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INDIA'S PAPER INDUSTRY- FUTURE DEVELOPMENT IN 2025

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Abstract
The study focuses future development of paper industries in India. Paper touches our livesevery moment. The paper industry in India is emerging in a rapid speed with demand increase and opportunityformation and fascination to the international players. Paper products are used in education, healthcare, nutrition, trade,communication and wrapping. The population of India has been increasing at a major pace which has led to the increasein the paper intake as each individual utilizes paper and other related products.Paper Industry in India is moving upwith a strong demand push and is in growth mode to meet the expected demand of 25 Million tons by 2025.

Key word: Paper, Development, Sources, production, SWOT analysis, Strategies.

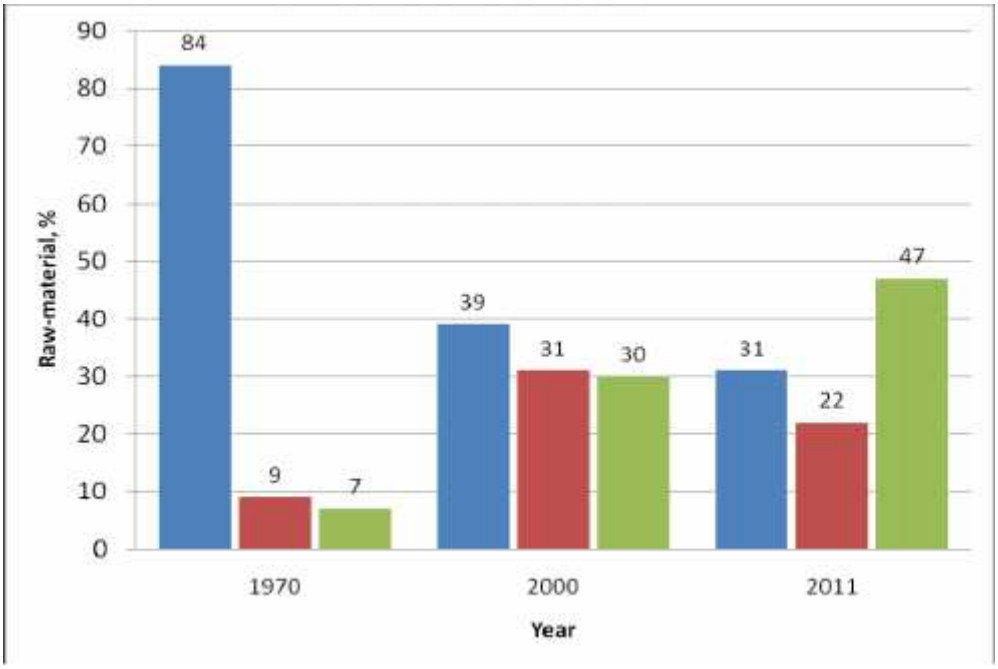
Introduction of paper industry in India

The paper industry in India could be categorized into three groups according to the raw material consumed.

1. Wood based
2. Waste paper based
3. Agro based

The Indian paper industry yields10.11 million tons paper per annum, just 1.6% of the total world production of 394 million tons of Paper Products. Needless to say, at present, India lags far behind compared to global standards. The Scandinavian countries, USA, Canada, Brazil, Chile, and Argentina are the major players in the field of pulp and paper. These countries have some of the best available raw material for paper production and state-of-the-art technology.

Some of the major players in the paper industry of India are BILT, ITC Ltd, APPM, SPB, TNPL, Rainbow Papers, JK Papers Ltd., Century Pulp and Paper, The West Coast Paper Millis Ltd., Hindustan Paper and The Andhra Pradesh Paper mills Ltd.



■ – Forest based fibre■ - Agro-based■ - Recovered from paper
Source: Paper Industry as cited in DIPP, 2012, pp 3

The industry requires around 2.5 million of land for pulpwood cultivated area to fully meet the requirement. Therefore, government support is required,". Paper Industry in India is moving up with a strong demand push and is in growth mode to meet the projected demand of 25 Million tons by 2025. It is projected that there would be an increase in demand of 1 million

tons. As per industry estimates, paper production are likely to grow at a CAGR of 8.4% while paper consumption will grow at a CAGR of 9% till 2012-13.

History of Paper Industry

The word paper invents from the Greek term for the ancient Egyptian writing material called papyrus, which was formed from beaten strips of papyrus plants. The immediate predecessor to modern paper is believed to have originated in China in approximately the 2nd century, although there is some proof for it being used before this date. Papermaking is considered to be one of the Four Great Formations of Ancient China, since the first papermaking process was developed in China during the early 2nd century. China used paper as an effective and cheap alternative to silk, letting them sell more silk, leading to a Golden Age.

The use of paper spread from China through the Islamic world, and entered production in Europein the early 12th century. Machine-driven production of paper in the early 19th century caused significant cultural changes worldwide, allowing for relatively cheap exchange of information in the form of letters, newspapers and books for the first time. In 1844, both Canadian inventor Charles Fenertyand German inventor F.G. Keller had invented the machine and process for pulping wood for the use in paper making. This would end the nearly 2000-year use of pulped rags and start a new era for the production of newsprint and eventually all paper out of pulped wood.

AD 610

Chinese papermaking methods reached Korea at an early date and were introduced to Japan in the year 610. In these two countries, paper is still made by hand on a large scale in the old tradition, preferably from the fresh best fibers of the mulberry tree

Following the cooking process, the long, full-length fibers are merely prepared by beating, which gives the paper its characteristic look and excellent quality. The latter is due, among other things, to multiple, rapid involvements of the mould, which results in a multi-layer fiber mat. Very soon, knowledge of papermaking spread to Central Asia and Tibet and then on to India. When the Arabs, in the course of their eastern expansion, they too became familiar with the production of paper and paper mills were subsequently set up in Baghdad, Damascus and Cairo, and later in Morocco, Spain and Sicily. Owing to the lack of fresh fibers, the raw material used by the Arabs was made almost entirely from rags: however, their defective and poorly designed processing equipment (such as breaker mills) produced a rather inferior ground pulp. But, by using this method, with screensmade of reeds, thin sheets were made and then ‘coated’ with starch paste. This gave Arabian paper its good writingproperties and fine appearance. The export of Arabian-made paper, along with the secrets of its product.

14th Century

In the course of the rapid expansion of trade in the late Middle Ages, more and more merchants dealt in the commodity called ‘paper’ that was growing in importance for public and intellectual life. The Nuremberg councillor UlmannStromer (Stromeir) mulled over the advantages of making his own paper and, with the help of skilled workers from Italy, transformed the ‘Gleismühle’ by the gates of his home town into a paper mill. The dates noted in his diary, 24 June 1390 (start of work on the waterwheel) and 7 and 11 August 1390 (oaths sworn by his Nuremberg foremen), are the first assured records of papermaking on German soil. The wording of Stromer’s diary entries suggest that he regarded papermaking as a largely unknown and secret art, that he had to prevail against the clan of immigrant Italians, and that he had to overcome many technical difficulties.Stromer’s mill – illustrated in the world chronicle of Hartmann Schedel in 1493 - was initially designed with two waterwheels, 18 stamping hammers (i.e. six holes) and 12 workers using one or two vats.

18th Century

During the 18th century there had been some attentiveness of craft activities in large operations, the factorieswhich were dependent on skilled papermakers organised into craft groups. The efforts made to step up productionas much as possible and to have many of the jobs done by machine (partly to get round the constraining rules of papermakers’craft ‘usages’) culminated in the design and construction of paper making machines. The initial model was the vat that was used by J.N.L. Robert, who built the first flat-screen papermaking machine in 1798. This was further developedin England, mostly by Donking and the Fourdrinier brothers.Shortly afterwards other types appeared, like the Dickinson’scylinder machine, and machines which filled wire moulds transported on an endless chain and couched the sheets onan continuous felt. Flat screen and cylinder machines, which were first seen in the 19th century, were continually improvedand extended to include a dryer section. This soon led to aconsiderable widening of the paper web and to an increasein production speeds. It also heralded industrialization. In this new era, the small operators who were unable or unwillingto afford machines sought to survive with piece-work or by producing special grades, but they were sooner or later compelledto discontinue their activities. Others had to adapt their existing buildings or set up new mills elsewhere.

19th & 20th Century

The history of the paper industry in the 19th and 20th centuries can be broken down into five partly overlying periods, each marked by definite trends. In the first stage (from about 1800 to 1860), all work sequencespreviously performed by hand were mechanised. This included the rag preparation, the use of fillers, pulp beating,the paper machine with its various parts, and the machines required for finishing the paper (the headbox, wire section, press section, dryer section, and units for reeling, smoothing and packaging).During the second stage (about 1840 to 1880), efforts were made to obtain rag alternates on an industrial scale (ground wood pulp and chemical pulp) and appropriate industrial plants (ground wood and chemical pulp mills) were developed. The third stage (1860 to 1950) was marked by the enlargement of the web width, an increase in working speeds, the introduction of electric drive and further improvements to various machine parts. Machines designed specifically for the production of particular paper and board grades (for example the Yankee cylinder and multi-cylinder machines) were also developed. The web working width grew from 85 cm (1830) to 770 cm (1930), while production speeds rose from 5 m/min. (1820) to over 500 m/min. (1930).

The fourth stage (1950 to 1980), which was still dependent on the old methods as far as the mechanics were concerned,brought unprecedented changes in papermaking. Alongside further increases in web width and working speeds, there wasthe use of new materials (thermo mechanical pulp, delinked recovered paper, new fillers, processed chemicals and dyes),new sheet forming options (e.g. by twin-wire formers), neutral sizing, greater stress on ecology (closed loops) and, mostof all, automation. The operational impact of these changes was:specialisation in certain paper types; development of new paper grades (LWC - lightweight coated paper); corporatemergers; company groups with their own raw material supply\ and trading organisations; closure of unprofitable operations.

1980 ONWARDS

The fifth stage leads into the future. The evolution of new sheet-forming principles (with fluid boundaries betweenpaper and non-woven fabrics) and chemical pulp processes have been the main process improvements. However, the situationon the global market (increased demand, above all in the Third World, trends in chemical pulp prices, problems oflocation), are again raising capital intensity and encouraging the formation of big company groups with 36 internationaloperations. At the same time there are definite opportunities for smaller, local firms satisfying specific needs.

SWOT analysis – Indian paper industry strengths

- Large and increasing domestic paper market
- Up to date research
- Know how in non-wood pulping
- Local market knowledge
- Well-developed printing industry

Weaknesses

- High energy costs
- Fragmented industry structure
- Skilled manpower is not available
- Quality and availability of the domestic pigments and chemicals
- Ecological problems of most of the mills
- Infrastructure, transportation
- Low standard of converting industry
- High cost of raw material including wood, non-wood and waste paper
- Fibre shortage, especially virgin wood fibre
- High cost of financing
- Impact of high local taxes (sales tax, entry tax, etc.) on inputs of paper
- Low input into mill level R&D

Opportunities

- Massive Domestic market potential
- Modern, world scale paper machine would be cost competitive in most grades
- Forest plantation potential
- Integrates of combined wood and agro based papermaking
- Government literacy program – increasing demand for printing/writing papers

- Cheap labour

Threats

- Impromptu mills for international competition both on price and quality
- Decline in capacity due to ecological pressures
- Hindered forest plantations, deficit of wood fibres
- Weakening of competitiveness of domestic industry due to cost of basic inputs.

Strategies for Industry Development

Short term strategies

- Import of waste paper without duty and development of domestic recovery systems
- Rise plantations will take 7-8 years to grow – review raw material policy and agree on reforestation.
- Possible incentives for forest plantation establishment could be a combination of the following actions,
  - − Allocated degraded forest land for industry for plantations, and charge later based on cuttings
  - − Tax deductions/partial reimbursement of plantation costs for industry
  - − Increase of fillers and pigments in paper production
  - − Adapt international best production and process practices
  - − Develop policy for whole forest industry cluster including machinery and chemical suppliers
  - + Converting and end user industries

Long term strategies

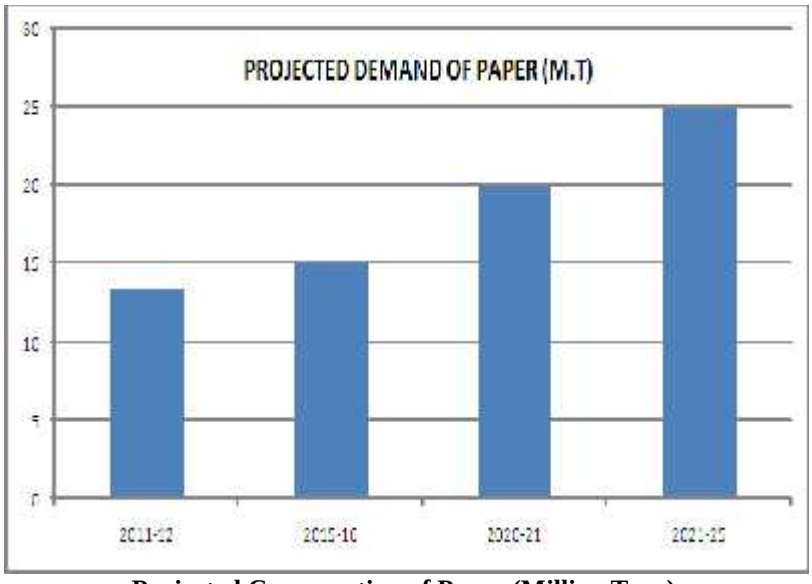
- Industry restructuring and consolidation – will ensure competitiveness also during international
- Recessions
- Full utilisation of plantations
- Large scale and cost competitive mill investments
- Global expansion of sales in large scale
- R&D
- Combination of wood/agro/waste paper as fibre raw materials

Opportunity of Paper Industry in India

The Indian Paper Industry accounts for about 1.6% of the world's production of paper and Paperboard. The paper industry in India has become more promising as the domestic demand is on the rise. Increasing population and literacy rate, growth in GDP, improvement in manufacturing sector and lifestyle of individuals are expected to account for the growth in the paper industry of India. BILT and ITC are among the largest producers of paper and paperboard in India. Many of the existing players are increasing their capacity to meet the growing demand. The focus of paper industry is now shifting towards more eco-friendly products and technology. Government of India has established rules and regulations to control the population and degradation of forest. These measures taken by the government has brought the significant changes in the paper industry of India.

According to "India Paper Industry Forecast & Opportunities, 2017" the paper industry in India is expected to grow at the CAGR of around 9.6% during 2012-2017, which will make the revenues of paper industry of India to reach up to USD 11.83 Billion by 2017. About 70% of the total installed capacity of paper production in India is accounted by Gujarat, Andhra Pradesh, Karnataka and Maharashtra. Uttar Pradesh, Tamil Nadu, Haryana, Kerala, Bihar and Assam together account for about 25% of the total paper production in India.

The mills use a variety of raw material viz. wood, bamboo, recycled fibre, bagasse, wheat straw, rice husk, etc.; approximately 35% are based on chemical pulp, 44% on recycled fibre and 21% on agro-residues. The industry employs 0.37 million people directly and 1.37 million indirectly. The major players of the industry are located in Andhra Pradesh, Tamil Nadu, Maharashtra, Punjab, Madhya Pradesh and Gujarat. In terms of numbers, Gujarat tops the tally with 130 units, followed by U.P (115), Maharashtra (112) and Tamil Nadu (88). Paper consumption is poised for a big leap forward in sync with the economic growth and is estimated to touch 13.95 million tons by 2015-16.This shows that there is a lot of headroom for growth in India. From a demand point of view, every one kg incremental per capita consumption results in additional demand of more than one kg a year. Besides, policy factors also have a key role to play in the growth of the domestic paper industry in India. The government's sustained focus on literacy, increased consumerismand expansion in organised retail are expected to positively affect paper consumption and demand in India.



Projected Consumption of Paper (Million Tons)

Finding and Suggestions

The new millennium will be dominated by the countless progress that has been made in computer science, thus triggering a complete change in our commercial and private communication and information behaviour. Clearly there will be a huge amount of databeing generated electronically, but the issue is how to preserve it. Once again, paper offers the most convenient and durable storage option. Reading a book will remain a great pleasure into the future and paper, as a ubiquitous material with its many uses, will continue to play an influential role. The paper industry in India is growing in a rapid speed withdemand increment and opportunity creation and attraction to the international players.

The India Ratings report in 2014-15, said paper companies would achieve higher profitability and free cash flows due to lower capital expenditure, and this would help in deleveraging. This is because the debt levels of these companies have peaked and cost benefits will accrue from backward integration (due to capital expenditure) and a larger scale of operations.

The key challenges to be met is market conditions which are poor and technology obsolete, lacking ability in achieving economy scale and lack of skilled labour.

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