



# Suzano Papel e Celulose presents the technological advantages of its Tissue mills

The Mucuri (BA) and Imperatriz (MA) units are equipped with cutting-edge technology to deliver a varied and high-quality portfolio



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The tissue segment stands out among the other types of paper for the continuous growth rates it presents. Even considering the difficulties caused by the economic crisis that has plagued the country's economy since 2015, tissue paper registered a 1.5% production increase in 2017, with a total volume of 1.281 million tons, according to Anguti Estatística data.

The perspectives for this year and the next are even better, given the growth potential of the Brazilian market. The reason resides in Brazil's per capita consumption, which is considered low in comparison to mature markets: while tissue paper consumption amounts to around 6 kg/inhab./year in Brazil, consumption in the United States totals 25 kg/inhab./year. When comparing Brazil's consumption against other Latin American countries, the difference is smaller, but still significant: Brazil is positioned below the average of Latin America and below Chile and Mexico, which present a per capita consumption of 13 kg/inhab./year and 9 kg/inhab./year, respectively.

Consumer preference for greater value-added products stands as another expected trend in the tissue segment over the next years. Anguti Estatística reports

a 12.4% increase in two-ply toilet paper production, with 434.1 thousand tons produced in 2017 compared to 386.2 thousand tons produced in 2016 — figures that already demonstrate the trend's development.

Aware of all these movements in the sector, Suzano Papel e Celulose entered the consumer goods market in the second semester of 2017. Last September, the company began operating its first tissue mill in Mucuri (BA), and, in November, it officially started up the Imperatriz (MA) unit — both with a capacity to produce 60 thousand tons of tissue paper jumbo rolls per year, and a capacity to convert 30 thousand tons into finished goods at each unit.

With an investment of R\$540 million, the company's new production units aim to supply the tissue market in the north and northeast regions of the country coupled with the production from Facepa (Fábrica de Papel da Amazônia S.A.), a company that operates in Belém (PA) and Fortaleza (CE) and was acquired by Suzano in March 2018 following a R\$310 million investment.

Together, the mills total an annual production of 170 thousand tons of tissue paper and already position Suzano as the #2 producer in Brazil in this segment. In alignment with Suzano's strategy to



expand activities into adjacent pulp-product markets, the acquisition of Facepa increases operations of its new consumer goods business unit and ensures a better product offer in the north and northeast regions, being even closer to end consumers.

Before Suzano began producing at its Mucuri and Imperatriz mills, regional demand for tissue paper was satisfied by mills located in the south and southeast regions of the country or by local companies. Following the acquisition of Facepa, which was approved without restrictions by the Administrative Council of Economic Defense (CADE), the quality of services provided in these regions became more favorable for consumers.

### Learning curve evolving as planned

Marcelo Zenni, industrial executive manager of Suzano's Consumer Goods Unit, informs that the company's first tissue startup relied on the participation of a multidisciplinary team that gathered professionals from all companies involved in the project and from the machine's technical and operational team. "The learnings from the Mucuri startup facilitated plans for starting up operations at Imperatriz, since we worked with practically the same team in both projects," he said about the projects that mobilized roughly 1,200 people, combining Suzano's teams with support from Voith, in the tissue lines, and from Fabio Perini, with the conversion machines, as well as other service providers of construction works, instrumentation and others.

According to Zenni, the two production units have shown good evolution based on the learning curve originally projected, both for semi-finished production (reels), as well as end products earmarked for clients and consumers. "Production at both mills is within the expected level and we also have a good asset occupation rate," he said.

In this production growth process, with a focus on the learning curve, major challenges are being overcome, reveals Zenni. Examples include the accelerated absorption of fundamental concepts for ensuring high quality, the agility of teams in discussing and taking actions to solve problems that occur at each speed-increase phase of machines, the stability of processes and interrelations with production processes of pulp mills, given their sharing of the utilities area and virgin fiber.



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In terms of challenges already surpassed, Zenni mentions the adaptation of the technical team considering the high level of automation, new technologies and use of never-dry pulp, one of Suzano's differentials in production: elimination of the pulp drying stage. The fact that the operation is integrated, with pulp being pumped directly from the production line, is unparalleled in Brazil and yields expressive gains in steam and energy consumption. "This characteristic allows us to have the only energy self-sufficient mills in Brazil, given that the production unit generates sufficient energy to supply the tissue plant, as well as other inputs like water," said Zenni.

In practice, production of tissue paper at Mucuri and Imperatriz begins with pulp being pumped to the receiving tank. "From there, it goes to the refiners, which purpose is to provide resistance to paper. Next, the process continues to the diluting phase and purification system, through centrifugal separators. In the following stage, it goes through the mixing pump, which injects the solution of pulp and water in the headbox, which is where the sheet of paper begins being formed. The product then passes through a drying system via mechanical pressure (press), vacuum and drying through hot air and steam and, lastly, goes to the paper rewinding system. At this time, we have reels, large-size paper rolls as end product," said Zenni.

He adds that, during the production process, some chemicals are included to control pH, adjust paper color, resistance to moisture and dryness and create a protective coating in the drying cylinder. "These additives include resin for moisture

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resistance, anilines, release agent, mono ammonium phosphate, enzyme and others.”

In the last stage of the process (conversion), the reels are converted into toilet paper rolls. The stages in this process include unwinding, embossing the paper using rubber and steel rolls, sheet perforation system, rewinding of paper, cutting, packaging of rolls in different presentation sizes and, lastly, bundling of packages to facilitate product transportation to end clients.

Technological advantages of Suzano’s new industrial plants include the capacity of machines in Mucuri and Imperatriz to form paper sheets. “They deliver excellent sheet formation while also delivering superior softness, fundamental aspects for competing in a higher-quality market at competitive costs,” says Zenni about the competitive edges of the company’s equipment. Monitored online, the specific controls and cost control are other important advantages of Suzano’s tissue projects.

In the conversion stage, cutting-edge rewinding technology leads to the production of tissue rolls that are superior to the market average. “Paper integrity is ensured from the beginning to the end of the roll, and sealing of the end is done by mechanical pressure (thus avoiding the inconvenience of sealing the end with glue, as well as eventual waste). On top of that, the embossing system has been conceived for paper softness to be the same on both sides of the sheet,” says Zenni.

Facepa has older tissue making machines, but the technology of its conversion lines in Fortaleza are recent.

According to the company, it will be investing to increase the efficiency and performance of machines already installed.

The supply of dry pulp to Facepa’s production units is done by the Suzano Imperatriz mill. “We recently also began supplying tissue-paper jumbo rolls to Facepa plants and thus increasing the volume of finished goods converted at its units,” says Zenni.

### Labor qualification process includes exchange program between teams

According to the executive, preparation of the operational team — planned and executed over five months — was fundamental for the success of the company’s tissue projects. “During this skill-building process, we have worked several fronts, such as training the team on Suzano’s operating processes (operational excellence, pulp obtainment process, bleaching, steam production etc.) and specific training for case studies of water, stock, steam, compressed air flowcharts, and studies on the functioning of the paper machine’s main equipment,” says Zenni. “We also conducted a workshop with the participation of partner companies that supply felt, screens, chemicals, stock preparation, wet and dry part of machine, and promoted training of the operational team,

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simulating the machine's operation," he said about the 300+ class-hours ministered to each employee in terms of technical and behavioral training.

Today, Suzano has roughly 1,450 people working in the Consumer Goods business unit. "Most of the team works in the Facepa Belém operation, being also distributed among the Fortaleza, Mucuri and Imperatriz units. We have also sales and merchandising teams throughout the country and an administrative team in São Paulo headquarters," says Larissa Moraes, People manager at Suzano.

She mentions that with the Facepa acquisition, Suzano has conducted a strong exchange program of best practices and processes among operations. "Now, we are in a people swapping phase with the objective of putting into practice all the experience of this multidisciplinary team with different cultures, fast-tracking the exchange of knowledge and training processes," she said about the current stage.

Regarding the integration process of Suzano and Facepa production units, Guilherme Barreto, strategy and business development manager, reveals that the company has been working on mapping improvement opportunities and processes while putting in place the Suzano culture, since Suzano took the operation over in March. "This process is already underway and occurring in parallel with the Belém and Fortaleza plant optimizations, coupled with production of

jumbo rolls at the Imperatriz site. With this, we have ensured the operation's stabilization and convergence of policies and procedures."

In terms of advancements achieved since Suzano acquired Facepa, there is the implementation of the company's Occupational Health & Safety culture, the production volume increase from contracting a new working shift, operational optimization with the Imperatriz production, in addition to code of business conduct training, and improvements in daily management systems and processes.

### Comprehensive and high-quality portfolio strengthens commercial strategy

Creating a Consumer Goods unit in a market with 50+ companies in the segment was another major challenge for Suzano when entering this new niche. "The focus on creating value for our stakeholders is the key to the process," says Adriana González, marketing director for the company's Consumer Goods unit, pointing out that knowing the needs of consumers and clients was fundamental in defining Suzano's strategy in the tissue segment.

Another stake that the company made was to "gather engaged people in an ambitious project, creating value for stakeholders, united by the dream of establishing a consumer goods unit with a global

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vision, with a portfolio of high-quality products dedicated to improving people's lives," says Adriana about the strategy of becoming the market leader in the North and Northeast regions and the major opportunity of leading a segment in Brazil, with potential to increase per capita consumption, taking advantage of its position as one of the top producers of pulp in the world and aware of the needs faced by clients in these regions.

Suzano's tissue portfolio is currently composed of two-ply toilet paper, single-ply toilet paper, napkins and baby diapers marketed under the brands Mimmo and Max Pure, developed exclusively by Suzano, and the following Facepa brands: Floral, Le Blanc, Scala, Nino, Tutto, Naps, Fleur, Maxx Baby, Econoclean and Guloso Bag.

In terms of own brand development, the Marketing director says that a series of surveys were conducted to understand consumer needs and to put forward a value proposition. "What inspires us is to be able to offer not only products, but also solutions to our consumers and their families," she says. "We are aware that they aspire to purchase the best but are not always able to, as they have a limited household budget. Hence, we saw the opportunity to offer better products at an attractive price. So, we came up with the idea of creating our own brands and positioning," she says, pointing out that a lot of communication surveys have been conducted so that this proposition clearly reached end consumers.

Adriana says that Suzano's main objective is to be a consumer goods company with multiple brands and multiple products, doing business in several regions. "With the Facepa acquisition, which is

the biggest tissue manufacturer in the North and Northeast regions, we continue advancing towards this objective of offering our consumers a broader product line of market-leading brands and categories that satisfy their needs," she said about the objective, expected to be reached over the next few years.

## **Facepa's experience helps improve logistics management**

Among the processes that comprise the logistics activities of Suzano's two tissue units, there's Production Planning and Control, S&OP (Sales and Operations Planning), Sales Order Invoicing and Processing, Customer Service, Warehouse Management, Distribution Center Operations and Transportation. "It was important to have the possibility of learning and understanding the processes executed by Facepa and to have Suzano incorporating its best practices," says Ricardo Gonçalves, Supply Chain director of Suzano's Consumer Goods unit, on the logistics structuring stage of the new plants.

Gonçalves informs that the company is currently working on creating unique and optimized processes, implementing best practices in each one of the plants. "We are also capturing synergies from our footprint of servicing customers and suppliers," he says regarding the geographic presence of Suzano's operations and the company's product distribution structure.

Regarding the work currently being done, the Supply Chain director of Suzano's Consumer Goods unit explains that acquisition of Facepa led to the development of a study outlining the best logistics model to produce the brands and the best distribution center to satisfy each client, "servicing them increasingly better and making our products available on shelves for consumers".

The same applies to supply chain. According to Gonçalves, the goal is to have a very competitive supply chain from a cost perspective and also very agile to respond to sales variations, making Suzano's logistics a competitive advantage also helping boost sales.

Regarding the main differences between carrying tissue production — light products, but with high volume — vis-à-vis the other paper products Suzano produces and markets (printing and writing, paperboard), Gonçalves emphasizes transportation. "The vehicles for paper are planned and loaded according to weight (kg), while for tissue it is done in terms of volume (cubic meters). So, we're talking about a significant change in

## Dimension of Yankee dryers called for detailed logistics management

**T**he challenges Suzano had to overcome when entering the tissue segment with two new production lines are not limited to the learning curve period. Due to the project's dimensions, other obstacles surfaced since the very beginning of the plant constructions. "Such was the case with transporting one of the tissue machine's main pieces of equipment, the Yankee dryer, to the Mucuri and Imperatriz units," says Sandro Almeida, Suzano's logistics process consultant.

Used to remove excess of moisture from pulp, the Yankee dryer weighs more than 100 tons and is five meters wide in diameter. "To plan for the transport of the Yankee dryers, we had to build a specific logistics model through a joint effort between all companies involved," says Almeida. "It was up to this task force to arrange for the transport license, authorization to trim certain trees where the vehicle would drive by, arrange police escort and even correct certain parts of the road along the way," he says about the process that extrapolated Suzano's logistics management and gathered more than 15 people from different companies in the effort. "The task included developing a detailed logistics project specifying the necessary vehicles, reinforcing barges, fixing roads, trimming trees and the work from a team that was not from Suzano, Voith (tissue machine manufacturer) or from TransPes (special cargo logistics operator), but rather an entirely different group of people," he said.

To enable the construction of both plants within the projected timeframe and budget, Suzano conducted extensive research that started out with an analysis of all action stages. Guilherme Barreto, Strategy and Business Development manager of Suzano's Consumer Goods business unit, says that this plan took into consideration the schedule of both plants so that there was a matching of dates and identification of critical paths.

The Yankee dryer installed in Mucuri, for example, came from São Paulo, while the dryer installed in Imperatriz was built in Manaus (AM). "The truck that transported the Yankee dryer from São Paulo to Mucuri proceeded towards Belém. From there, it took one week by barge to arrive in Manaus, where Voith developed the Yankee dryer for the Imperatriz unit. The truck then left Voith Manaus by barge until Belém, and then traveled by highway until Imperatriz, where it arrived roughly one month later. Only after this careful travel plan was the equipment ready to be installed in the mill," recalls Almeida.



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logistics management and, therefore, analyzing ways to contract unusual freight, using specific vehicles for this type of transportation," he said about planning.

Regardless of the relevant change in operation

structure, Suzano has used the same system in its paper operation to implement the consumer goods project. "Suzano has always worked with big volume products. With pulp and paper, we're talking about trucks carrying more than 20 tons. Additionally, the fact that we already have customer service logistics processes already in place significantly has facilitated our entry in the market," says the executive.

Suzano's initial strategy is to improve the service that is already provided by Facepa in the North and Northeast regions, and coupled with its own plants, becoming the market leader of this relevant market. "We are already leaders in the North region and wish to grow this position even more. Our footprint is formatted for this. To achieve this objective, we also need to serve with excellence certain clients that operate in other regions. We are prepared for this," says Gonçalves about next steps. ■



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