



Study of India's Paper Industry- Potential and Growth in 21st Century

KEYWORDS

Wood Pulp ,Chemical Pulp ,Wood Based,Waste Paper Based,Agro Based

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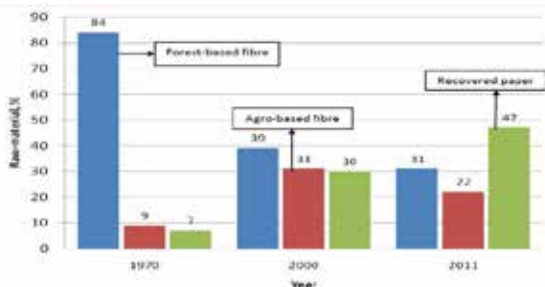
ABSTRACT This research Study focuses growth and development of paper industries in India. Paper touches our lives every moment. The paper industry in India is growing in a rapid speed with demand increment and opportunity creation and attraction to the international players. Paper products are used in education, healthcare, food, trade, communication and packaging. The population of India has been growing at a significant pace which has led to the increase in the paper consumption as each individual utilizes paper and other related products. Paper Industry in India is moving up with a strong demand push and is in expansion mode to meet the projected demand of 20 Million tons by 2020.

Introduction of paper industry in India:-

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

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

The Indian paper industry produces 10.11 million tons paper per annum, just 1.6% of the total world production of 394 million tons, paperboard and newsprint. Needless to say, at present, India lags far behind compared to international standards. The Scandinavian countries, USA, Russia, China, Indonesia and Japan 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.



Source: Paper Industry as cited in DIIPP, 2012, pp 3

"Some of the major players in the paper industry of India are BILT, ITC Paperboards & Specialty Papers Division, APPM, SPB, TNPL, Rainbow Papers, JK Papers Ltd., Century Pulp and Paper, The West Coast Paper Mills Ltd., Hindustan Paper and Abhisek Industries Ltd. "The industry requires around 2.5 million of land for pulpwood plantation to fully meet the requirement. Therefore, government support is required," said Yogesh Agarwal, president of the Indian Paper Manufacturers Association. Accordance with the economic growth and is estimated to touch 13.95 million tons by 2015-16. It is estimated that there would be an increase in demand of 1 million tons. As per industry estimates, paper production grew at a CAGR of 8.4% while paper consumption grew at a CAGR of 9% in 2012-13

History Of Paper Industry

The word paper derives from the Greek term for the ancient Egyptian writing material called papyrus, which was formed from beaten strips of papyrus plants. The immediate prede-

cessor to modern paper is believed to have originated in China in approximately the 2nd century CE, although there is some evidence for it being used before this date. Papermaking is considered to be one of the Four Great Inventions of Ancient China, since the first papermaking process was developed in China during the early 2nd century CE by the Han court eunuch Cai Lun. 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 Europe in the early 12th century. Mechanized 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 Fenerty and German inventor F.G. Keller had invented the machine and process for pulping wood for the use in paper making.[1] 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 techniques 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 bast fibers of the mulberry tree (kozo in Japanese).

Following the cooking process, the long, uncut 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 immersions 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, neared Samarkand they too became acquainted 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 screens made of reeds, thin sheets were made and then 'coated' with starch paste. This gave Arabian paper its good writing properties 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 commod-

ity called 'paper' that was growing in importance for public and intellectual life. The Nuremberg councillor Ulman Stromer (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 concentration of craft activities in large operations, the 'manufactories', which were dependent on skilled papermakers organised into craft groups. The efforts made to step up production as 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 developed in England, mostly by Donking and the Fourdrinier brothers. Shortly afterwards other types appeared, like the Dickinson's cylinder machine, and machines which filled wire moulds transported on an endless chain and couched the sheets on an continuous felt. Flat screen and cylinder machines, which were first seen in the 19th century, were continually improved and extended to include a dryer section. This soon led to a considerable widening of the paper web and to an increase in production speeds. It also heralded industrialization. In this new era, the small operators who were unable or unwilling to afford machines sought to survive with piece-work or by producing special grades, but they were sooner or later compelled to 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 overlapping periods, each marked by definite trends.

In the first stage (from about 1800 to 1860), all work sequences previously 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, units for reeling, smoothing and packaging).

During the second stage (about 1840 to 1880), efforts were made to obtain rag substitutes 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).

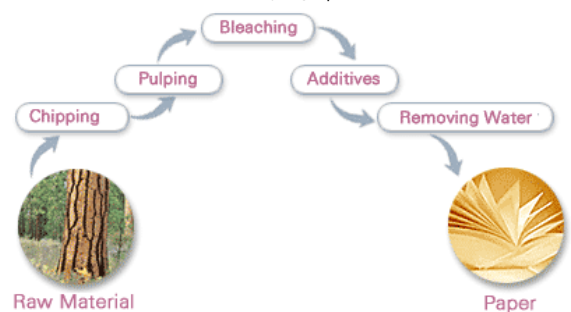
The fourth stage (1950 to 1980), which was still dependent on the old methods as far as the mechanics were concerned, brought unprecedented changes in papermaking. Alongside further increases in web width and working speeds, there was the use of new materials (thermo mechanical pulp, deinked

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, most of all, automation. The operational impact of these changes was:

specialisation in certain paper types; development of new paper grades (LWC - lightweight coated paper); corporate mergers; 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 between paper and non-woven fabrics) and chemical pulp processes have been the main process improvements. However, the situation on the global market (increased demand, above all in the Third World, trends in chemical pulp prices, problems of location), are again raising capital intensity and encouraging the formation of big company groups with 36 international operations. At the same time there are definite opportunities for smaller, local firms satisfying specific needs.



SWOT analysis – Indian paper industry

Competitive strengths

- ❖ Large and growing domestic paper market
- ❖ Up to date research institute (CPPRI)
- ❖ Know how in non wood pulping and applications
- ❖ Well developed printing industry
- ❖ Local market knowledge

Competitive weaknesses

- ❖ Fibre shortage, especially virgin wood fibre
- ❖ Small and fragmented industry structure, many non competitive mills/machines
- ❖ Highly skilled and job specific manpower is not available
- ❖ Quality and availability of some of the domestic pigments and chemicals
- ❖ Environmental problems of most of the small pulp mills and also some big mills
- ❖ Low standard of converting industry
- ❖ Infrastructure, transportation
- ❖ High cost of raw material including wood, non wood and waste paper
- ❖ High energy costs
- ❖ High cost of financing
- ❖ Impact of high local taxes (sales tax, entry tax, etc.)
- ❖ Low input into mill level R&D

Competitive opportunities

- ❖ 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
- ❖ Low labor costs (allow eg. cost effective sorting of imported mixed waste)
- ❖ Export potential

Competitive threats

- ❖ Unprepared mills for international competition (WTO entry) both on price and quality
- ❖ Decline in capacity due to environmental pressures
- ❖ Decline in capacity as some of the segments/group of mills are unable to compete at national and international levels with respect to quality and cost of products.
- ❖ Delayed forest plantations, deficit of wood fibres
- ❖ Weakening competitiveness of domestic industry due to shortage and cost of basic inputs

Managing Risks at Papers Industries

Risks are integral to business. At papers industries, risk management encompasses an organized and coherent process of identifying, assessing and managing the existing and potential risks in a planned manner. The management strives hard to balance business risks and opportunities and analyse potentially negative or positive outcomes.

❖ Business Environment Risks

Competition as well as supply-demand imbalances in the paper, packaging and wood product industries – which are mature, capital-intensive and highly competitive – impact profitability. Economic cycles and changes in consumer preferences may reduce product demand and affect profitability. The ability to respond to evolving customer tastes and develop new products on a competitive basis entails continuous market and end-use monitoring. Increased input costs comprising energy, fibre, other raw materials, transportation and labour might dent profits. Securing access to low-cost supplies and proactive management of costs and productivity are of fundamental importance.

❖ Business Development Risks

Business development risks are mainly related to the Company's strategy and also include risks related to the supply and availability of natural resources, raw materials and energy.

❖ Raw Material Risks

Non-availability of fibre may disrupt the supply chain, forcing the Company to pay higher prices or alter manufacturing operations. The primary raw materials consumed by the Companies are bagasse (a by-product of sugarcane), wheat straw and other long-fibres like softwood, old gunny and kraft carrier board etc.

❖ Human Resource Risk

A talented and hardworking human pool is the key to the success at Papers industries. The Company evaluates the competence of its personnel through surveys and other assessments. Structured programmes are conducted to train employees and an annual succession planning Process hedges against attrition.

❖ Climate Change Risks

To mitigate the effects of climate change, Paper industries seeks opportunities to reduce its carbon footprint. The Company implements clean, affordable and safe energy practices required for the production, transportation and reduction of energy consumption. Additional measures include energy-efficiency initiatives, use of carbon-neutral biomass, utilisation of combined heat and power and sequestration of carbon dioxide in forests and forest products.

❖ Market Risks

Risks related to demand, price, competition, customers, suppliers and raw materials are regularly monitored and evaluated to get a perspective of the Company's profit-making potential. Cyclical product prices are affected by changes in capacity and production in the industry. Customer demand for products, which also determine prices, is influenced by economic conditions and inventory levels.

❖ Financial Risks

Financial risk management insulates against fiscal volatility.

The objectives and principles are defined in the Company's financial risk policy, which is regularly reviewed and approved by the Board of Directors. Besides, compliance is monitored by internal controls and audits.

❖ Information Technology Risk

In a business environment information is necessary to support business processes the development of new IT infrastructure and monitor IT processes continually. These activities reduce risks related to internal control and financial reporting, besides promoting informed decision making.

Scope of paper industry in India

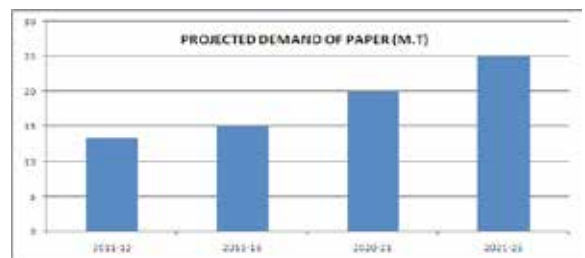
The Indian Paper Industry accounts for about 1.6% of the world's production of paper and Paperboard. Paper in India is expected to see an average growth of 7 per cent during the next year according to prediction by the Indian Pulp and Paper Technical Association.

"The sector is expected to grow 7 per cent per annum. From the current about Rs 35,000 cr. size, the turnover of the industry is likely to touch 60,000 mark by 2025," said M B S Nair, president, IPPTA. Currently, the Indian industry is accounts to about 2.5 per cent of the global production of paper.

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 per capita consumption of India stands at only 9.3 kg compared to China's 42 kg, Indonesia's 22 kg, Malaysia's 25 kg and the US' 312 kg. Studies have shown that the growth of paper consumption changes from linear to exponential trends once the GDP growth rate crosses the double digit mark. Analysts often draw comparisons between the growth seen in bottled drinking water and tissue paper industries. Even if one assumes an average 9% GDP growth rate in the medium term, linear extrapolation suggests that by 2025, the country will consume over 24 million tons of paper.

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.



- Projected Consumption of Paper (Million Tons)

"This indicates 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 mt 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 consumerism and expansion in organised retail are expected to positively affect paper consumption and demand in India," said Yogesh Agarwal, managing director and chief executive of Ballarpur Industries.

Conclusion-

The new Millennium will be dominated by the tremendous progress that has been made in computer science, thus triggering a complete change in our commercial and private communication and information behavior. Does this mean that the paper era will come to an end? The answer is most definitely "No". Clearly there will be a huge amount of data being 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 with demand 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 labor.

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