary framework it is important to have a clear understanding about the factors mentioned in preliminary framework. Each of the variables shown in the above model (Tornatzky and Fleischer (1990)) is discussed in the Table below.
### 1. Organisational factors:
- User Involvement
- Customer Interaction

### 2. Managerial factors:
- Top Management Support
- CEO’s knowledge

### 3. Technical factors:
- Technical Compatibility
- IS Expertise
- IS Security
- Cost Benefit
- Perceived Advantage

### 4. Environmental factors:
- External Pressure
- Competition in Industry
- External Support

However, as most of the research has been done in the area of business to business E-Commerce hence some factors may not be appropriate or relevant. It would be inappropriate to apply the theory of IS implementation to all types of IS innovations. A preliminary framework of E-Commerce implementation in the Automobile manufacturing units can therefore be conceptualised as per the questionnaire drafted for collecting primary data which is mentioned in the previous chapter.

There is a paradigm shift in the way the business is being conducted and the emergence of E-business models during the 21st Century which can be evidenced from the following:

**Table 2.1 : Showing how E-commerce has changed the paradigm of doing business**

<table>
<thead>
<tr>
<th>Business activity</th>
<th>Before E-business</th>
<th>With E-business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory</td>
<td>Count by hand tracking &amp; reporting</td>
<td>Computerised sales</td>
</tr>
<tr>
<td>Communicating with suppliers</td>
<td>order forms mailed or faxed, order by phone</td>
<td>inventory tracking with automatic ordering system</td>
</tr>
<tr>
<td>Marketing</td>
<td>newspapers, flyers, business cards, letterhead radio &amp; television ads trade shows word-of-mouth</td>
<td>web site, links, e-mail, e-newsletter, word-of-mouth send this web site to a friend</td>
</tr>
<tr>
<td>Communication with customers</td>
<td>phone, catalogues, in person</td>
<td>web site, e-mail, e-zine, online catalogue, fax, telephone</td>
</tr>
</tbody>
</table>
Customer service | in person or by phone | e-mail, telephone, fax, in person, call centre
---|---|---
Internal communications | face-to-face meetings, memos | internal e-mail, telephone conferencing, chat rooms

Source: Cambridge Information Network

2.2 Indian E-Commerce Scenario

**Economic overview:** India’s economy encompasses traditional village farming, modern agriculture, handicrafts, a wide range of modern industries, and a multitude of support services. About a quarter of the population is too poor to be able to afford an adequate diet. India’s international payments position remains strong with adequate foreign exchange reserves, and moderately depreciating nominal exchange rates. Growth in manufacturing output has slowed, and electricity shortages continue in many regions. India has large numbers of well-educated people skilled in English language; India is a major exporter of software services and software workers.

**The World Bank Report on Indian GDP Estimates:**

- Real growth rate: 5 to 6 per cent (about 6 % in 2013)
- Per capita: purchasing power parity – US$ 2,500 (in 2001), US$ 5418 (in 2013)
- Composition by sector: agriculture: 25 per cent, industry: 26 per cent, services: 49 per cent.

2.3 Significance of E-Commerce in India

The cutting edge for business today is E-Commerce. Most people think E-Commerce means online shopping. But web shopping is only a small part of the picture. The term also refers to online stock, bond transactions, buying and downloading software without ever going to a store. In addition, E-Commerce includes business to business connections that make purchasing easier for big corporations.
E-Commerce is generally described as a method of buying and selling products and services electronically. The main vehicle of E-Commerce remains the Internet and the World Wide Web, but use of e-mail, fax and telephone orders is also prevalent. Electronic commerce is the application communication and information sharing technology among trading partners to the pursuit of business objectives. E-Commerce can be defined as modern business methodology that addresses the needs of the organization, merchants and consumers to cut costs while improving the quality of goods and services and speed of service delivery. E-Commerce is associated with the buying and selling of information, products, and services via computer networks.

A key element of E-Commerce is information processing. The effects of E-Commerce are already appearing in all areas of business, from customer service to new product design. It facilitates new types of information based business processes for reaching and interacting with customers—online advertising and marketing, online, order taking and online customer service etc. It can also reduce costs in managing orders and interacting with a wide range of suppliers and trading and trading partners, areas that typically add significant overheads to the cost of products and services.

Gartner Group predicted in April 2001 that the B2B E-commerce in the Asian and Pacific region will reach US$ 220 billion, which was 24 per cent of the worldwide total. In the year 2000, this figure was US$ 96.8 billion or 22 per cent of the worldwide total. In the year 2005, the Asian and Pacific region accounted for 28 per cent of the worldwide B2B E-Commerce transactions, which itself grew to US$ 2.4 trillion (People’s Daily Online, 7 April 2001). The corresponding online revenue growth figures for the year 2013 was $ 398 Billion for the Asia Pacific region.

A report of eMarketer released in May, 2001 says that the number of Internet users in the Asian and Pacific region increased dramatically from 48.7 million in the year 2000 to 173 million in the year 2004. It comprised more than 27 per cent of the global Internet user community compared with 21 per cent in the year 2000. The same report estimates the number of Internet users in India was about 5.8 per cent of the total number in the Asia-Pacific region (eMarketer, 10 May 2001). The corresponding figures for 2013 was over 500 million internet users in the Asia-Pacific region (eMarketer, 2013). It is against this backdrop of the world at large and Asia-Pacific in particular there is a need to examine the developments in India. The Government of
India has long recognized the need for development of IT industry and information infrastructure as these are twin engines for growth of the economy.

Deeper penetration of IT applications in the economy, and in the society as a whole can help boost the economy. E-Commerce applications can make it easier for the country to better integrate with the global markets, the e-marketplace. This has led the government, over the last few years to formulate liberal policies for the development and growth of the IT industry. The IT sector as a whole has grown at a compounded annual growth rate of about 30 per cent every year for the last few years. The total production during the year 2001-2002 was Rs 809 billion (US$ 17.3 billion), out of which software exports account for Rs 3,655 billion (US$ 7.8 billion). In the year 2013 the corresponding figures were US $ 99 billion and the exports accounted for nearly US $ 69.1 billion which was nearly 69.7 % of the Industry’s revenue.

NASSCOM (National Association of Software and Service Companies) had released findings of its survey to evaluate the E-Commerce scenario in India. As per preliminary findings of the survey, the total volume of E-Commerce transactions in India was about Rs 450 Crores in the year 1999-2000. Out of this volume, about Rs 50 Crores were contributed by retail Internet or business-to-consumer transactions and about Rs 400 Crores was contributed by business-to-business transactions. With the regulatory framework (IT Act and Digital Signature) in place and improvement in telecom infrastructure, increase in PC penetration could lead to sizeable E-Commerce transactions in India in the next two years. In tune with global norms, it is expected that business-to-business transactions would continue to constitute a major chunk of e-business transactions in India. Thus, E-Commerce is not just a western version. The most talked about and well-endorsed feature of E-Commerce is its global flavour. Evidently, E-Commerce has also started to show its true potential in India. While on one hand, India’s E-Commerce solutions are becoming a sought after commodity around the world, even E-Commerce based businesses are leaving their distinct marks of technology competitiveness, viable business model and entrepreneurship.

E-business can indeed emerge as a major opportunity for India. This acquires twin connotations of E-Commerce and e-business transactions from local businesses and a huge opportunity for software exports to other countries by quickly joining the e-
business bandwagon. India’s twin assets (the software industry and rapidly restructuring industry sector) sectors have been taken into consideration.

• As of September 2002, there was a PC base of 7.5 million PCs the corresponding figures for the year 2013 was 230 million users in India.

• More than 80 per cent of standalone PCs sold during last two years were driven by the need to access the Internet.

• Ninety one per cent of India’s corporate web sites are located overseas.

• Internet access continues to be most widespread amongst the 18-24 year age group.

However, all age groups have seen vast increases in access over the last 18 months. A significant development is that almost 11 per cent of people over the age of 40 now access the Internet.

• Males continue to outnumber females in accessing the Internet at 77 per cent compared to 23 per cent. This has however increased from the ratio of 82:18 in June 1999.

• The Internet and E-Commerce industry employs approximately 82,000 people. These include web developers, web designers, system analysts, ISP infrastructure providers, marketing staff, e-software professionals, etc. It was projected that by March 2003, the Internet and industry would employ over 300,000 people.

• India had about 1.6 million households connected to the Internet(1999), the corresponding figures were 230 million internet users in the year 2013.

• Internet users on an average are estimated to be accessing the Internet for 6 hours a week.

_The profile of Internet users in India is dominated by:_

• The professional/corporate segment, which accounts for around 43 per cent of Internet usage.

• Inching close behind is the student community represented by school and college goers. This segment contributes close to 38 per cent of Internet surfers.

• Over half (59.2 per cent) use the Internet as an information resource, 11.3 per cent use it as an educational tool and just under 8.2 per cent use it for entertainment.
• Most frequently used services online by the internet users - 73.4 %: e-mail, 77 %: search engines and 23 % for downloading/ uploading software.

• Of the total Internet users, around 20 per cent own credit cards and around 14 per cent own mobile phones. According to the NASSCOM survey, considering the interest the Government is taking in the growth of the market, E-Commerce in India will witness a significant jump over the next three years.

• Based on these preliminary findings, experts have concluded that penetration of Internet and E-Commerce transactions in India will increase by leaps and bounds. It was being stated that in the case of business-to-business transactions, the Indian industry had reached online penetration of 5 per cent in 2003 to 40 percent in 2013.

Table 2.2 : Showing Total E-commerce transactions, B2C & B2B

<table>
<thead>
<tr>
<th>Year</th>
<th>B2B</th>
<th>B2C</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Rs Crores)</td>
<td>(Rs Crores)</td>
<td>(Rs Crores)</td>
</tr>
<tr>
<td>1998-1999</td>
<td>119</td>
<td>12</td>
<td>131</td>
</tr>
<tr>
<td>1999-2000</td>
<td>400</td>
<td>50</td>
<td>450</td>
</tr>
<tr>
<td>2000-2001</td>
<td>1,100</td>
<td>100</td>
<td>1,200</td>
</tr>
</tbody>
</table>

Source: Nasscom survey

• The anticipated earnings of the E-commerce industry in India would be nearly US $34.2 billion in the year 2011-2015. (The estimated B2C E-commerce figures for the year 2015 is US$ 5.6 Billion and for B2B E-commerce it is US$ 28.6 Billion).

• Revenue streams would increasingly be aligned with the emerging global model, it is being anticipated. This would mean that the majority of the revenues would come from transactions; while a smaller amount would be realized from advertising revenues. It is found that in 2003, more than 75 per cent of revenues of Internet business-to-consumer business had come from transactions. The advertisement revenues would amount to about 8 per cent of total add spend by the companies.
Some of the preliminary findings on e-business software exports potential are as follows:

• In the year 1999-2000, Internet and related software and services export from India brought in US$ 500 million out of an estimated US$ 4 billion software and services exports.

• Supply Chain Management optimization is one of the strongest drivers of the global solutions market, as it spurs business-to-business transactions. More than 68 per cent of Indian software houses have informed of strong expertise in supply chain and distribution management solutions.

• Almost 32 per cent of IT company respondents have identified web based consumer business as a major opportunity area, with expected paybacks beginning in three to four years.

• Some of the emerging hot areas of services are: legacy application integration; Internet application integration; Customer Relationship Management (CRM), Customer Service Management (CSM), Enterprise Resource Planning (ERP) and Electronic Data Interchange (EDI) migration to web based models; new IT frameworks and integration with business strategy (strategic IT consulting); training services, business web site development and maintenance. The user side, E-Commerce means business.

Some of the highlights of the domestic E-Commerce scenario based on the findings of NASSCOM’s survey include the following:

• Among user organizations, more than 90 per cent expressed keen awareness about the increasing adoption of E-Commerce and its potential benefits.

• More than 55 per cent of corporate respondents said that E-Commerce transitions were integral of their corporate plans. Of these nearly 85 per cent were industries which did not have direct or frequent contact with end consumption.

• About 23 per cent of top 500 companies in India already have started some form of E-commerce. These have been facilitated through the up gradation of existing IT systems or fresh installations configured for E-Commerce transactions.
In India, there are about 3.4 million small and medium enterprises which accounts for 42 per cent of Manufacturing sector turnover and 35 per cent country’s exports. These SMEs employ over 17 million persons. The SMEs segment in India is fast getting tacked by the larger companies, who are allays on the lookout for new market avenues. Computer Associates – which has a healthy clientele among large corporate bodies – has huge plans to enter the security market comprising the Rs 10-Crore SME sector in India, offering end-to-end security solutions to smaller players. There is a huge unexplored market in India and the existing security offerings are scarce and fragmented. Since the SME market is the largest spender on IT, it is the right time for an entry and also because SMEs in India are under a great deal of pressure from the bigger customers to create a secure e-biz infrastructure.

SMEs are increasingly seeing the benefits arising from E-Commerce as expanded geographical coverage giving them a larger potential market into which they can sell their products and services. Some of the key industries that have high potential for early adoption of E-Commerce are financial (stock exchanges and banks) automobiles, retail, travel, IT and manufacturing. For the SME sector, some of the concerns with E-Commerce revolve around fear or eroding their existing customer base and technical issues arising out of lack of computer expertise and the cost of necessary hardware and software. These are some of the preview highlights of a survey conducted by NASSCOM to determine the status of Internet and electronic commerce proliferation in India.

2.4 E-Commerce growth in India

During the year 2000-2001, two major Industry Associations produced separate reports on E-Commerce in India. Both the reports came out around the same time, namely June-July 2001. One was prepared by the National Committee on E-Commerce set up the Confederation of Indian Industry (CII), while the other was commissioned by the NASSCOM and prepared by the Boston Consulting Group. Both the reports are optimistic about the growth of E-Commerce in India. The Confederation of Indian Industry (CII) report estimates the volume to grow to Rs 500 billion (US$ 10.6 billion) in the year 2003, out of which B2B was to be Rs 420 billion
(US$ 9 billion) and B2C was to be Rs 80 billion (US$ 1.7 billion) (CII, 2001). The NASSCOM-BCG Report, on the other hand, estimates for the same year that the total volume of E-Commerce would be Rs 1,950 billion (US$ 41.5 billion), out of which Rs 1,920 billion (US$ 41 billion) would be on account of B2B and Rs 3 billion (US$ 64 million) would be on account of B2C (NASSCOM and BCG, 2001). E-Commerce volume for the year was estimated to be Rs 150-200 billion (US$ 3.2-4.2 billion) (NASSCOM and BCG, 2001). The estimated revenues would be: B2C E-commerce for 2015 is US$ 5.6 Billion and for B2B E-commerce it is US$ 28.6 Billion (eMarketer 2008).

The earlier expectations of value creation through pure-play dot-coms, large online market sizes, businesses reducing their procurement and inventory costs through B2B have been belied. The euphoria of Internet revolution is over. But there is a deeper realization that the opportunities and threats of the Internet are very real. Organizations that have understood the power of the Internet and have implemented well thought out business strategies have leveraged B2B and B2C E-Commerce to create significant gains in their business. LG Electronics India Ltd. is a case in point. It expects to realize margins up to 1.5-2 per cent through B2B supply chain initiatives on information sharing and procurement efficiencies.

2.5 E-Commerce - Players, procedures and problems

Private sector participation should be explored in e-developmental initiatives to ensure their sustainability over the long run. There are several B2B players. Satyam has developed an engine that can be used to develop platforms for any industry. The biggest currently in operation is the steel industry TheSteelExchange, auto companies, are coming together to form eax.com (auto exchange). Probably the biggest ‘internal B2B’ player is Maruti, which already does a large part of their supply-chain side purchasing and dealer-networking online.

Some other successful cases are: Hindustan Lever Ltd., General Motors and Godrej. The most well known B2B E-Commerce technology, such as i2 technology and CommerceOne, are yet to be adopted by Indian corporates. These technologies are presently too expensive and may not result in any return on investment due to lack of other infrastructure and services such as third party and fourth party logistics in the
country. There is still a lot that the government can do, starting with resolving the inter-bank settlement standards to enable online payments. Next could be to strengthen the telecom infrastructure (especially in the last mile). Another important thing would be to recognize online contracts, which has now been done in India.

**Some of the barriers for adoption of E-Commerce in India include the following:**

- Limited Internet access among customers and SMEs (current level of internet usage is low among businesses and users)
- Poor telecom and infrastructure for reliable connectivity (Internet connectivity slow, access costs are high and connections are unreliable)
- Multiple gaps in the current legal and regulatory framework
- Multiple issues of trust and lack of payment gateways (privacy of personal and business data connected over the Internet not assured; security and confidentiality of data not in place)

**2.6 Overview of Automobile Industry in India.**

Automobiles today resemble ‘computers on wheels’ because of the increasing number of digital systems. With each model year, vehicle manufacturers offer more sophisticated electronic systems addressing vehicle safety and infotainment. The costs associated with these sophisticated systems are also rising. Automobile industry in India can be broadly classified under passenger vehicles, commercial vehicles, three wheelers and two wheelers, with two wheelers having a maximum share of the market of more than 75%.

The report published by SIAM India provides statistics of the share of two wheelers in Indian automobile sector is as follows:
Factors affecting the demand and growth of the Indian automobile industry

The automotive sector is one of the core industries of the Indian economy. Indian Government’s impetus to the industry by allowing continuous economic liberalization since 1991 has made India one of the sought after destination for many global automotive players.

The following facts summarise the current position of Indian automobile sector:

- The production of two-wheelers has grown steadily at a CAGR of 10 per cent, from 6.5 million units in 2004–05 to 10.5 million units in 2009–2010 and the corresponding figures were 18.5 million units for financial year 2014-15. The SIAM report indicates with an exponential growth it would reach 34 million units in the year 2020.
• The motorcycle segment constitutes more than 80 per cent of the two-wheeler market. The Report shows 79.4% of the market share is occupied by two wheelers market (SIAM, August 2015)

• The growth of scooter sales can be attributed to the launch of fuel-efficient gearless scooters.


The automotive sector in India is growing at around 18 per cent per annum. Indian Auto industry has seen a phenomenal growth in the last 20 years. This is due to the convergence of a lot of positive factors.

Diagram 2.5: SHOWING PHENOMENAL GROWTH OF INDIAN AUTOMOBILE SECTOR

Source: SIAM
The sales trajectory of automobiles has witnessed a sharp increase since 1990s till 2000. Automobile industry has greatly benefited from a sharp increase in demand and has added extra capacity, better research and development facilities and technological advancement and distribution setup across the country.

Factors contributing to the increased demand of automotives and the growth of Indian Auto sector

The convergence of government policies, economy’s growth and people’s purchasing power has all contributed to the phenomenal growth of Indian Auto industry. Some of the important growth drivers are explained below.

- Rise in the industrial and agricultural output indirectly helps Indian Auto industry
- Growth in the road infrastructure increases demand for vehicles
- Rise in the Per capita income increases two/four wheeler E-Commerce sales
- Urbanization changes the face of Indian auto industry
- Ever increasing working class and middle class contribute to increased demand of automotives
- Exhaustive range of options in price and models of automotives
- Attractive Finance Schemes for purchase of automotives
- Favourable Government Policies for the auto sector

Diagram 2.6: Showing the Government policy impact on Real GDP growth and Import Tariff Reduction
The Indian Auto Policy of 2002, introduced measures like low entry barriers and investment incentives by the local state governments. To encourage in-house research and development activities, Government has introduced policies that allow weighted tax deduction up to 150%. National Automotive Testing and R&D Infrastructure Project (NATRIP) have been set up in Rae Bareilly, Ahmednagar, Pune, Manesar, Silchar, Indore and Chennai for strengthening the R&D infrastructure.

**Cost efficiencies contributing to lower production costs**

According to a study by KPMG in 2007, India Automotive Study, the labour cost per hour hovers around $20 in UK, USA and Germany. In India, it works out to just $1.60. Due to the huge savings in the labour cost, sourcing auto components and finished cars makes a lot of business sense to the auto manufacturers who have global presence. The improved design capabilities and continuous improvement in quality has been possible only because of the availability of skilled manpower like engineers and IT professionals.

**The future of Indian Auto Industry**

According to a report from United Nations Industrial Development Organization’s (UNIDO) in ‘International Yearbook of Industrial Statistics 2008’, India enjoys 12th position amongst top 15 automakers in the world. India is at the 4th position amongst the auto makers of developing countries. By 2016 the size of the Indian automobile industry is expected to grow by 13%, to reach a mark of US$ 120-159 billion. Presently, India is the 2nd largest two wheeler market in the world and fourth largest commercial vehicle market worldwide.

**Now US car makers look to India**

SILICON VALLEY: North American automotive executives have picked India over China as the most popular offshore destination for the migration of business processing activities, according to a new survey. Nine out of 10 executives, surveyed by management consulting firm A T Kearney recently, said they intend to move certain non-manufacturing business processes to low-cost offshore locations. The most popular destination was India, with almost a quarter of the respondents opting for it, followed by China with 15 per cent and Mexico with 13 per cent.
With allies in a strong economy, rising demand and financial backing, Indian auto industry is standing at the threshold of success.

2.7 Automobile Industry Definition

The Automobile Industry consists of manufacturing units mainly engaged in manufacturing motor vehicles or motor vehicle engines, Products and Services. *The primary activities of this industry are:* Motor cars manufacturing, Motor vehicle engine manufacturing. *The major products and services in this industry are:* Passenger motor vehicle manufacturing segment (Passenger Cars, Utility Vehicles & Multi Purpose Vehicles) Commercial Vehicles (Medium & Heavy and Light Commercial Vehicles) Two Wheelers and Three Wheelers.

Supply Chain of Automobile Industry

The supply chain of automotive industry in India is very similar to the supply chain of the automotive industry in Europe and America. The orders of the industry arise from the bottom of the supply chain i.e., from the consumers and go through the automakers and climbs up until the third tier suppliers. However the products, as channelled in every traditional automotive industry, flow from the top of the supply chain to reach the consumers. Automakers in India are the key to the supply chain and are responsible for the products and innovation in the industry. The description and the role of each of the contributors to the supply chain are discussed below.

Third Tier Suppliers: These companies provide basic products like rubber, glass, steel, plastic and aluminium to the second tier suppliers.

Second Tier Suppliers: These companies design vehicle systems or bodies for First Tier Suppliers and OEMs. They work on designs provided by the first tier suppliers or OEMs. They also provide engineering resources for detailed designs. Some of their services may include welding, fabrication, shearing, bending etc.

First Tier Suppliers: These companies provide major systems directly to assemblers. These companies have global coverage, in order to follow their customers to various locations around the world. They design and innovate in order to provide “black-box” solutions for the requirements of their customers. Black-box solutions are solutions
created by suppliers using their own technology to meet the performance and interface requirements set by assemblers.

First tier suppliers are responsible not only for the assembly of parts into complete units like dashboard, brakes-axel-suspension, seats, or cockpit but also for the management of second-tier suppliers.

**Automakers/Vehicle Manufacturers/Original Equipment Manufacturers (OEMs):** After researching consumers’ wants and needs, automakers begin designing models which are tailored to consumers’ demands. The design process normally takes five years. These companies have manufacturing units where engines are manufactured and parts supplied by first tier suppliers and second tier suppliers are assembled. Automakers are the key to the supply chain of the automotive industry. Examples of these companies are Tata Motors, Maruti Suzuki, Toyota, and Honda. Innovation, design capability and branding are the main focus of these companies.

**Dealers:** Once the vehicles are ready they are shipped to the regional branch and from there, to the authorised dealers of the companies. The dealers then sell the vehicles to the end customers.

### Table 2.3: Showing Total Production of Cars and Vehicles for the years 1999 to 2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Car Production (units)</th>
<th>% Change</th>
<th>Commercial Vehicles (units)</th>
<th>% Change</th>
<th>Total vehicles Production. (units)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2,814,584</td>
<td>29.39</td>
<td>722,199</td>
<td>54.86</td>
<td>3,536,783</td>
<td>33.89</td>
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<td>2009</td>
<td>2,175,220</td>
<td>17.83</td>
<td>466,330</td>
<td>-4.10</td>
<td>2,641,550</td>
<td>13.25</td>
</tr>
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<td>2008</td>
<td>1,846,051</td>
<td>7.74</td>
<td>486,277</td>
<td>-9.99</td>
<td>2,332,328</td>
<td>3.35</td>
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<tr>
<td>2007</td>
<td>1,713,479</td>
<td>16.33</td>
<td>540,250</td>
<td>-1.20</td>
<td>2,253,999</td>
<td>10.39</td>
</tr>
<tr>
<td>2006</td>
<td>1,473,000</td>
<td>16.53</td>
<td>546,808</td>
<td>50.74</td>
<td>2,019,808</td>
<td>19.36</td>
</tr>
<tr>
<td>2005</td>
<td>1,264,000</td>
<td>7.27</td>
<td>362,755</td>
<td>9.00</td>
<td>1,628,755</td>
<td>7.22</td>
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<tr>
<td>2004</td>
<td>1,178,354</td>
<td>29.78</td>
<td>332,803</td>
<td>31.25</td>
<td>1,511,157</td>
<td>23.13</td>
</tr>
<tr>
<td>2003</td>
<td>907,968</td>
<td>28.98</td>
<td>253,555</td>
<td>32.86</td>
<td>1,161,523</td>
<td>22.96</td>
</tr>
<tr>
<td>2002</td>
<td>703,948</td>
<td>7.55</td>
<td>190,848</td>
<td>19.24</td>
<td>894796</td>
<td>8.96</td>
</tr>
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<td>2001</td>
<td>654,557</td>
<td>26.37</td>
<td>160,054</td>
<td>-43.52</td>
<td>814611</td>
<td>1.62</td>
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<tr>
<td>2000</td>
<td>517,957</td>
<td>-2.85</td>
<td>283,403</td>
<td>-0.58</td>
<td>801360</td>
<td>-2.10</td>
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<tr>
<td>1999</td>
<td>533,149</td>
<td></td>
<td>285,044</td>
<td></td>
<td>818193</td>
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Source: Wikipedia.org

The latest report published by SIAM shows a production of 3.2 million units of passenger vehicles in the month of August 2015 and with an exponential CAGR it is
expected to reach 10 million units by 2020. As could be evidenced from the above table 2.3, the overall production of vehicles has grown significantly over the past decade. From a meager -2.10 % growth in the year 2000, it has exponentially grown to 33.89% for the year 2010. Out the total vehicles manufactured, the Cars segment growth rate is also showing a substantial increase in percentage i.e., from -2.85 in 2000 to 29.39% for the year 2010. An important aspect to note here is that, these growth rates indicate the substantial contribution of Car segment in the overall industrial growth rate.

**Parts and Accessory:** These companies provide products like tyres, windshields, and air bags etc. to automakers and dealers or directly to customers.  

**Service Providers:** Some of the services to the customers include servicing of vehicles, repairing parts, or financing of vehicles. Many dealers provide these services but, customers can also choose to go to independent service providers.

**Key statistics:** The production of automobiles has greatly increased in the last decade. It passed the 1 million mark during 2003-2004 and has more than doubled since.

**Basis of Competition**

Competition in this industry is high. Competition in this industry is increasing. Automotive industry is a volume-driven industry, and certain critical mass is a pre-requisite for attracting the much-needed investment in research and development and new product design and development.

**Life Cycle**

The life cycle stage is growth Life Cycle, because the market for manufacturing motor vehicles is consistently increasing. The products manufactured by this industry are profitable. Companies have been consistently opening new plants and extensively employing over the past five years. Japanese and European manufacturers of motor vehicles have entered the market. Industry value added has been rising, along with the rise in GDP.

**Industry Conditions**

Barriers to Entry: Barriers to entry in this industry is high. These barriers include the cost of developing high volume production facilities and the ability to gain
access to technology of major global operators. There is relatively high competition between established domestic companies and foreign companies.

**Taxation**

India has a well developed tax structure. The power to levy taxes and duties is distributed among the three tiers of Government, in accordance with the provisions of the Indian Constitution. The main taxes/duties that the Union Government is empowered to levy are: Income Tax (except tax on agricultural income, which the State Governments can levy), Customs duties, Central Excise and Sales Tax and Service Tax.

**Industry Assistance**

The automobile industry has defined its target in the Automotive Mission Plan as: “To emerge as the destination of choice in the world for design and manufacture of automobiles with output reaching a level of USD 145 billion accounting more than 10% of GDP and providing additional employment to 25 million people by 2016”. In order to achieve this plan, interventions are required from both Industry and Indian Government.

**Capital and Labour Intensity**

The level of Capital Intensity is high and the level of Labour intensity in medium. The motor vehicle manufacturing industry requires significant level of capital investment. Value is added through the automated manufacturing and assembly of costly components.

**Technology and Systems**: The level of technology change is high, the rate of change in technology is medium and investment in technology by producers has been on the rise. The automobile industry in India has seen an enormous development in the engines which are being used.

The Indian automotive industry is in the mindset of a major structural transformation in today’s globalised scenario. “System Supplies” of integrated components and sub-systems has become the order of the day, with individual small components being supplied to the system integrators instead of vehicle manufacturers. In this process most of the Small Scale Industrial units, manufacturing smaller
individual components, have become tier 2 and tier 3 suppliers, while the large companies including most Multi National Companies are being transformed into tier 1 companies who purchase from tier 2 and tier 3, and sell to the auto manufacturers. (Source: Department of Heavy Industry) Investment in new technology such as supply-chain management and collaborative forecasting (where members of the supply chain share forecasting data to reduce bottlenecks) will help make industry more competitive.

2.8 A bird’s eye view of specific role of E-Commerce in Indian automobile industry:

Srinivasan (2000) (31) states: “The Automobile industry in India, being one of the key drivers of the economy is focused on envisioning it’s growth through the new economy”. As per the reports of Society of Indian Automobile Manufacturers (SIAM) E-Commerce is an important and potential medium in the Automobile Industry in India. The potential benefits of E-Commerce in Indian Automobile industry are:

a. Customer-focused service and information exchange
b. Enhancing company image by improving competitive position
c. Enabling the company to be more responsive with servicing business and consumer needs.
d. 24 hours a day information to customers through enquiries through electronic mails
e. Enables the companies to create customer databases
f. Enhances on-line ordering transactions through the Web site.

E-Commerce applications aid the Automobile manufacturers in India by creating sophisticated electronic networks to meet the ever growing higher expectations of Customers. Automobiles today resemble “Computers on Wheels” because of increasing number of digital systems. Hence, Automobile sector in India is poised to lead the E-Commerce. The evolving Internet technologies, the slowdown in new car sales and fierce competition among automakers are forcing manufacturers to connect electronically with their trading partners and customers to stay competitive.
Role of Indo American Chambers of Commerce (IACC) in building B2B network in India:

Having been established in the year 2011, Indo American Chambers of Commerce (IACC, 2011) launched B2B and proactively promotes bilateral trade, collaborations, tie-ups and strategic alliance amongst others with special emphasis on finding suitable business partners, under which IACC will facilitate Business to Business (B2B) matchmaking. This B2B initiative from IACC is rendered free of cost to all ‘paid’ members enrolled and IACC will strive to serve its member to meet their objectives. The companies can enrol with IACC and reach new and hidden markets never known and existed. The B2B will power the SMEs to grow their business and develop linkages with potential business partners.

Diagram 2.7: Showing THE B2B BUSINESS MODEL OF IACC

Source: IACC
Diagram 2.8: Showing demand and supply side engagement model of IACC

Demand Side Engagement Model
Step 1: Query from USA
Step 2: Query Analysis and Customer understanding
Step 3: Internal assessment based on member data & service offerings
Step 4: Qualifying prospect
Step 5: Send proposal
Step 6: Facilitate Match Making

Supply Side Engagement Model
Step 1: Fill B2B Registration Form
Step 2: Collate data
Step 3: Internal analysis of member w.r.t. service offerings
Step 4: Use unique marketing channel to generate interest with buyers
Step 5: Send proposal
Step 6: Kick-start Match Making

Diagram 2.9: SHOWING THE B2B BUSINESS STRATEGY OF IACC
External and Internal Linkages:

IACC provides a platform for both buyers and sellers through extensive external and internal linkages. IACC works like back office for SMEs. The queries are shortlisted, analysed according to member needs. IACC with its extensive network of members and experts filters the potential company and facilitate matchmaking based on requirement of both the parties (buyer and seller).

Enrolment:

Members desirous of taking benefit of this facility prescribed in enrolment form are required to register with their details with their specific business interest.

Dissemination of Information:

Trade leads will be published in IACC’s monthly newsletter which is sent to all members in India and USA. The trade leads will also be posted on their website.

2.9 Conclusion:

The key to success in the industry is to improve labour productivity, labour flexibility, and capital efficiency. Having quality manpower, infrastructure improvements, and raw material availability also play a major role. Access to latest and most efficient technology and techniques will bring competitive advantage to the major players. Utilising manufacturing plants to optimum level and understanding implications from the government policies are the essentials in the Automotive Industry of India.

Both, Industry and Indian Government are obligated to intervene into the Indian Automotive industry. The Indian government should facilitate infrastructure creation, create favourable and predictable business environment, attract investment and promote research and development. The role of Industry will primarily be in designing and manufacturing products of world-class quality establishing cost competitiveness and improving productivity in labour and in capital. With a combined effort, the Indian Automotive industry will emerge as the destination of choice in the world for design and manufacturing of automobiles.