

## Prospects of Tissue Paper Industry in India

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### Abstract

In this paper an attempt has been made to highlight the Indian tissue paper industry their products, needs objectives, raw material and technology, increase in use of recycled fiber, contaminants composition of mixed office waste, a typical deinking process flow with close water loop has been described for making deinked pulp from recycled fiber expecting the quality of product to be similar to virgin pulp with minimum variation, category-wise usage of tissue paper, global market for tissue paper, world tissue consumption, expected growth rates of world tissue consumption, per capita consumption of tissue region-wise, why tissue trade is remain a regional business, recent Asian market trends, growth rate of Asia-pacific tissue consumption by main countries, per capita tissue consumption in selected country in the Asia-pacific regions, growth of tissue industry in India and category-wise retail tissue growth India.

### Introduction

The Indian paper industry has close linkages with economic growth as higher industrial output leads to increased demand for industrial paper for packaging, increased marketing spend benefits the newsprint and value-added segments, and increased education and office activities increase demand for writing and printing paper. Fitch forecasts economic growth of 8.5% for India during financial year ending March 2012 (FY12), which will benefit the demand for paper.

There are about 750 manufacturing units engaged in production of paper, specialty paper, newsprint and paperboards in India which have the annual capacity around 10 million tonnes, likely to be 20 million tonnes by 2020, but a continuing raw material shortage remains one of the major hurdles before the industry.

According to the Associated Chambers of commerce and Industry of India (Assocham), Indian paper industry is poised to grow and touch 11.5 million tones from 9.18 million tones to 2011-12 from 2009-10 at the rate of 8% per annum. The ASSOCHAM paper on "Growth of paper Industry in India", Indicates that per capita paper consumption increased to 9.18 kg on 2009-10 as compared to 8.3 kg during 2008-09. Still, the figure is low (9.2 kg) compared to 42 kg in China and 350 kg in developed countries.

Government has placed Paper industry as one of the 35 high-priority lists. With this, India is rated as 15th largest in world engages about 1.5 million people with the help of Rs. 2500 crore Government subsidy. There are few state owned and private players in the emerging paper industry like Hindustan Newsprint Ltd (HNL), Tamil Nadu Newsprint and Papers Ltd (TNPL), Ballarpur Industries Ltd (BILT), Seshasayee Paper & Board Ltd. (SPBL), ITC Paper.

Indian Government has completely



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delicensed the paper industry under the Industries (Development & Regulation) Act with effect from 17th July, 1997. The interested entrepreneurs or existing players now require to file an Industrial Entrepreneur' Memorandum (IEM) with the Secretariat for Industrial Assistance (SIA) for setting up a new paper mill or substantial expansion of the existing mill in permissible locations. The foreign direct investment is allowed upto 100% in paper industry except those who require industrial license with prior approval from Reserve Bank of India.

The domestic demand for paper is set to far surpass supply, with the growing emphasis on education and alternative uses of paper. As well, the demand for upstream market of paper products, like, tissue paper, tea bags, filter paper, light weight online coated paper, medical grade coated paper, etc., is growing up. These developments are expected to give fillip to the industry. Improvement of key ports, roads and railways and communication facilities will help the pulp and paper industry to a large extent.

### Tissue Paper Industry

Tissue paper industry has emerged as a new sub-segment within the paper industry in India. Tissue Paper is named after the scientific references to a thin layer or cells. Tissue paper are manufactured in modern factories using tree from sustainable forest, agriculture residue and recycled fiber.

### Raw Material & Technology

A continuous expansion in pulp and paper industry has been noticed in last few years. The availability of raw material as wood, agro residue is not enough to meet requirement, with the result an increase in use of recycled fiber is continuing to grow and, with advance in technology, will most probably become the fiber of choice to produce most grades of paper. In the current marketing environment, the customers are expecting the quality of recycled products to be similar to virgin pulp, with the minimum variability. As this demand grows, the challenge to produce and maintain high quality deinked pulp will also continue to confront our industry. However, the perception persists that the recycled fiber e.g. deinked pulp from CPO, Color Printed Paper, Simili, ONP and mixed office waste, is difficult to produce at a uniform high quality to maintain paper machine run ability. This relates to process reliability and product "Uniformity" or the ability to provide the right product over and over again in an acceptable quantity and quality.

Deinked pulp used for Printing and Writing Paper is generally adopted to replace Hard- Wood virgin Kraft pulp as a raw material. But now a days same Deinked Pulp is being used in Tissue paper making process. Accordingly the paper makers basically want to keep good quality equivalent to the virgin pulp. The quality mainly evaluated in fiber characteristics, brightness, residual ink particles, dirt and stickies. The quality target is of course varied depending on the rate of deinked pulp introduced and final paper grade.

The highest using rate of CPO and

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waste Simili and color printed coated paper such as catalogues and fine grade magazines deinked pulp seems to be approximately 20-80% for making of tissue paper. Recently, recycling of mixed office waste is attracting considerable attention as new resources of raw material for tissue and printing - writing paper, because of cost reduction by using less expensive material and reducing waste disposal from towns. Since the mixed office waste, however, contains a lot of contaminants as shown on the Table-1.

After lot of experiences, modification carried out in the deinked pulp making process the basic system of deinking process is composed by following equipment to remove ink, dirt, sticky and plastic to produce uniform good quality deinked pulp from recovered fiber;

- ▶ High consistency pulping ( At approx. 15% stock consistency)
- ▶ Dilution Poire (At approx. 3.5 to 4.5% consistency)

- ▶ Deinking cell (at approx. 0.8 to 1.2% consistency)
- ▶ Low consistency Forward Cleaner, (At approx. 0.6 to 1.0 % consistency)
- ▶ Light weight contaminant Cleaner (At approx. 0.6 to 1.0 consistency)
- ▶ D.N.T washer from approx. 0.9 to 15% consistency
- ▶ Screw press/belt press from 15 to 30% consistency
- ▶ Hot mixture and disperser unit from 25 to 30 % consistency)
- ▶ Reject handling: Fiber Recovery, Rotary Screen, Belt Press
- ▶ Filtrate cleaning, Microfloatator

	U.S.A	Europe		Japan
		Standard	Low Grade	
White Ledger	65-75%	60-70%	40-50%	35-60%
Color Ledger	8-9%	13-15%	15-25%	10-25%
Heavy Coated Paper	2-3%	2-3%	5-8%	5-7%
Low Grade Magazine	8-11%	8-10%	13-15%	4-6%
Unbleached Board	0.5-3%	0.5-3%	2-4%	2-4%
NCR, Label, Envelope	2-5%	2-5%	5-15%	5-8%
Plastic & Others	2%	2%	2-4%	15-30%

*Source: 1997 Korea Recycling Symposium and Exhibit*

There are many subjects to be solved in case of using such material for tissue and printing-writing paper.

As mentioned above colored printed imported paper, CPO and simili (chemical pulp rich) are generally used for tissue and printing –writing paper, and in recent years, mixed office waste paper deinked pulp is attracting considerable attention as a raw material. Those deinked pulp must be;

- ▶ High Brightness
- ▶ Less Ink Speck residue
- ▶ Less dirt
- ▶ Less sticky content
- ▶ Stable quality

There are several subjects and problems to be solved in order to achieve those targets.

- ▶ High consistency Cleaner (At approx. 3 to 4% stock consistency)
- ▶ Coarse Screen with perforated basket, 1.4 to 1.6mm? (At approx. 2.5 to 3% consistency)
- ▶ Reject Coarse Screen with perforated basket, 1.6 to 1.8mm? with washing cycle
- ▶ Coarse Screen with slotted basket, 0.20 to 0.25mm (At approx. 2 to 3% consistency)
- ▶ Reject Coarse Screen with slotted basket, 0.30mm with washing cycle.
- ▶ Fine Screen with slotted basket, 0.15 to 0.20mm (At approx. 1 to 2 % consistency)
- ▶ Reject Fine Screen with slotted basket, 0.20-0.25mm

Beside above the proper chest design is probably the most neglected area in a recycling system that can ensure uniform pulp. Chests, Towers or Tanks are the key link between the process module units. Therefore, it is important that one must pay attention to design in terms of shape, retention time agitation and air entrainment. Most design teams reduce the number of chests or their size to save on cost of the project but most operating personnel would like to have more. In this case, more is better. More chests with adequate retention time and proper agitation provide for a smoother operation during upsets and under normal conditions helps to reduce process variations.

Another important feature in chest design should be to ensure that there is minimum air entrainment. This may require the agitator to be turned off at low levels and/or vortex breakers at pump suction or special chest design to promote air removal. Designed the chest after the flotation cells to remove air entrained in the cells. This assured that air had no impact on the capacity and operation of the subsequent washers.

A typical Deinking process flow is described for making Deinked Pulp from recycled fiber, shown in Fig.1.

Device	Feed Cons.	Accept Cons.	Ash Content			Hydr. Reject Rate	% Ash Removal
			Feed	Accept	White Water		
Sidehill Screen	0.9	3.8	7.8	3.8	33.8	80.0	66.7
Hydradenser	4.5	14.0	15.9	8.7	31.5	78.1	61.2
Press	12.0	29.2	8.4	8.1	62.5	51.6	19.6
DNT Washer	1.6	11.5	17.3	1.2	58.0	94.8	93.5

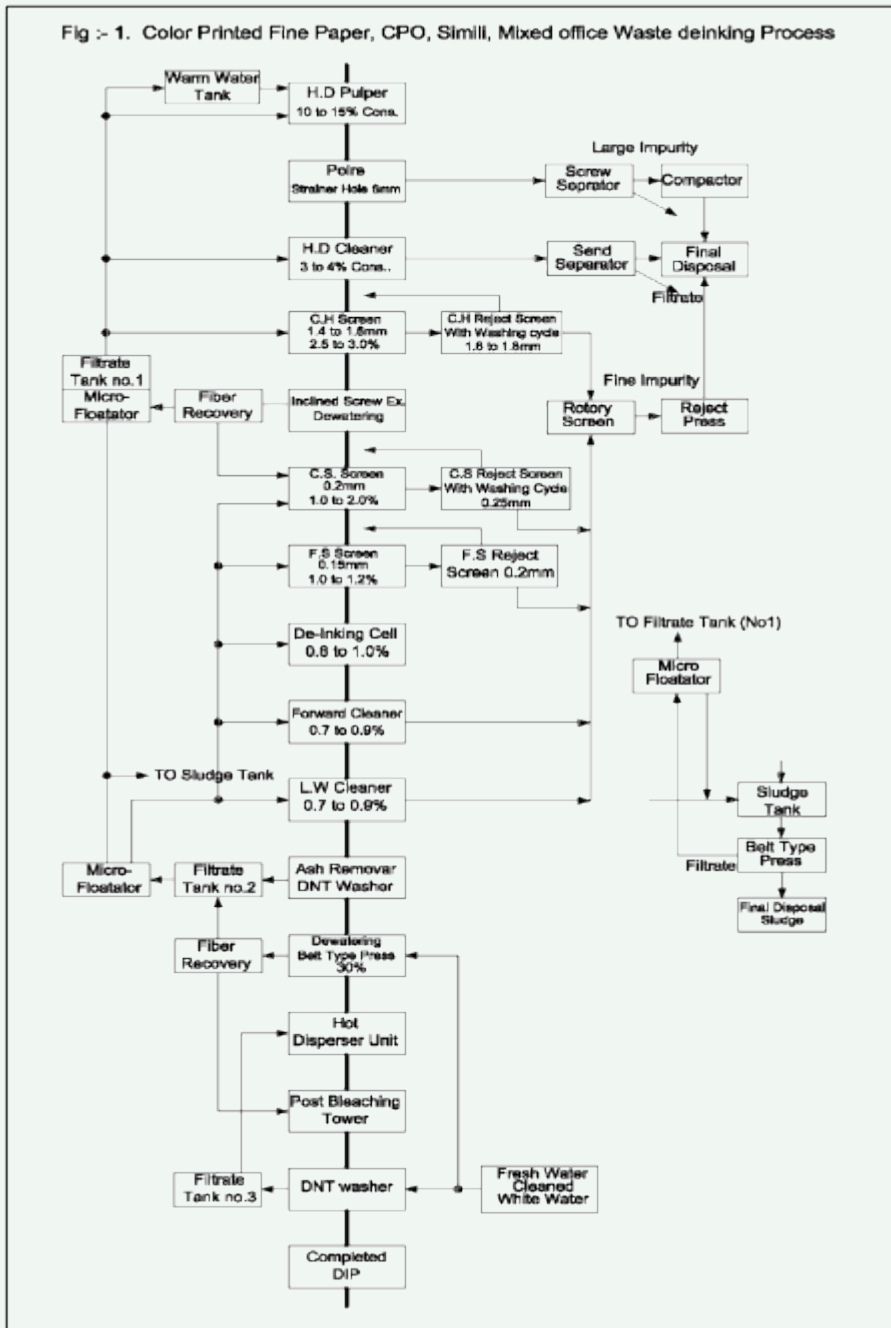


Fig. 1: Color Printed Fine Paper, CPO, Simili, Mixed office Waste Deinking process

In Fig.1 DNT washer (Kadant lamort make) has considered to remove the Ash and partial Ink instead of ordinary and conventional washer, the result of DNT is shown in Table-2

To make good quality tissue paper, ash should not more than 2%, where as most of the waste paper contains 5-30% loading material as ash, therefore efficient cleaners and washing equipment are required to bring down the ash content. The Kadant Lamort DNT washer can wash and thicken stock up to 15% consistency. It is ideal for removing ink, ash and other contaminants from a variety of furnishes. High speed dewatering permits efficient

removal of ink and ash from fiber, producing high tonnages of thoroughly washed stock in a compact space. The unit is cantilevered to use an endless wire.

Tissue Paper is one of the most important products for hygiene development for all kind of wiping and cleaning. But tissue Paper has other many functions in society, both for Consumers and for many businesses. Tissue paper is used for gifts wrapping and catch a sneeze. Both are manufactured in thin layer or sheets, facial Tissue is soft and absorbent while wrapping tissue is smooth and hold its shape. White Tissue Paper was first used to wrap gifts in the early 1900's facial

Tissue was developed by Kimberly Clark in the 1920's from wadding used in sanitary napkins. Kleenex is now a household word and synonymous with facial tissue. Both Tissue paper and Facial Tissue come in a broad range of colors, pattern and sizes to meet every consumer whim - a modern convenience that's nothing to sneeze at.

Tissue at home categories include Toilet Paper Household Towels, Paper napkins facials and handkerchiefs, while away from home categories also include hand towels (for the best hand hygiene) and wiper for cleaning tissue paper products are unique for hygiene Convenience, disposability and They are essential ingredient of a healthy and busy life.

It is revealed from the Fig.2 that the major Tissue Paper i.e. 66.6% is being used in the toilet, thereafter Facial Tissue, Handkerchief, and Hand Towel, very less quantity i.e. 0.3% is being used in the kitchen as kitchen towel.

According to Euromonitor's Ian Bell reports, the Indian retail tissue market registered some of the fastest value growth globally during 2009, growing by 15% to reach \$47 million (Rs2 billion), with initial results suggesting that 2010 will see further double digit growth.

Thus the status of tissue papers and toilet paper industry in India is estimated to be as market sizes between Euros 30-50 million and the need driven by advent of large MNC offices, where tissues are essential in washroom hygiene. But an ideal replacement in restaurants and commercial spaces, as water is becoming scarce and increase in organized retail - a main driver of the sales in the home market.

**Global Market for Tissue Paper**

Global sales of tissue paper 30,000,000,000 U.S. dollars, yield more than 20,000,000 tonnes. North America and Europe, the total consumption is of over 60%. In the 1990s, the global market toilet paper at an annual rate of nearly 4% growth.

Tissue paper in the world per capita consumption of 3.4 kg, has large regional differences. North America's highest per capita consumption, 22kg, followed by Western Europe and Japan, in order to 13kg. The Chinese and other Asian regions to 2kg or below 2kg. These figures show that the world's tissue paper industry in the future there is still great potential for development.

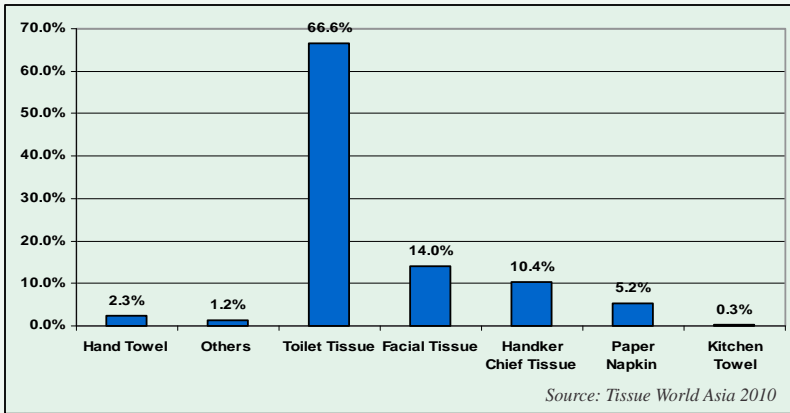


Fig.2: Category-wise Usage of Tissue Paper

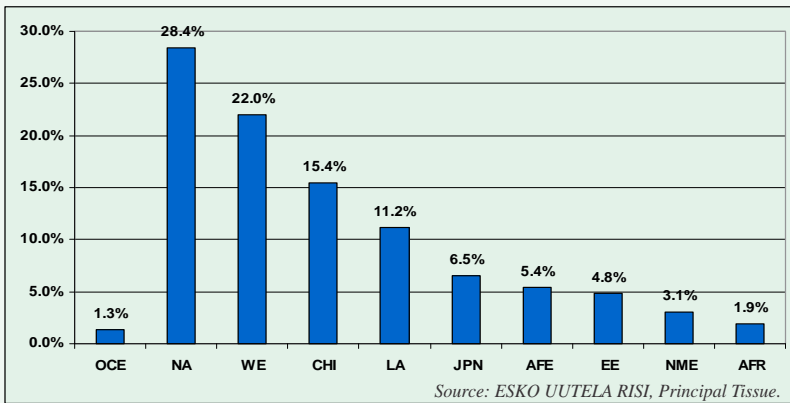


Fig.3: World Tissue Consumption 2009

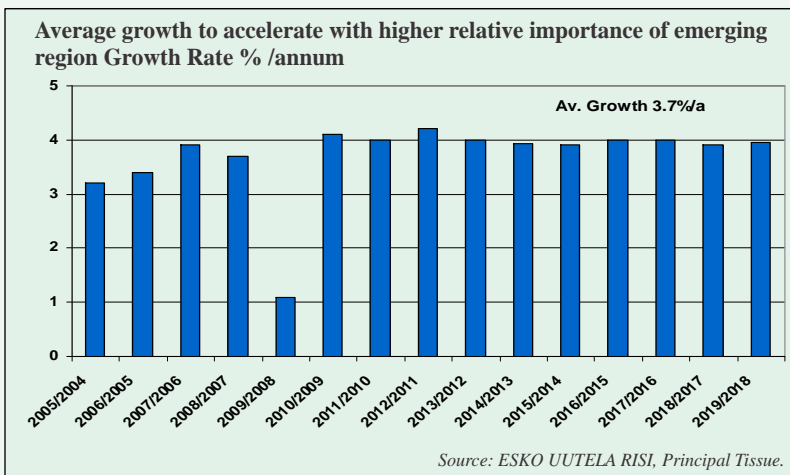


Fig.4: Expected Growth Rate of World Tissue Consumption

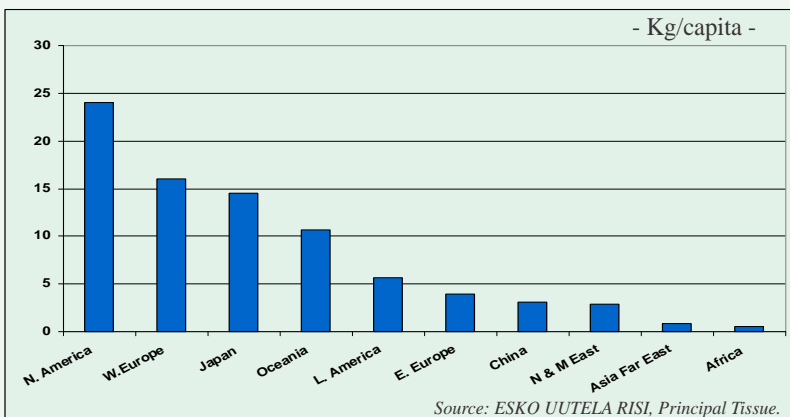


Fig.5: Per Capita Consumption of Tissue – Region-wise

The expected growth rate of world tissue consumption is average 3.7% per annum. If the global tissue demand will continue to grow at a rate of 4% per annum, Global tissue consumption will be 50 Million tonnes higher in 26 year. China is very quickly moving from domestic to an internationally competitive industrial structure with large modern machines built not only by the main players but also by some new business participants. In China 3.14 kg per capita consumption was counted in 2009, where as in India it is less than 0.1 kg which is at nascent stage. Globally the tissue business is increasingly, expanding in emerging market areas-China is particular but Latin America and Asian Far East will also be very important. There are very good long term growth prospects in all the Asian tissue market - with china leading but the others, even India, expected to follow. Some how the tissue industry as apposed to the large pulp and paper industry has never been truly global, so tissue trade is mostly regional. About 20% of the world’s tissue production is traded over country borders. The absolute majority as total trade are within region. Beside this tissue industry in developing countries are facing problems like availability of disposable income, good raw material, environmental challenges technology and good quality of tissue making machines. Therefore the paper making and converting machine technology is being developed to fulfill the increasing need for higher quality.

Use of tissue products is an integral part of the lifestyle of developed countries, with 80% consumption of tissue in toilet and towel grades and 20% in napkin and other over-the-table tissue products. Global Consumption of Tissue is closed to 30 million tonnes, which represents about 7% of total paper and Paper board Consumption. Tissue is currently the fastest growing major grade of Paper. It will hold that rank for next 20years.

Fig.3 shows that the highest consumption of Tissue is in the North America i.e. 28.4% and the lowest consumption in the Oceania i.e. 1.3%.

Per Capita Consumption of Tissue By Region, 2008, if the Tissue demand will Continue to grow at a rate of 4 % Per annum, the global Tissue Consumption will be 50 million tonnes higher in 26 years which shows very high potential and positive demand outlook

Fig.5 shows that the highest per capita consumption of Tissue is in the North America and lowest in Africa.

### Competition in Tissue Industry

Malaysian manufacturer Nibong Tebal Paper Mill (NPTM Holdings) currently takes the number one spot across all retail tissue products with 28% of the market. While NPTM looks unlikely to lose its prime position in tissues anytime soon, second placed Wintex Tissues, which currently holds a 13% share and saw the biggest gains during 2009, has cemented its commitment to tissues and become an increasingly competitive force – as have many domestic players. Domestic players have been quick to learn from the international players in terms of improving their own products, and introducing them at lower prices, turning up the heat on international manufacturers.

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Adding to the competitive environment, in each region there are several regional players, such as Origami Tissues, which holds 6% of the total retail value of tissue market and Jackson Paper Products (1%), which have strong brand equity in their respective regions, while their cheaper price points make them a lot more popular than imported brands and inspire consumer loyalty.

## Why Tissue Industry Remain Regional Business?

- ▶ The structural changes in the larger Pulp & Paper Industry will influence the tissue business and the companies.
- ▶ Within the tissue industry the focus and specialization trend has not been as strong a consolidation trends.
- ▶ The high transport costs do not allow specializing of production in the global context for to large extent to benefit of production in low cost regions.
- ▶ The tissue trade is therefore very regional because out of total global consumption 20% is traded over country borders, 4 million tons as finished products and less than 2 million tons as mother reels.

## Recent Asian Market Trends

Total Tissue market size of main Asia Pacific was 8.1 million tonnes in 2009 detail is shown in Fig.6. As per Fig.6, tissue market is at a very nascent stage in India. The Indian market for Tissue Paper is only 1% of the total Asian market i.e. 8.1 million tonnes, where as the major market share goes to China i.e. 55% of 8.1 million tones. It is revealed from the Fig. 6 that the tissue market in the China is growing very fast. It is found that the Tissue Paper has greater potential particularly with the advent of large MNC offices; Where Tissues are considered essential in washroom hygiene. Further it is an ideal replacement and commercial spaces, Where Water is becoming Scarce.

There are two main drivers for Tissue consumption growth; Population; as per capita consumption. Though tissue consumption is not very sensitive to cyclical variation in the Economy, It grows faster with higher economy growth and this impact is most evident in developing Countries.

Average per capita consumption continues to rise. In the developing countries, large masses shifting towards high income categories and consequently there is a major increase in consumption of Tissue Paper which is seen in China, India, Indonesia, Turkey, Brazil and other heavily populated developing Nations. Due to improving living

Standard and higher disposal incomes, the demand for branded high quality paper and hygiene Paper Product has increased in last 3-4 years. The demand for upstream Market Paper Products like Tissue Paper, tea bags filter Paper, Light Weight Coated Paper, medical grade coated Paper etc. is Picking up with the growth of Economy. These developments are expected to give strong support to the Paper industries.

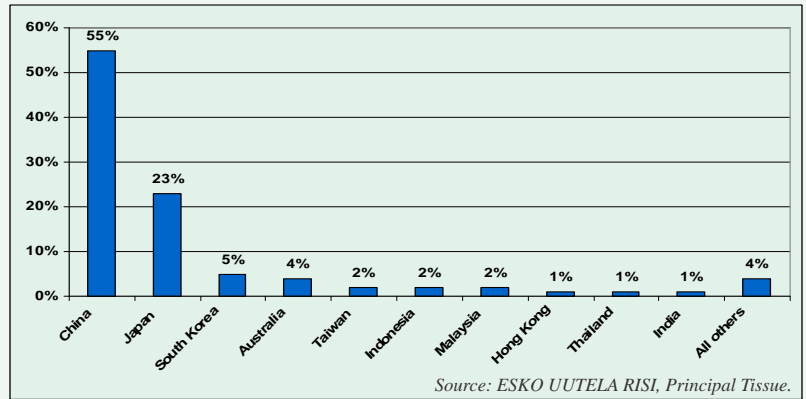


Fig.6: Asia-Pacific Tissue Markets, 2009

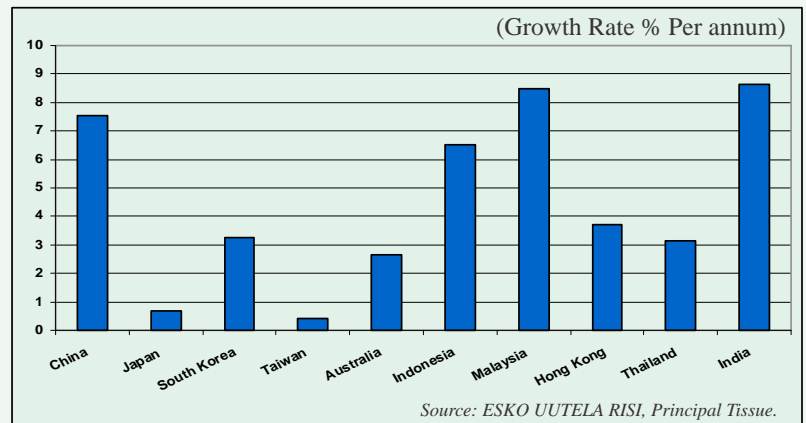


Fig.7: Growth rate of Asia-Pacific Tissue Consumption by main Country, (2001-2009)

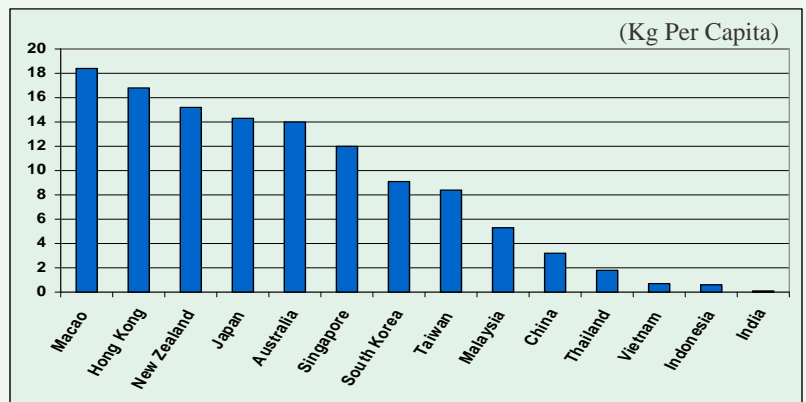


Fig.8: Per Capita Tissue Consumption in selected countries in the Asia Pacific Region 2009

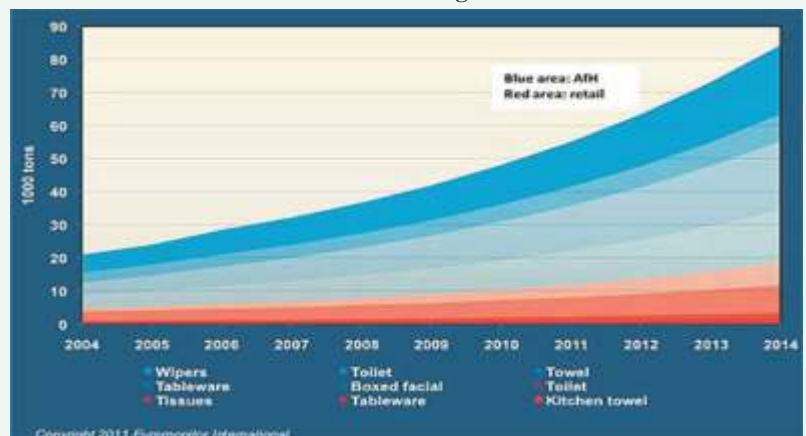


Fig.9: Category-wise Retail Tissue Market Growth in India Forecast 2004-2014

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Fig.8 shows Per Capita Tissue Consumption in India is less than 0.1 kg which is at nascent stage.

### Growth of Tissue Industry in India

Retail tissue products in India remain a niche concern. Even with its vast population, India still consumes fewer tissue products than Cameroon or Costa Rica, so in spite of its clear latent potential, the Indian market presents manufacturers with an uphill struggle if they are going to broaden usage to the extent that India becomes a significant market.

### Domestic Prospectus of Tissue Industry

In India tissue paper is consumed by growing upper middle class and people in urban areas, who are affordable to buy the product. In fact, the following factors are considered to be influencing the India tissue paper industry:

- ▶ Awareness among Indians to use soft tissues
- ▶ Increasing disposable income among urban youths
- ▶ Health and Hygiene factors
- ▶ Greater exposure to Western modes of living

### Tissue Remain as Urban Products

Tissue products remain largely urban products, with gains in the massed ranks of India's rural population (which currently accounts for just 5% of value sales) slow to materialize due to a combination of lower income levels compared to urban centres, higher price point, lack of advertising as well as the broad use of durable cloth substitutes to disposable retail tissue brands. In combination, these factors combine to prevent rural consumers from switching to disposable tissue-based products something which is very likely to continue over the long term.

The widely held perception of retail tissue products in developed economies as an inexpensive necessity bought regularly along with the weekly grocery shop, is far from the case in India. Here the relatively high price point for a product which is seen as non-essential means that only more affluent consumers have the inclination or the means to afford products such as toilet roll or kitchen towel. As such they continue to be impulse purchases rather than necessity buys.

There are also significant cultural

barriers to overcome for the industry with many Indian's seeing toilet roll as unhygienic, which means well over 80% of the population would not consider using it. Although this attitude is perhaps softening among the growing urban middle classes, who are more regularly tempted into the tissue category through new purchasing behaviours encouraged by the modernization of the Indian retail sector, tissue remains a bit part player in Indian FMCG.

While the twin factors of modernization and urbanization are acting as the key growth engine for the category, per capita consumption remains woefully low with consumption measured at less than 100 grams per person annually where the global average stands at 3.4kg.

The high levels of value growth reported in 2009 and 2010 stem from a very narrow and largely urban consumer base whose ranks, though swelling in number, represent a drop in the ocean compared to the vast numbers who live outside India's urban centers. With such a large gap between urban and rural income levels, the one billion or more consumers the Indian market is often claimed to represent is little more than a headline statement and has little to do with either the real market conditions or its true potential.

### Tissue Viewed as Hygiene Product

Unlike the vast majority of national markets, where toilet roll typically represents the largest category within retail tissue, for cultural, social and economic reasons this is not the case in India.

Indeed tissues represent the largest tissue category in India and reached \$19 million in 2009, driven by 12% value growth. The threat of swine flu and the heightened awareness of personal health and germ prevention it created served as key drivers to increase the number of consumers looking to buy boxed facial tissues for their homes, offices and cars in

the hope that more thorough hygiene practices would offer greater protection against the virus.

Boxed facial tissues, which are generally used in cars and offices, are reported to account for 65% of retail value sales in India, as outside the home cheaper, re-usable cloth handkerchiefs currently remain the preferred option for the vast majority. However, this preference is slowly changing and more commuters are opting to use pocket tissues on a daily basis, aiding volume and value growth. This is not to say, however, that cloth handkerchiefs will be forgotten overnight. The use of cloth handkerchiefs is ingrained in Indian society and their continued use provides the biggest threat to growth for the category.

Despite the barrier to higher penetration rates that cotton handkerchiefs pose, constant value growth is still expected to increase rapidly through to 2014 and beyond, and a CAGR of 10% is expected for the category, with boxed and pocket tissues predicted to enjoy broadly similar levels of growth. With urban consumers in particular more exposed to retail tissue products, especially in retail where availability is improving, value growth rate is expected to trundle on for some time to come.

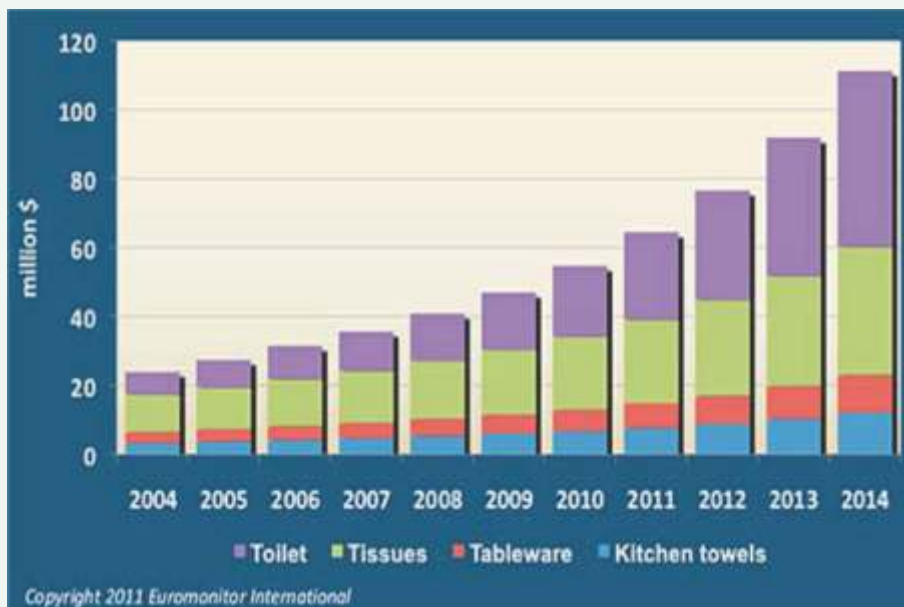
### Usage of Tissue as Toilet Paper

Toilet paper consumption grew by 22% – the largest value growth of any retail tissue product – to reach \$17 million in 2009. As greater numbers of Indian consumers have become familiar with toilet paper, demand has been steadily on the increase. These high levels of value growth have come despite fluctuations in unit price through 2009 and 2010, with more manufacturers entering the category with cheaper products, including private label products from Trent Retail in particular.

Despite the high growth levels, it must be remembered that toilet paper remains a niche product in India and is

**Table-3: Forecast of Prices of Tissue Categories in Indian Market (2004-2010)**

India: Retail Tissue market growth forecast 2004-2010 Current prices in US dollars at 2009 exchange rate				
Geographies	Categories	2004-10%	2004-10 CAGR%	2004-10 Absolute
India	Kitchen towels	102.5	12.5	3.4
India	Paper Tableware	92.4	11.5	3
India	Tissues	94.7	11.7	10.3
India	Toilet paper	215.4	21.1	14.1



**Fig.10: Growth Rate of Toilet Paper Product Categories Forecast 2004-2014**

widely viewed as unhygienic or as a premium and almost frivolous product by the vast majority.

Affluent Indians and those who have travelled or lived abroad are more comfortable with the product, and sales growth has largely been driven by these groups. Despite this cultural barrier, toilet paper is predicted rapid expansion as distribution broadens. This will be true not only in more affluent urban areas, but also within the lower income groups as a growing number of Indian consumers become gradually more influenced by Western bathroom culture.

Over the medium term, toilet paper is expected to increase its presence in urban households, and it is this sector of society that is expected to spearhead the predicted CAGR of 20% to 2014. The category is expected to overtake tissues in terms of market value in 2011 to become the largest tissue product category in the country, which is significant as it will set the Indian market more in line with its peers and indicates that cultural norms are changing, however slowly.

### Health and Hygiene Kitchen Towels

Kitchen towel now stands at \$6 million, benefiting from 11% value growth during 2009. Despite registering growth in double figures, kitchen towels saw the smallest gains of all tissue products. The vast majority of Indian housewives continue to use cloth towels in the kitchen, and kitchen towels remain a novelty product used sparingly, if at all. As would be expected from such a niche, as yet non-necessity product, availability

remains limited to large towns and cities and to modern grocery retailers such as India's burgeoning supermarket retail channel.

For these reasons kitchen towel brands remain very much in their infancy in India, but with urban consumers becoming more affluent and looking for specialized products to use around the home, the category is expected to see broader penetration over the medium term, with a CAGR of 10% predicted through to 2014.

Kitchen towels are currently most often used to soak up the excess oil found in fried food made in the home, and a manufacturer willing to spend on advertising to launch a towel specifically for this use could exploit something of a gap in the market. However, to broaden the current consumer base and encourage consumer trial, which will be key to raising category awareness and setting the foundations for long-term growth, manufacturers would be wise to try and bring average unit prices down to within reach of a wider swathe of Indian consumers.

### Other Usage of Tissue Paper

Paper tableware remains the smallest tissue category in India, reaching \$5 million in 2009 off the back of value growth of just under 12% with napkins accounting for the entire category.

Napkins were the only retail tissue category to see much in the way of new launches during 2009, with variations in terms of colours, patterns and textures

emerging. Consumers generally use napkins during festivals and special occasions when entertaining guests, and thus characteristics such as colour and size are important purchase drivers. In addition housewives in semi-urban areas are also becoming more aware of these products, widening the consumer base for the category.

That the products are used when entertaining guests also has implications on pricing. Consumers with the means to do so are willing to spend more on branded napkins that guarantee good quality. It is likely that readiness to spend will bring about variations in terms of size, texture, colour and number of sheets in the future, as affluence increases in India and a healthy CAGR of 11% is predicted to 2014.

As is evident in the predicted growth rates across all tissue categories and the current low per capita consumption of tissue products, there is no doubt that the Indian tissue market has a healthy future. With rising affluence, greater exposure to Western modes of living and increasing awareness regarding hygiene issues, consumers are expected to purchase more tissue products as their incomes allow. However, for manufacturers looking to capitalize, increased competition goes hand in hand with healthy prospects, and the market behind the statistics is complex and will be a tough environment.

### Threats in the Tissue Industry in India

A continuous expansion of pulp and paper industries has been noticed in the last few years that the availability of raw material as wood, agriculture residue is not enough to meet the requirement.

In the present scenario the stringent guidelines for the environmental protection, the growing awareness to the sensitive natural resources are using approx. 30% recycle fiber in paper and tissue paper industries and even few tissue makers are using 100% recycled fiber.

An increase in the use of recycled fiber and higher requirement in pulp quality have led to improvements of deinking technology process has been made in the various stages of the deinking processes. Though a major segments of the pulp and paper and tissue industry is utilizing the recovered fiber for making paper, yet the industries facing serious problems in processing due to inconsistent quality of raw materials, un-economical plant size, technical obsolescence and environmental challenges.

## Conclusion

Thus, we cannot under estimate the demand for paper products, like, tissue paper, tea bags, filter paper, light weight online coated paper, medical grade coated paper, etc., is growing up. There is enormous potential for tissue consumption in India. The tissue paper industry is expected to grow due to many favourable changes like Industrial Changes: Growth in IT sector, Tourism, MNCs ; Sociological Changes: Growing upper-middle class, Lifestyle Changes, Change in people's attitudes towards hygiene, freshness and cleanliness, Increase in income and international exposure; Institutional Adaptation: Hospitals, Malls, Office complexes, F&B chains etc.

Tissue paper manufacturers are working at bringing costs down to drive greater volumes of usage. "Since the market is still largely trader-driven, margins are high. Once usage increases and more players step into the market the prices will drop. The increase in organized retail has been one of the main drivers of the sales in the home market. "That has also

given room for innovation," says Shenoy, who's now pushing rolls of kitchen wipes in markets.

Premier is looking to innovate in this space and design disposable capes for customers at hairstyling saloons. Origami is innovating with designs for kitchen and party usage. The market is said to be growing at a breakneck pace of 85% annually. Most of the large players in the market rely on exports and the international market is much larger than the Indian market. But more companies are looking at diversifying into this business primarily for the domestic market.

Creating awareness among the rural people on hygienic factors and using tissue paper as substitute to water, easy handling, and improvement of key ports, roads and railways and communication facilities will help the entire industrial sector including pulp and paper. These developments are expected to give fillip to the tissue industry in India. No doubt in the coming years, "Tissue paper will become like the mobile phone, which everyone will have and no one will think twice about using,"

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