International Journal of Innovation and Scientific Research
ISSN 2336-0046 Vol. 84 No. 2 May. 2026, pp. 76-87

http://www.ijisr.issr-journals.org/

Tissue Paper Emergence in India: Structural Growth Drivers, Capacity Expansion, and Market Transition from MG Paper to Soft Tissue Grades

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ABSTRACT: India's tissue paper sector is undergoing a meaningful structural shift, transitioning from a peripheral product category to one of the fastest-growing segments within the national paper industry. This review examines the structural drivers, capacity expansion patterns, and market transition dynamics that are reshaping India's tissue landscape, with particular attention to the ongoing migration from traditional machine-glazed paper toward dedicated soft tissue grades. Secondary data from IPMA, FAOSTAT, IMARC, Papermart, and company disclosures are used to assess production trends, installed capacity growth, per capita consumption trajectories, and investment activity. India's tissue sector grew from approximately 60,000 TPA in 2009 to an estimated 238,000 to 248,000 TPA of installed capacity by 2024, reflecting a compound annual growth rate of roughly 10 to 11 percent over this period. Despite this expansion, per capita tissue consumption in India stands at approximately 0.18 kg, compared to a global average of 5.6 kg and North American levels near 27.8 kg, indicating substantial headroom for long-term growth. Demand is driven by urbanization, institutional consumption in hospitality and healthcare, the Swachh Bharat Abhiyan, rising disposable incomes, and increasing penetration of organized retail and e-commerce. On the supply side, strategic investments by companies such as Andhra Paper, TNPL, Gayatrishakti Paper and Boards, and Jani Sales, as well as APRIL Group's acquisition of Origami, signal confidence in the segment's long-term trajectory. The article also addresses structural constraints including data fragmentation, cultural preferences for water-based hygiene, fiber procurement challenges, and the dominance of the unorganized sector. The findings suggest that while tissue production capacity is adequate, the primary challenge for the Indian industry lies in driving consumption growth rather than manufacturing scale.

KEYWORDS: tissue paper, India, MG paper, soft tissue grades, Capacity expansion, Hygiene awareness, Containerboard, Paper industry, Swachh Bharat.

1 INTRODUCTION

The global paper industry has been going through a structural realignment for the better part of the last decade. Packaging grades are expanding, graphic grades are contracting, and within the broader paper universe, tissue is quietly carving out one of the more resilient and consistent growth stories. India's experience mirrors this global trajectory but comes with its own set of characteristics, constraints, and opportunities that make it worth examining in detail.

Tissue paper, as a product category, covers a range of lightweight hygiene and sanitary paper products including toilet rolls, facial tissues, paper napkins, kitchen towels, and industrial wipes. In mature markets like the United States and Western Europe, tissue is a commodity with high per capita penetration, established retail infrastructure, and intense branded competition. In India, the situation is different. Tissue is still in the early phases of mass-market adoption, with consumption heavily concentrated in urban centers, institutional buyers, and premium consumer segments.

What makes India interesting right now is the combination of forces converging simultaneously: government-backed sanitation infrastructure through the Swachh Bharat Abhiyan, rapid urbanization and a growing middle class, expansion of organized retail and food service, rising disposable incomes, and a paper industry that has recognized the opportunity and begun investing accordingly. Installed tissue capacity in India was roughly 60,000 TPA in 2009. By 2024, that figure had grown

to somewhere between 238,000 and 248,000 TPA, according to industry estimates from Papermart, with projections suggesting a further jump to 387,000 to 417,000 TPA by early 2026 [1,2]. That is a remarkable expansion by any measure.

At the same time, the industry is navigating a grade transition that has significant technical and commercial implications. Much of India's historical tissue production was carried out on machine-glazed paper machines, which produce a harder, smoother, less absorbent product suited for wrapping, interleaving, and basic hygiene applications. The transition toward dedicated soft tissue grades produced on Yankee-dryer-based creping machines represents a qualitative shift in product character, and one that requires different fiber inputs, different machine configurations, and a different approach to converting and branding.

This review draws on secondary data from institutional and industry sources to trace the trajectory of India's tissue sector, examine the structural factors driving demand, assess the capacity expansion underway, and identify the challenges that producers and investors should keep in mind as the segment develops.

2 METHODOLOGY AND DATA SOURCES

This review is based on structured secondary data analysis of publicly available industry statistics, institutional reports, trade databases, and corporate disclosures published between 2020 and 2025. Core production and market data were drawn from FAOSTAT [3], IPMA performance reports [4,5], and industry assessments from Papermart [1], IMARC Group [6,7], and Tissue World Magazine [8,9]. Corporate investment data were sourced from company press releases, Valmet and Toscotec supply announcements [10,11], and IBEF sectoral reports [12].

Regulatory and demographic context was obtained from government sources including the Swachh Bharat Mission monitoring reports and World Bank urbanization data [13,14]. Digital adoption and e-commerce indicators were drawn from IAMAI and RBI publications [15,16]. Recovered fiber and pulp trade data were sourced from UN Comtrade and BIR reports [17,18].

Where figures differed across sources, the analysis focused on directional consistency and multi-year trends rather than relying on any single point estimate. The review acknowledges meaningful data fragmentation in the Indian tissue sector, particularly regarding the unorganized segment and import volumes, and these limitations are discussed explicitly in later sections. Reported values are expressed as presented in source documents without adjustment for inflation.

3 MARKET SIZE AND HISTORICAL GROWTH

3.1 PRODUCTION AND CAPACITY TRAJECTORY

India's tissue paper industry has grown substantially over the past decade and a half. Papermart estimates for the organized sector place installed capacity at 238,000 to 248,000 TPA as of 2024, with actual production estimated at 179,000 to 212,000 TPA, which implies utilization rates in the range of 75 to 85 percent [1]. These figures are consistent with projected consumption of approximately 280,000 TPA in 2024, when contributions from the unorganized sector and imports are considered.

The historical capacity trajectory is illustrative. India's tissue industry had installed capacity of roughly 60,000 TPA in 2009, which grew to approximately 100,000 TPA by 2017, reflecting a CAGR of about 6.5 percent during that period. The acceleration since 2017 has been more pronounced, with capacity growing at an estimated 15 to 17 percent annually between 2017 and 2024, implying a 10 to 11 percent CAGR across the full 2009 to 2024 period [1]. This suggests that investment activity picked up meaningfully in the second half of the last decade and has continued into the current period.

Planned capacity additions through early 2026 are substantial. Papermart projects total installed capacity reaching 387,000 to 417,000 TPA by that point, reflecting a CAGR of 21 to 22 percent from 2024 [1]. This would represent a near-doubling of capacity in roughly two years, which underscores both the level of industry confidence in the segment and the pace at which new entrants and existing producers are moving.

From a global perspective, tissue remains a small share of India's total paper and paperboard output, which stood at approximately 22 to 23 million TPA in recent years [3,5]. However, tissue's growth rate of 17.75 percent per annum, as reported by IPMA, is notably faster than any other paper grade in the country, including packaging [4]. This differential growth rate reinforces the structural nature of the transition.

Table 1. India Tissue Paper Capacity and Production Estimates (Organized Sector)

Year	Installed Capacity (TPA)	Actual Production (TPA)	Utilization Rate (%)	CAGR (%)
2009	~60,000	~45,000	~75%	Base year
2017	~100,000	~75,000	~75%	6.5% (2009-17)
2023	~220,000	~190,000	~80%	15-17% (2017-24)
2024 (est.)	238,000-248,000	205,000-258,000	75-85%	10-11% (2009-24)
2026 (proj.)	387,000-417,000	TBD	TBD	21-22% (2024-26)

Sources: Papermart [1]; IMARC [6]; IPMA [4,5]. Figures for organized sector only; unorganized segment and imports not included.

3.2 Consumption And Per Capita Gap

India's tissue consumption story is shaped by a significant gap between current levels and theoretical potential. Per capita tissue paper consumption in India was approximately 0.18 kg in 2023, compared to a global average of 5.6 kg, North American levels of around 27.8 kg, and China's estimated 8.8 kg [1,8]. As one industry analysis noted bluntly, Indian tissue consumption could increase tenfold and still remain below the global average [9].

This gap is not merely a function of income. It reflects a complex combination of cultural preferences, infrastructure availability, product awareness, and distribution reach. Water-based hygiene remains dominant in Indian households and many institutional settings, and the transition to disposable paper products requires both behavioral change and genuine product accessibility at competitive price points. These barriers are real and should not be underestimated.

That said, the consumption trajectory is upward. IMARC estimates India's tissue paper market volume at 160,000 tonnes in 2023, growing at a CAGR of 8.8 percent from 2018, and projects the market reaching 334,000 tonnes by 2032 at a similar rate [6]. Papermart's industry-specific analysis projects consumption of 280,000 TPA in 2024, 305,000 TPA in 2025, and 357,000 TPA in 2026 within the organized sector [1]. These figures point to a market that is accelerating, even if absolute per capita levels remain modest by international standards.

Statista data reflect a broader view of the tissue and hygiene paper market in India, estimating total revenue at approximately USD 36.36 billion in 2025, projected to grow at 4.49 percent annually through 2030 [19]. The wide spread between various market estimates reflects differences in scope, segment definition, and inclusion of hygiene adjacencies like diapers and feminine care, making direct comparisons difficult. For the purposes of this review, the tissue paper figures specifically relating to the organized pulp and paper industry are emphasized.

4 Structural Demand Drivers

4.1 Urbanization And Changing Hygiene Norms

India's urban population crossed 460 million in 2023 and continues to grow [14]. Urban consumers are more likely to encounter tissue products in institutional settings, modern retail formats, and organized food service, and are more likely to adopt them as household staples as incomes rise. World Bank data confirm the sustained pace of urbanization in India, with the shift from rural to urban livelihoods driving a broad change in consumption patterns across consumer goods categories [14].

The hospitality and food service sectors have been particularly important in establishing early demand for tissue. Hotels, airports, restaurants, corporate offices, hospitals, and shopping malls collectively represent a significant institutional demand base that operates largely independently of household adoption patterns. Tissue World Magazine observes that several Indian producers and brand owners have targeted these institutional channels as the entry point for consumption development, supplying dispenser systems alongside product and building long-term contract relationships [8].

As India's service sector continues to expand, with tourism, healthcare, and food service all growing faster than GDP, institutional demand provides a reliable and growing base that supports tissue capacity utilization even before household penetration achieves the levels seen in comparator economies.

4.2 THE SWACHH BHARAT ABHIYAN AND SANITATION INFRASTRUCTURE

The Swachh Bharat Mission, launched in 2014, has had a measurable effect on India's sanitation landscape. Over 100 million toilets were constructed under the program by 2024, and more than 600 million rural households now have access to proper sanitation facilities according to program monitoring data [13]. This represents a structural change in baseline hygiene infrastructure, and one that creates the conditions for tissue product adoption even if actual usage patterns lag infrastructure availability.

The link between sanitation infrastructure and tissue consumption is well-documented in global markets. Research cited by Mordor Intelligence confirms that national programs increasing toilet access directly add new volume to tissue markets, as the availability of physical infrastructure is a precondition for product adoption [20]. India's experience is consistent with this pattern: the establishment of toilet access at scale creates both an immediate institutional need for toilet tissue and a longer-term household conversion opportunity.

Beyond toilets, broader hygiene awareness campaigns associated with Swachh Bharat have normalized the discourse around cleanliness and sanitation, creating a more receptive cultural environment for disposable hygiene products than existed a decade ago. This is a soft but real demand driver that is difficult to quantify but should not be ignored in any structural analysis.

4.3 RISING DISPOSABLE INCOMES AND MIDDLE-CLASS EXPANSION

India's middle class has been expanding steadily, with growth in per capita income supporting broader consumption of discretionary and semi-discretionary goods. Tissue paper occupies an interesting position in this context. For existing consumers, it is increasingly seen as a household convenience. For new consumers, the conversion from traditional alternatives requires a meaningful price premium to be manageable. Rising incomes reduce the barrier, but pricing strategy and product positioning remain critical.

The growth of the IT sector, multinational operations, and modern organized retail has created a consumer base in urban India that is familiar with tissue products from workplace exposure and is increasingly willing to purchase them for household use. IMARC notes that IT sector growth and the expansion of MNCs in Indian cities have been meaningful drivers of institutional tissue adoption [7]. Premium and branded tissue segments are growing particularly in urban centers like Mumbai, Delhi, and Bengaluru.

IBEF data indicate a strong connection between e-commerce penetration and tissue consumption growth, with online channels making tissue products accessible to consumers who may not live near modern retail formats. Online sales are expected to contribute roughly 5.3 percent of total tissue and hygiene paper market revenue in India by 2025 [19].

4.4 E-COMMERCE AND ORGANIZED RETAIL DISTRIBUTION

The expansion of organized retail and e-commerce has changed the distribution landscape for tissue products in ways that matter for consumption growth. Traditional kirana stores have limited shelf space and have historically not stocked tissue products in depth. Modern trade formats and e-commerce platforms remove this constraint, making a wider range of products available to a larger geographic and demographic base.

Digital adoption indicators from IAMAI and the Reserve Bank of India show sustained growth in internet connectivity and digital payment volumes [15,16]. By 2021, India had approximately 830 million internet connections, with continued growth since. E-commerce platforms like Amazon, Flipkart, and Blinkit now carry extensive tissue product ranges, and the convenience of doorstep delivery has accelerated household adoption among digitally active consumers.

Organized grocery and FMCG retail, including hypermarkets, supermarkets, and modern convenience formats, have provided physical shelf space and promotional platforms for tissue brands. The growth of quick commerce in particular, with sub-30-minute delivery models in major cities, has made tissue products available on demand in a way that mirrors the convenience positioning of the category in developed markets.

4.5 HEALTHCARE AND INSTITUTIONAL DEMAND

India's healthcare sector is expanding, with both public and private hospital capacity growing in response to population growth and increased healthcare utilization. Hospitals, clinics, and diagnostic centers are significant consumers of tissue

products, particularly medical-grade wipes, towels, and bed covers, where hygiene requirements are non-negotiable and alternatives to disposable paper are limited.

The healthcare channel also plays a role in consumer education. Patients and visitors who encounter tissue products in clinical settings develop familiarity and positive associations that can influence household adoption behavior. This pathway is well-recognized in developed tissue markets and is beginning to operate in India as healthcare infrastructure improves.

5 THE GRADE TRANSITION: FROM MG PAPER TO SOFT TISSUE

5.1 WHAT THE TRANSITION INVOLVES

Understanding the technical dimension of India's tissue development requires clarity on what separates machine-glazed paper from soft tissue grades, because the distinction has significant implications for both product quality and capital requirements.

Machine-glazed paper is produced on paper machines equipped with a single large polished drying cylinder, the MG cylinder, which imparts a smooth, glossy surface on one side of the sheet. The resulting product is relatively stiff, with moderate absorbency and limited softness. MG paper has served India's basic tissue needs for decades, particularly in applications like wrapping, interleaving, and basic hygiene uses where softness is not the primary requirement.

Soft tissue grades, by contrast, are produced on dedicated tissue machines equipped with a Yankee dryer, a creping doctor blade, and a high-velocity hot air hood. The creping process is central to soft tissue quality: the doctor blade scrapes the web from the Yankee surface, creating a micro-folded, creped structure that imparts bulk, softness, and absorbency. The difference in hand feel between a creped tissue and an MG sheet is immediately apparent to any consumer, and it is this tactile quality that drives premium positioning and household adoption [21].

The technology hierarchy in tissue goes further. At the premium end, through-air drying machines preserve the three-dimensional structure of the fiber web without pressing, producing tissue with superior softness, bulk, and absorbency. TAD machines have capital costs roughly three times higher than conventional creping machines and significantly higher energy consumption, but they enable the ultra-premium product tiers that command the highest consumer prices [21]. India's current investment wave is primarily in conventional creping technology, which represents an appropriate entry point for a market at this stage of development.

5.2 WHY THE TRANSITION IS HAPPENING NOW

Several converging factors explain why the transition from MG-based tissue to dedicated soft tissue production is accelerating now rather than earlier. First, the consumer demand base has reached a scale where dedicated investment in higher-quality tissue production is commercially justified. Second, technology suppliers have made modern creping equipment available to Indian buyers at accessible price points, with suppliers like Toscotec and Valmet actively competing for Indian orders [10,11]. Third, existing packaging and MG paper producers have recognized tissue as an adjacent growth opportunity that leverages their existing fiber handling, water treatment, and energy infrastructure.

The entry of Gayatrishakti Paper and Boards into the tissue market via a Toscotec AHEAD 1.8 machine in Vapi is illustrative of this pattern. GSPBL was an established packaging board producer with no prior tissue experience. The decision to install a 35,000 TPA dedicated tissue machine signals that producers who have developed operational expertise in adjacent paper grades are now viewing tissue as a logical portfolio extension [10,11]. Similarly, Andhra Paper's decision to invest INR 270 crore in a Valmet Advantage DCT100HS tissue line at its Kadiyam facility, targeting 35,000 TPA of various tissue grades, represents a commitment from an established integrated pulp and paper producer to building genuine soft tissue capability [10].

TNPL's planned installation of a 100 TPD tissue machine at its Unit II facility at an estimated cost of INR 300 crore, targeting commissioning by March 2026, adds another major player to the dedicated soft tissue segment. TNPL's machine will process hardwood pulp from its own integrated operations, giving it a structural fiber cost advantage that independent tissue converters cannot easily replicate [2].

5.3 PRODUCT GRADE DIFFERENTIATION

The transition from MG to soft tissue involves not just machine technology but a shift in the product portfolio. Dedicated tissue machines enable production of facial tissue, toilet rolls, kitchen towels, napkins, and towel-grade tissue across a GSM range of roughly 13 to 40, with each grade requiring specific creping conditions, chemical additions, and converting parameters.

BioResources technical literature confirms that the properties of tissue products are strongly dependent on machine technology and fiber inputs [21]. Virgin hardwood pulp, particularly eucalyptus, produces superior softness characteristics compared to recycled fiber, which tends to yield coarser tissue. Indian producers with access to plantation-grown hardwood pulp have a quality advantage in premium tissue grades, while those dependent on imported recovered paper must work harder on refining and chemical optimization to achieve acceptable softness targets.

The trend in global tissue markets toward premiumization, with two-ply and three-ply variants commanding significant price premiums, is gradually visible in India's organized retail segment. While the mass market remains price-sensitive, premium positioning is increasingly viable in urban modern trade and e-commerce channels, providing a pathway for margin improvement as the sector matures.

6 CAPACITY EXPANSION: RECENT INVESTMENTS AND NEW ENTRANTS

6.1 OVERVIEW OF INVESTMENT ACTIVITY

India's tissue sector has seen a cluster of significant investment announcements and completions over the 2022 to 2025 period that collectively signal a step-change in the industry's structural ambitions. Several of these investments merit specific attention because of their scale, the credentials of the investors, and the technology choices involved.

Table 2. Selected Major Tissue Capacity Investments in India (2022-2025)

Company	Machine Supplier	Capacity (TPA)	Investment	Key Details
Gayatrishakti Paper & Boards (GSPBL)	Toscotec (AHEAD 1.8)	35,000	Undisclosed	Start-up Dec 2024; Vapi, Gujarat; 2,850mm trim width; 1,800 m/min
Andhra Paper Ltd. (APPM)	Valmet (DCT100HS)	36,500 (100 TPD)	INR 270 crore	Kadiyam, Andhra Pradesh; Start-up scheduled end-2025; facial, toilet, napkin, towel grades
TNPL (Tamil Nadu Newsprint and Papers)	Undisclosed	36,500 (100 TPD)	INR 300 crore	Unit II; commissioning target March 2026; 13 to 40 GSM; hardwood pulp feedstock
Jani Sales Pvt Ltd	Undisclosed (PM2)	21,900 (60 TPD)	Undisclosed	Sarigam, Gujarat; start-up Oct 2024; 100% pulp-based; 11.5 to 42 GSM
Origami (acquired by APRIL Group)	Existing + expansion	15,000-25,000	Acquisition deal	May 2024 acquisition; APRIL brings global pulp supply integration and operational expertise

Sources: Toscotec press release [10]; Valmet press release [11]; IBEF [12]; IMARC [7]; Papermart [1]; TNPL Annual Report [2].

6.2 APRIL GROUP'S ACQUISITION OF ORIGAMI

The acquisition of a controlling stake in Origami by Singapore-based APRIL Group in May 2024 is one of the more significant strategic moves in Indian tissue in recent years. APRIL is one of the world's largest pulp and paper producers, with significant hardwood plantation assets in Indonesia and an established global pulp supply network. Origami is India's leading consumer tissue brand, with extensive converting operations and a recognized consumer presence.

The strategic logic is clear. APRIL gains direct access to India's fast-growing tissue consumer market with an established brand platform. Origami gains access to APRIL's fiber supply infrastructure, which has the potential to significantly improve raw material cost stability. For the Indian tissue market more broadly, the acquisition signals that global integrated players view India as a meaningful long-term opportunity worth committing capital to [7,12].

This type of foreign strategic investment is qualitatively different from the equipment-level investments described earlier. It brings operational management capability, global brand knowledge, and supply chain integration to an Indian tissue business, and may accelerate the adoption of practices from more mature tissue markets.

6.3 Machine Technology and Equipment Choices

The technology choices being made by Indian tissue investors are instructive. The Toscotec AHEAD 1.8 installed at GSPBL features an energy-optimized drying configuration with a shoe press and a third-generation steel Yankee dryer, reflecting current best practice in efficient conventional creping technology [10]. The Valmet DCT100HS at Andhra Paper is similarly positioned as a high-efficiency creping line with automation and quality control systems [11].

Neither investment is in TAD technology, which remains at the premium end of the global tissue technology spectrum. This is consistent with India's current market stage: the dominant demand is for functional, competitively priced tissue, not ultra-premium grades. TAD investment may follow as the market premiumizes over the longer term, but for now the industry is correctly prioritizing accessible quality at competitive cost structures.

Machine speeds in the latest Indian tissue installations, running up to 1,800 m/min at GSPBL, are comparable to mid-range global standards, suggesting that the quality ceiling for Indian-produced tissue is rising toward levels that can support premium retail positioning.

7 Fiber Supply, Raw Material Dynamics, and Sustainability

7.1 Fiber Inputs for Tissue

Tissue quality is fundamentally a function of fiber inputs. Virgin bleached softwood kraft pulp provides the long-fiber strength component, while virgin bleached hardwood kraft, particularly eucalyptus, provides the softness and formation characteristics that determine hand feel. In markets without access to domestic wood pulp at competitive cost, recycled deinked pulp serves as a base furnish for economy-grade tissue, though it yields a coarser, less soft product.

India's integrated tissue producers with plantation fiber assets, particularly TNPL with its eucalyptus and casuarina procurement program, have a structural advantage in producing soft tissue grades. TNPL procured over 926,000 MT of debarked pulpwood in 2023-24 and has been developing farmer-linked plantation networks for decades [2]. This integration gives TNPL tissue production a fiber cost and quality profile that independent converters dependent on imported pulp cannot easily replicate.

For producers without integrated pulp operations, imported bleached hardwood pulp, primarily from Indonesia, Brazil, and Chile, is the main input for higher-quality tissue grades. Pulp import costs expose producers to foreign exchange volatility and global commodity price cycles. Industry data indicate that raw material costs represent 45 to 50 percent of revenue in Indian paper manufacturing [4], and this proportion is likely similar or higher for tissue producers dependent on imported pulp.

7.2 Recovered Fiber in Tissue Production

Recovered paper is used as a base furnish in economy-grade tissue production in India, as in many markets. The process involves deinking, cleaning, and repulping post-consumer paper to produce a furnish that can be processed on tissue machines to yield functional, if lower-quality, tissue products.

India's domestic wastepaper collection infrastructure remains less developed than in mature markets [17]. The country relies on imported recovered paper for a significant share of its containerboard and some tissue production, as confirmed by UN Comtrade trade statistics showing material import flows under HS 4707 [18]. As tissue capacity expands, competition for recovered fiber with containerboard producers, which are also growing rapidly, will intensify. This may push tissue producers toward virgin pulp inputs as the cost and availability of suitable recovered fiber for tissue becomes more challenging.

Global trends toward sustainability and recycled content are relevant here. BIR recycling statistics confirm that high recovery and utilization rates for paper and board are achievable with adequate collection infrastructure [17]. India's recovery rates remain below those in Europe and North America, but government and industry initiatives to develop domestic collection systems are ongoing.

7.3 Alternative Fiber Considerations

India's unique agricultural resource base, with substantial availability of bagasse from sugarcane processing, wheat straw, and bamboo, presents alternative fiber pathways for tissue production. Some Indian producers already use agro-residue fibers in paper grades, and their use in tissue, particularly for economy-grade products, is technically feasible. TNPL, which processes bagasse alongside wood fiber, demonstrates that mixed furnish approaches are operationally viable in Indian conditions.

Bamboo fiber, sourced from the northeast and other regions, is gaining attention globally as a sustainable tissue fiber alternative. Several international brands have launched bamboo-based tissue products, and at least one Indian brand, Sybron, has introduced bamboo toilet paper to the domestic market [7]. These developments suggest that India's fiber diversity may eventually become a competitive asset in tissue production, particularly as global sustainability scrutiny of wood-fiber sourcing intensifies.

8 Structural Constraints And Challenges

8.1 The Consumption Problem

The most fundamental challenge facing India's tissue industry is not on the supply side. As Papermart's analysis concludes, India's tissue production capacity is sufficient and not a constraint on growth; the real issue lies in driving consumption [1]. At 0.18 kg per capita, India's tissue usage is so low that even aggressive capacity expansion will result in surplus production unless consumption development keeps pace.

Tissue World Magazine identifies the core challenge clearly: changing consumer behavior requires education, pricing accessibility, and product availability working together simultaneously [8]. Indian consumers in rural and semi-urban areas, which represent the majority of the population, have limited exposure to tissue products, use water-based alternatives for personal hygiene, and have no strong reason to switch in the absence of active market development.

The task of developing this consumer base falls primarily on branded consumer goods companies and retail players rather than paper producers, but it requires paper producers to ensure that base product quality is acceptable and that retail price points are accessible. Getting this alignment right is a multi-year process, and producers who invest in capacity expecting rapid household adoption may face utilization challenges in the near term.

8.2 Cultural And Behavioral Factors

India's cultural approach to hygiene differs from that of Western markets in ways that directly affect tissue adoption. Water-based cleaning is deeply embedded in hygiene practice, and this is not simply a function of economic constraint. Even in affluent urban households, the preference for water use alongside or instead of paper tissue is widespread.

Tissue World Magazine's analysis of Indian tissue market dynamics identifies cultural factors as a genuine structural constraint rather than merely a temporary lag, noting that India's demand structure is very different from any other country with comparable market growth aspirations [8]. This suggests that consumption development will require genuine behavior change, not just income growth, and that the timeline for mass-market penetration may be longer than optimistic projections assume.

The comparison with China is instructive here. China's tissue consumption has grown dramatically with rising incomes and urbanization, but China's cultural approach to hygiene is more compatible with tissue adoption than India's. Indonesia, which has a broadly similar demographic and income profile to India and also uses water-based hygiene in ways culturally similar to India's, has nonetheless developed a functioning tissue export industry, suggesting that supply-side capability building does not have to wait for domestic consumption development.

8.3 Data Fragmentation And Unorganized Sector

A significant practical challenge in analyzing India's tissue market is the fragmentation and inconsistency of available data. Market size estimates vary widely across sources depending on whether they include the unorganized sector, imports, non-tissue hygiene products, or consumer goods channel estimates rather than paper mill production data. Papermart's analysis explicitly limits its consumption and capacity figures to the organized pulp and paper sector, noting that accounting for the unorganized sector is a complex task that has not been resolved [1].

The unorganized sector, comprising small-scale converting operations that may purchase tissue jumbo rolls from domestic or imported sources and produce finished products under informal arrangements, is a meaningful component of total tissue supply in India. Its size is genuinely uncertain, which complicates both market sizing and capacity planning. Producers operating in the organized segment compete with unorganized players who have lower overhead and regulatory compliance costs, and this price competition limits the margin environment for quality-oriented producers.

Imports of tissue products, primarily from China, Indonesia, and Southeast Asian producers with scale cost advantages, add another layer of complexity to domestic supply planning. Import volumes are not fully captured in organized sector statistics, making it difficult to assess the true competitive landscape for domestically produced tissue.

8.4 Capital Intensity And Operational Challenges

Tissue production is capital-intensive, particularly at the machine level. Modern Yankee-based tissue machines of the scale being installed in India cost in the range of INR 200 to 300 crore before civil works and auxiliaries. These are significant commitments, and the payback period depends heavily on utilization rates and product mix, both of which are uncertain in a market where consumption growth is the primary unknown.

The operational complexity of tissue production is also higher than for packaging grades. Creping chemistry, Yankee coating management, and the tight tolerance requirements for consistent tissue quality require specialized technical expertise that is less common in the Indian paper industry than packaging know-how. Equipment suppliers like Toscotec and Valmet provide commissioning support and training, but building sustainable operational capability takes time and experience.

Energy costs are a persistent challenge across Indian paper manufacturing, and tissue is no exception. The high drying loads on tissue machines, driven by the need to achieve low basis weight sheets at high speed, make specific energy consumption a critical operational metric. New installations are benefiting from efficiency-oriented equipment design, but energy cost variability remains a structural risk for Indian tissue producers.

9 Strategic Implications For Industry Stakeholders

9.1 For Existing Paper Producers

Established Indian paper producers considering tissue market entry need to be realistic about the distinction between machine capability and market development. Installing a tissue machine is the relatively straightforward part. Building the converting, branding, and distribution infrastructure needed to compete effectively in consumer tissue requires different competencies, longer investment horizons, and patience with slower-than-expected consumption ramp-up.

The most defensible entry positions are those that leverage existing structural advantages. Producers with integrated hardwood pulp operations can produce superior soft tissue at lower fiber cost. Producers with established institutional supply relationships in hospitality, healthcare, or food service can target away-from-home channels without the complexity of retail brand building. Producers in geographies with good access to modern retail distribution can target organized trade channels more efficiently.

The machine conversion question, whether MG paper producers should retrofit or convert machines to tissue production, is more nuanced in India than in mature markets. In Europe and North America, graphic machine conversion to packaging or tissue has been driven by collapsing graphic demand. In India, MG paper still has active demand for wrapping and packaging applications, so the economic case for conversion is weaker. New standalone tissue machines represent a more appropriate investment structure for most Indian producers.

9.2 For Fiber And Chemical Suppliers

The expansion of India's tissue sector creates demand growth for bleached hardwood kraft pulp, tissue-grade chemicals including Yankee coatings, creping adhesives, and wet strength resins, as well as tissue-specific stock preparation equipment. Suppliers in each of these categories should be monitoring Indian investment activity closely.

The fiber supply challenge is an opportunity for domestic plantation developers. TNPL's model of contracting with farmers for pulpwood plantation development over decades has created a cost-competitive domestic fiber supply chain that other tissue producers could emulate if longer-term fiber security is prioritized. Public and private investment in agro-forestry and

short-rotation plantation species could support a more robust domestic fiber base for the tissue industry over the next ten to fifteen years.

9.3 FOR INVESTORS AND POLICY MAKERS

The tissue sector's growth trajectory makes it an attractive destination for industrial investment, but investors should price in the consumption development risk. Returns on tissue investment depend on utilization rates, which depend on consumption growth, which depends on behavioral change, product accessibility, and sustained market development investment. Projects that model aggressive consumption ramp-up without adequately accounting for these dynamics may face extended payback periods.

From a policy standpoint, the Swachh Bharat framework has already created favorable conditions for tissue adoption by improving sanitation infrastructure. Continued investment in rural sanitation, combined with consumer education programs on hygiene product benefits, would support demand development. GST rationalization on tissue products to bring them to parity with other hygiene essentials could also improve price accessibility and stimulate household conversion.

10 CONCLUSION

India's tissue paper sector is at an inflection point. The installed capacity base has grown from 60,000 TPA in 2009 to nearly 250,000 TPA by 2024, with further expansion to over 400,000 TPA projected by 2026. The quality of that capacity is improving, with dedicated Yankee-based soft tissue machines replacing or supplementing MG paper production in the portfolios of established producers. Strategic investments by Andhra Paper, TNPL, Gayatrishakti, and Jani Sales, along with APRIL Group's acquisition of Origami, confirm that both domestic and international capital is being allocated to the sector with a long-term horizon.

The structural growth drivers are genuine. Urbanization, rising incomes, institutional demand from hospitality and healthcare, the Swachh Bharat infrastructure legacy, and expanding retail and e-commerce distribution are all working in the same direction. These forces will sustain consumption growth over the coming decade even without dramatic behavioral change in traditional hygiene practices.

However, the primary constraint on sector performance is consumption growth, not production capacity. India's per capita tissue consumption of approximately 0.18 kg is a fraction of global averages, and the behavioral and cultural factors that explain this gap will not dissolve quickly. The industry's challenge is to develop the product quality, pricing accessibility, and consumer awareness needed to convert the massive latent demand potential into actual consumption, and to do so at a pace that justifies the capital being committed to production expansion.

The grade transition from MG paper to soft tissue is a meaningful qualitative shift that aligns Indian production capability with global tissue quality standards. Completing this transition, while navigating fiber supply challenges and the competitive pressure from imports and the unorganized sector, will define the competitive structure of India's tissue industry over the next decade.

From an institutional and production-based perspective, India's tissue sector is well-positioned for sustained growth. The question is whether consumption development will keep pace with the supply infrastructure being built. If it does, India's tissue industry could become one of the more significant growth stories in global tissue over the coming decade, given the sheer scale of the underlying demand opportunity.

ABBREVIATIONS

APRIL – Asia Pacific Resources International Limited

APPM – Andhra Paper Limited

BIR – Bureau of International Recycling

CAGR – Compound Annual Growth Rate

FAOSTAT – FAO Statistical Database

GSM – Grams per Square Meter

GSPBL – Gayatrishakti Paper and Boards Limited

IAMAI – Internet and Mobile Association of India

IBEF – India Brand Equity Foundation

IMARC – IMARC Group (Market Research)

IPMA – Indian Paper Manufacturers Association

MG – Machine Glazed

OCC – Old Corrugated Containers

RBI – Reserve Bank of India

TAD – Through-Air Drying

TNPL – Tamil Nadu Newsprint and Papers Limited

TPA – Tonnes per Annum

TPD – Tonnes per Day

DECLARATIONS

CONFLICTS OF INTEREST: The author declares no conflicts of interest.

FUNDING: None.

AUTHOR CONTRIBUTION: The author reviewed the subject literature and wrote the article.

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