

WHITE PAPER

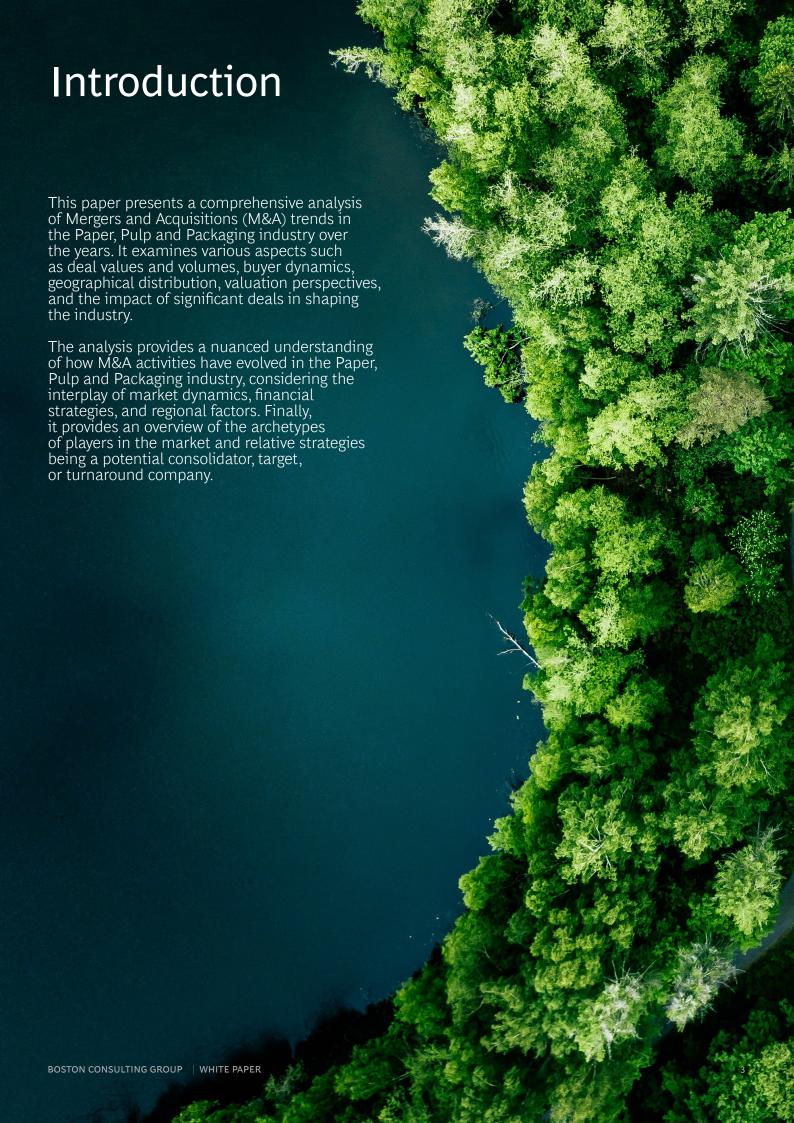
Mergers & Acquisitions Analysis in the Pulp, Paper and Packaging Industry:

Trends, Deals, and Strategies Leading to Consolidation



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1. Historical M&A Analysis in the Paper, Pulp and Packaging Industry

1.1 Growing Deal Values

Over the years, the Paper, Pulp and Packaging sectors have seen a relatively stable range of deal volumes, fluctuating between \$15 billion and \$25 billion. The tendency to slightly reduce the number of deals suggests that values per deal have increased in time as companies have grown bigger and consolidation has been occurring. Outliers are 2015 and 2018 due to the closing of mega deals. During the same period, the number of deals progressively decreased, with the industry shifting toward fewer but larger deals, as shown in Figure 1.

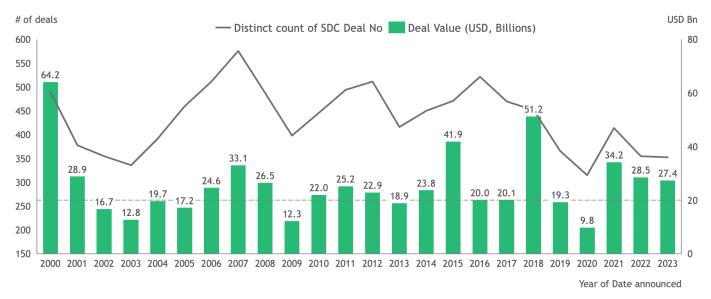


Figure 1

Despite an overall decline of the transaction market in 2023, M&A activity within this sector remained strong, showing resiliency and opportunities for buyers.

1.2 Increasing Share of Private Equity Buyers

Since 2000, there has been a noticeable increase in activity from private equity buyers at the global level (particularly in NA and EMEA, with rising activity in APAC in recent years), rising from 7% of total deals in the early 2000s to approximately 30% in recent years, as shown in Figure 2. This shift will influence the nature of deals, with private equity firms potentially favoring complete company acquisitions over asset purchases (particularly when directly buying new companies, then adopting a "buy & build" strategy, subsequently acquiring single facilities and/or new companies). This will also lead to strategic buyers facing increased competition for attractive assets.

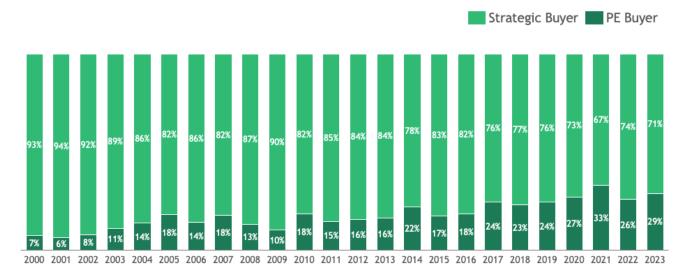


Figure 2

1.3 EMEA Leading the Transaction Market

In 2023, roughly 47% of total deal volumes occurred in the EMEA region, followed by North America (29%) and APAC (22%), with LATAM contributing around 2%. In addition, a notable 60% of cross-regional deals in 2023 targeted European companies or assets.

The majority of M&A deals are occurring within the same country (60% in 2023), with a smaller proportion of cross-regional (25%) and within-continent deals (15%).

Breakdown deals by target company region

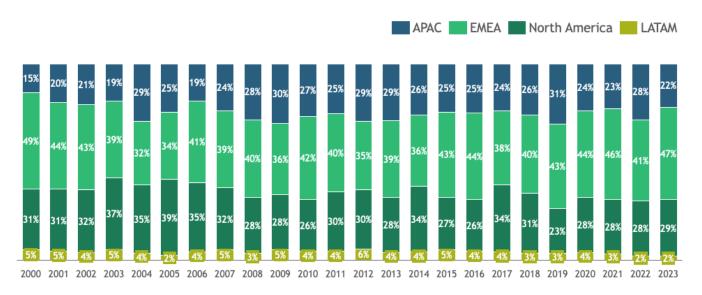


Figure 3



1.4 Stable Valuation in Time

The valuation levels in the industry have been fluctuating and not showing any significant long-term trend, with public multiples varying in time (for example, higher trading multiples from 2014 to pre-COVID-19, lower valuation in 2023 driven by higher interest rates and the overall macroeconomic situation) and strategic investors on average paying more due to the perceived synergies in acquisitions.

Median ration of public multiples: enterprises value to EBITDA



Figure 4

1.5 Value Created in Time for Buyers

In the acquisition of Paper, Pulp and Packaging assets, buyers have generally achieved favorable results, with an average positive relative Total Shareholder Return (TSR). Companies in the first quartile have demonstrated an average TSR of approximately 13%, compared with a cross-sectorial median of 8%. Seasoned buyers (with a track record of successful M&A), in particular, have realized value-accretive M&A in approximately 70% of analyzed cases.

In contrast, organizations new to M&A as a lever to growth have encountered challenges more often, with about 50% experiencing value-dilutive outcomes with a negative TSR of approximately 1% to 3%. This highlights the critical importance of thorough preparation for M&A transactions to ensure successful deal execution.

Additionally, M&A activities within the same "industry vertical" have yielded on average higher returns compared with transactions outside the core business of the acquirer.



2. Current Industry Trends and Drivers for M&A Activity

The paper, pulp and packaging industry is undergoing a significant transformation, influenced by several trends, each playing an important role in shaping the overall M&A activity:

I. Decline in Graphic Paper Volumes and Shift Toward Packaging and Specialties

In the global paper industry, there is a notable trend: the demand for graphic papers, particularly newsprint and coated papers, is declining, while the demand for packaging and specialty papers is increasing. This trend is more pronounced in Western countries but is evident across most regions. As a result, companies primarily involved in graphic paper production are shifting their focus toward packaging materials, especially containerboard, and specialty papers. This shift is leading to industry consolidation, as companies less adaptable to change - often smaller entities with asset-level constraints - are becoming acquisition targets. Conversely, firms already successful in the packaging sector are pursuing M&A to bolster their market presence, a trend observed in the containerboard and cartonboard markets in North America and Europe.

In the APAC region, particularly in China and emerging markets, the shift is less pronounced due to the ongoing increase in literacy rates, which sustains the demand for uncoated woodfree (UWF) paper. However, even here, there is a gradual transition, with new capacities being added mainly in UWF grades, primarily by larger companies looking to expand their market share. Simultaneously, there is a growing trend of repurposing graphic paper production facilities for packaging purposes.

II. Slowdown of Containerboard Demand

The temporary slowdown in containerboard demand that started in H2 2022 and is expected to rebound in 2024, coupled with the trend of players shifting away from graphic paper, has created a scenario of overcapacity in the market. This is evident from the projected decline in operating rates (~95% prior to 2020, 85% in 2023, forecasted <90% through 2027 in Europe, less relevant in North America) with underperforming mills having more difficulties. In this context, capacity rationalization through M&A becomes a strategic approach for companies aiming to optimize their capacity and maintain profitability, potentially leading to the acquisition of paper mills or entire companies with excess capacity and suboptimal production costs as well as potential pressure on prices and margins.

III. Geographic Expansion Beyond Europe and the US

Companies are increasingly looking toward emerging markets in South America and Asia for expansion. This geographic diversification, driven by challenges in expanding within more saturated markets such as Europe and the US, is likely to fuel M&A activities, as companies prefer acquiring established players in these new markets to boost their organic growth.

IV. Upstream and Downstream Expansion to Improve Resilience

In recent years, the volatility of raw material prices (particularly wood) and various disruptions on the supply side, also affected by climate change events and other environmental factors, have led to a general expectation of increased vertical integration in the next years.

This means companies might start integrating more stages of production and supply in order to manage uncertainties, particularly in the forestry sector.

Integrating forestry into the operations of a pulp and paper producer can be significant to ensure a hedge against this price volatility as well as a more sustainable source of raw materials (the production of wood and fiber products such as pulp and paper represents 5% to 20% of the total forest value, estimated to be worth up to \$150 trillion). Similarly, in the case of paper for recycling, upstream integration with recycling platforms can help mitigate the strong fluctuations registered in recent years for containerboard and paperboard players.

While in EMEA and NA, OEMs are usually integrating upstream (toward raw materials), in APAC, pulp producers are mainly the ones initiating a downstream integration within the value chain (toward end customers).

V. New European Packaging Regulation and Similar US Legislation

The introduction of stringent packaging regulations in Europe such as the Packaging and Packaging Waste Regulation (PPWR) and similar legislation in the US, such as Federal Trade Commission Green guides and Extended Producer Responsibility programs, is creating a divide in the industry. Companies that are well-positioned to adapt to these new standards may use M&A to quickly align themselves by acquiring

firms that are already compliant, possess the necessary technology, or are complying with new policies and rules.

On the other hand, APAC countries witness "smoother" regulation, including, for example, import policies on old corrugated carton board, which is not forecast to largely impact the industry landscape.

VI. Investments in Environmental Impact Reduction and Decarbonization

The significant investment required to reduce environmental impact and decarbonizing production processes is another key driver for M&A, with companies engaging in acquisitions to share financial burdens, access greener technologies, or meet regulatory standards more efficiently due to scale factor.

The pressure to increase the use of recycled content in packaging, with mandatory rates varying from 10% to 35% initially and up to 65% by 2040, might push companies to merge or acquire in order to meet these stringent requirements efficiently.

In addition, investors, both in the mid markets and public ones, are on average attributing premium consideration to the enterprise value of companies deemed sustainable, particularly in the broader materials industry (Source: Schroders).





3. The Consolidator vs. Target Approach for Paper, Pulp and Packaging

In the rapidly evolving global market, companies are continually seeking strategies to enhance their competitive positioning. By adopting the BCG Proprietary Consolidator vs. Target Framework, this analysis aims to define archetypes into which companies may fall, adopting the so-called "Fundamental View" companies on two axes: Leverage and Return on Capital. (See figure 5.)

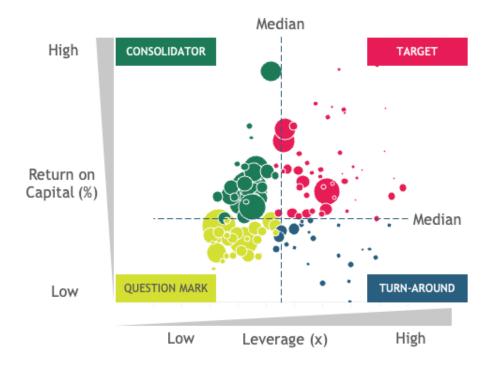


Figure 5

The following are the most important archetypes highlighted after analyzing nearly 300 public peers around the globe:

Consolidator

Consolidators are companies with a relatively low leverage (usually below 2x Net Debt/EBITDA) and higher return on capital. According to their size, consolidators will seek to acquire companies based on their regional focus, core business, and liquidity level:

- Regional Focus (Paper and Packaging Producers). Such companies are predominantly large cap, especially those located in EMEA, with a chance to exert substantial influence in both their domestic and foreign markets. In addition, looking at liquidity level, APAC-located companies tend to have higher levels, while North American and EMEA large cap companies usually exhibit lower cash flow, typically ranging from 0% to 25% of the companies' annual sales.
- Focus on Forestry Core Business.
 Approximately half of the public companies identified with a primary focus on forestry are situated in the APAC region, indicating a potential to expand and integrate operations downstream, enhancing their proximity to the end customers. Both large and SME consolidators are present in APAC, whereas in North America, there are mainly large cap companies in the field, with EMEA strongly characterized by SMEs focusing on this as their core business of activity.

Target

Targets are companies with a relatively high leverage (usually above 2x Net Debt/EBITDA) and higher return on capital. According to their size, Targets can be found based on their regional focus and level of indebtedness:

- Regional Focus (Paper and Packaging Producers). In EMEA, SMEs are commonly M&A targets and present opportunities for the growing private equity investments in this region. Conversely, North America has already experienced a first wave of consolidation, with significant M&A activity, resulting in a high density of large cap companies now posing as potential acquisition targets.
- Debt Level. Targets in EMEA typically maintain controlled leverage levels, with SMEs averaging 2 to 3x Net Debt/EBITDA. Higher debt levels are visible in large cap companies in APAC (>3x), followed by North America.

- By evaluating leverage, companies can strategize whether to pursue a transformative turnaround or position themselves as attractive acquisition targets.
- In the cluster of target companies, the interest coverage ratio (ICR) has, on average, decreased over the past three years (2021–2023) due to rising interest rates occurring in the market. However, performance increases, in some cases, have mitigated negative effect.
- As interest rates rise, target firms face increased interest expenses on their debt, which strains their financials. For companies that are heavily leveraged, this heightened cost can result in a declining ICR, indicating that a larger portion of their earnings is being consumed by interest payments.

Turn and Question Mark

Turn and question mark companies are those showing relatively lower return on capital with higher or lower leverage. Archetypes among these companies can be found based on their regional focus and level of indebtedness:

- Regional Focus. In APAC, companies are commonly found in this bucket, mainly due to a lower return on capital versus peers in other regions, regardless of their size.
- Debt Level. Turn companies characterized by a relative higher level of debt (>3x Net Debt/ EBITDA) are both large cap and SMEs in EMEA, while in North America, higher levels of debt are visible for SMEs. In APAC, debt level is usually higher (>4.5x) and characterizes both turn and question mark companies.



4. Recommendations and Strategies for the Identified Company Archetypes

The following are actions companies could implement based on the different archetypes outlined.

Consolidator

Companies falling in this archetype should carefully evaluate the type of consolidation they want to achieve and the rationale behind that choice. Specifically, companies might need to develop a comprehensive strategy based on the selection of the following aspects:

Direction of Consolidation involves horizontal integration to consolidate market and gain prominent position in specific geographies or segments. Potential integration strategies should be selected taking into consideration market dynamics (especially in markets showing stagnation or decline) and carefully assessing cost of integration. Capacity conversion or shutdown might be expensive, and a detailed assessment of single products segments is needed to evaluate real synergies. Vertical integration is necessary to either consolidate raw materials through upstream integration or converting facilities through downstream integration. Vertical integration can be seen as a valuable option, considering the context of increased volatility of raw materials, and can drive sustainability strategies (such as recycled material availability), which can be a differentiating factor in an acquisition. Downstream integration might be pursued by players

aiming to reduce the distance to end users, especially for products with relevant knowhow; more and more, in the markets, customer centricity is considered a source of value, even more so than process and technology leadership.

Value Creation consolidators should have a clear idea on the main source of value derived from each acquisition, for instance, synergies both on top line and bottom line (for example, footprint optimization, operational improvement, functions rationalization), diversification in terms of product portfolio amplifying the coverage of applications or substrates or completing the range covering the full spectrum of applications or geographic diversification. Synergy evaluation should be based on a rigorous assessment of different levers that requires not only strong capabilities on pricing and cost management (to ensure profitable and sustainable portfolio consolidation) but also operating model re-design and culture. The main issue emerging in consolidation processes is how to integrate standalone assets (which are sometimes difficult to optimize) as well as different but strongly established cultures.

Finally, sustainability is a critical element to extract additional value considering that more and more customer needs, such as packaging, will focus on sustainable products.

For consolidators, key steps for a successful expansion should include the following:

- 1. **Strategic Acquisition Program** helps in ensuring coherent management and a steady stream of opportunities. It involves balancing formal and informal acquisition activities, improving the processual understanding of capital allocation, and focusing on the actual assets of potential acquisition candidates.
- 2. **Critical Evaluation of Acquisition Targets** involves conducting thorough research on prospective businesses that align with a company's strategic vision and evaluating risks, synergies, and fit within its portfolio. A synergies estimate is usually not enough as value may emerge from the acquisition of assets for which there is a strong potential for technology innovation.
- 3. Resource Fulfillment and Core Competency Development means seeking funding to exploit growth opportunities and building core competencies essential for expansion. This includes skills in areas such as technology and collaboration with stakeholders. As anticipated pricing and operational excellence are essential to drive successful integration, in a very established but also diversified sector, re-thinking the operating model is key.
- 4. **Post-Acquisition Integration** involves building capabilities for acquisition and integration, ensuring governance, and achieving cross-subsidiary synergy. This requires managerial competence in organizational changes and adapting to new regulatory or cultural environments.

Target

Companies falling into the "target" cluster can adopt various strategies in order to either boost their appeal or defend themselves. Enhancing attractiveness might involve expanding into new markets, reducing debt, and looking for small acquisitions. Attractiveness and preparation for sales of specific assets or business units could be improved through an ex-ante carve-out from the target, especially for quite diversified companies having historically different businesses that might not be synergic to each other. This industry historically leverages carve-outs to reshape large and diversified portfolios into more focused groups. Additionally, targets should also highlight segments and elements with a good to high potential and relatively low investment needed. At the same time, defense strategy should include a turnaround program focused on growth opportunities into new

markets/products, search partnerships, and a doubling down on strategic growth.

The following summarizes some of the initiatives a target can implement to become more "attractive" for either strategic or financial investors:

- 1. **Selective Transformation Approach:** setting bold aspirations and defining full potential across both portfolio and performance, while outlining a clear roadmap to value and new opportunities (for example, new partnerships, JVs, product diversification)
- 2. **Process Improvement and Optimization:** focusing on capability building, process improvement, and technology to drive steady improvement in performance and standardization, also leveraging technology and analytics as well as change management skills
- 3. **Analytical and Structured Commercial Excellence:** building a view of where and how to win in the market, leveraging analytics to achieve sustained growth and success

Turn and Question Mark

Recent market trends put several players under pressure: companies falling into the "turn" and 'question mark" cluster may adopt strategies to boost their performances as well as identify growth strategies in order to turn around their return on capital. In particular, strategic or financial investors (the increasing role of private equity funds is pushing in that direction) should adopt a Holistic Transformation Approach to foster their performance (in both commercial and operations). The strategy should entail capital-light initiatives such as the development of new products leveraging current asset portfolios and entrance into new adjacent markets with a clear go-to-market strategy. Innovation is a critical capability to transform a company not only in product portfolio but also in process digitization: AI has still a limited role as value creation lever in the industry. In any case, a clear strategy should be defined before entering into a transformation process

As a final consideration, M&A is and will stay more and more as a priority lever to reshape the sector in a new age of uncertainty, characterized both from a market and regulatory perspective. Operators should carefully leverage the proposed framework to identify as a first step where they are positioned and where they want to move; deals announced/planned in these days show a deep changing environment in which companies (either consolidator, target, question mark, or turn ones) can rapidly change their roles and related strategies.

Acknowledgement

I would like to personally thank Maria Yulinda, Daniel Kim and Michele Giammarrusti for their invaluable support shaping this work.



