



## CASE STUDY

# INCREASED TECHNICAL AVAILABILITY FOR SMURFIT WESTROCK'S PAPER MILL

The Smurfit Westrock Parengo (SWP) paper mill in Renkum, part of the global packaging company, is renowned for producing high-quality paper-based packaging solutions. This facility in the Netherlands has a rich history of adapting to changes in the paper manufacturing process.

With a strong focus on sustainability and innovation, SWP now operates two paper machines, producing both graphic paper products for advertising and packaging paper. The site emphasizes creating environmentally friendly products using advanced technology and efficient manufacturing processes. To maintain this focus, SWP recognizes the importance of efficient production processes, leading to the initiation of a comprehensive FMECA (Failure Modes Effects and Criticality Analysis) project in 2021.

---

## **AMBITIONS: IMPROVING AVAILABILITY**

At Smurfit Westrock Parengo, improving the availability of their assets is key to enhancing operational efficiency. To achieve this, the maintenance department aimed to optimize their mix of maintenance strategies, emphasizing preventive maintenance and better spare parts management, specifically for their paper machine 2 (PM2). In 2016, the paper mill converted PM2 from newsprint to a cardboard machine and built a new Recovered Fiber (RCF) installation. This RCF installation is directly linked to PM2 and provides the raw material for it. PM2 produces two types of packaging paper from 100% recycled paper, with a production capacity of 385,000 tons per year. During the startup phase, preventive maintenance received little attention. In 2021, SWP asked MaxGrip to team up with them to examine the failure behavior of PM2, identify risks, and prevent them through maintenance plans and proper spare parts management.

---

## **APPROACH: FMECA**

The FMECA process, led by a MaxGrip consultant, involves multidisciplinary teams from both the maintenance department and operations. These teams systematically evaluate potential failure modes and their effects for the biggest 'performance killers', using a structured procedure to:

The team follows a detailed procedure:

1. Identify the functions of the component: Determine the primary and secondary functions that the component is intended to perform.
2. Assess functional failures: Evaluate any failures that prevent the component from fulfilling its intended functions.
3. Determine failure causes: Investigate the possible causes behind each functional failure.
4. Analyze the effects of the failures: Assess the impact each failure might have on the system or process.
5. Evaluate consequences in relation to the risk matrix: Use a risk matrix to prioritize the severity and likelihood of the identified failures.
6. Identify possible maintenance actions: Develop and propose maintenance actions to mitigate or prevent the identified failures.

The consultant facilitates brainstorming and discussion to develop mitigation strategies and plans to reduce or eliminate high-priority risks. This collaborative approach, involving both technical and production staff, has been instrumental in improving SWP's maintenance strategies. Niels van Druten, a technician in the maintenance department, notes, "Previously, I would look at a machine superficially when something broke down. Now, we dive into it together. Documentation is much quicker and easier to read. We learn from the production department which parts are important to them, and we can share our technical knowledge. You quickly realize that we need each other to improve."

---

### Synergy between Maintenance and Operations

This collaboration between maintenance and operations has broken down organizational silos, fostering a deeper mutual understanding of each other's goals and perspectives. By working together, these teams gain detailed insights into the machines, their importance, and specific functions. This shared knowledge enhances communication, speeds up problem resolution, and promotes a proactive approach to maintenance and operations. Mike Scheffer, a first operator on PM2, adds, "As an operator without a technical background, these sessions are very educational and valuable. You start looking at machine parts in more detail. We share information and knowledge, which has a positive impact. Now, I perform small maintenance tasks myself, plan changes, and assemble or disassemble parts when needed."

"Thanks to the FMECA project and MaxGrip's facilitation, we are able to get a good grip on the uptime and see it improving year over year since we started the project. A great spinoff is the improvement of knowledge of the team members who participate. All valuable elements which MaxGrip brings to the table for our company."

Sander van Wezel  
*Technical Manager Smurfit Westrock*



## BENEFITS

## INCREASED TECHNICAL AVAILABILITY

Dolf ter Schure is maintenance engineer at SWP and closely monitors the results of the FMECA project. "Doing the right maintenance at the right time, learning more about the machine together, and having the right spare parts: these are all important element for performance improvement. By being able to demonstrate this effectiveness, you see that everyone from management to the shop floor appreciates the added value of this project."

### Key results:

- The technical availability of PM2 has increased from 93% in 2021 to approximately 96% in 2024, thanks in part to the FMECA project;
- The winder, previously a 'performance killer', saw downtime due to technical reasons drop from 120 hours annually to 40 hours;
- The detailed insights gained into the installations have led to improved maintenance plans with more preventive maintenance and doing the right maintenance at the right time;
- Thanks to the cross departmental collaboration, efficacy of both departments has improved with, among other things, improved communication and understanding of the machines as well as operators taking over some maintenance tasks;
- This project has not only optimized operational performance but also established a foundation for continuous improvement;
- The FMECA project with MaxGrip will continue with the next bad actors to continue improving availability of the assets.

*The Winder of PM2 - Image © Smurfit Westrock*



MaxGrip is a global Asset Performance Management consultancy that enables asset-intensive organizations to improve their bottom line by optimizing asset performance and accelerating digital transformation. Our experts work with leaders in a broad range of industries, including Oil & Gas, FMCG, Power Generation & Distribution, Water and Wastewater, Infrastructure and Metals and Mining.

Learn more about our solutions and clients at [maxgrip.com](https://maxgrip.com). Or contact us via [info@maxgrip.com](mailto:info@maxgrip.com).