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USING DATA AS A GROWTH RESOURCE

HOW DIGITALIZATION CAN ENABLE SUSTAINABLE FOREST AND PACKAGING OPERATIONS

FOREST AND PACKAGING COMPANIES NEED TO INNOVATE TO OVERCOME A CONTRADICTION BETWEEN THE ABILITY TO DRIVE AND CAPITALIZE ON INCREASED DOWNSTREAM INNOVATION TO CAPTURE GROWTH POCKETS. AT THE SAME TIME, THEY HAVE TO HANDLE INDUSTRIAL SUPPLY CHAIN ASSETS EFFICIENTLY.

By doing this, managing forest and fiber assets in a competitive yet sustainable way is becoming a core strategic capability for them. If they want to achieve sustainable and profitable growth, they must effectively manage this contradiction between value chain integration and multi-specialization. Furthermore, digitalization should be recognized and used as powerful enabler to support and align with these two elements. By doing this, companies should observe the following rules and trends.

FOLLOW PRODUCTS THROUGHOUT THE CYCLE

Because fiber and its derivates, such as packaging solutions, can enter adjacent circular flows, there is an increased importance of the strategic capability to understand and enhance adjacent circular economic flows. This makes it crucial to leverage usage data and process loss intelligence data within an ecosystem of partners across adjacent flows, and digital sustainability product passports that follow products throughout the cycle.

But digitalization offers even more opportunities, of course. Data activation, analysis, monitoring, end-to-end tracking and tracing, and forest fiber origin guarantees come together with solid TPM and Lean based operational platforms to allow these companies to deliver on sustainability and consumer demand while still remaining competitive. Future investments in the industry should already upfront be leveraging digitalization opportunities as part of the move to transform white- and blue-collar work into higher value-adding activities. Modern early management techniques are well-fit for this.

KEEP UP WITH A CHANGING LANDSCAPE

There are good examples of intelligent locally developed digitalization use cases and proof of value initiatives that help to paint the picture of how to keep up with all this change through central funding and testing. Just a few examples of what's out there: Drone-based inspection of forest assets, virtual 3D-simulation and training environments for emergency shutdowns in pulp production, image-based quality inspection of paperboard production via intelligent analysis tools.

Local initiatives often do not scale due to the long investment cycles of the industry. This can lead to phenomena such as multi-generational production line equipment within a single mill, or non-integrated software environments. The fact that a solution works in one site does not mean that it scales well into others.

There are also challenges or prerequisites to consider with Big Data analytics. Allowing different shift teams to work in different ways makes it hard for artificial intelligence to provide real prevention and prediction insights. Or, for example, it is feasible to analyse signals around a paper machine to prevent web breaks. But significant results in terms of increased efficiency and effectiveness of manufacturing processes are not delivered by technology alone – here, the knowledge of the employees is also a decisive success factor. Total Productive Maintenance (TPM) processes involve the workforce, for example, when it comes to reducing noise in production. To this end, the implementation of standardized cleaning, inspection and lubrication (CIL) procedures is essential, and line employees can and should contribute to their best possible implementation.

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INTEGRATE IT WORK WITH KAIZEN AND RETHINKING THE LOSS CONCEPT

One of the key challenges along the path to unlocking the full potential of Industry 4.0 is the question of how to integrate horizontal smart digitalization platforms and modern high-performance operations systems based on Shingo philosophy, and Lean and TPM models. There is a concrete path towards this goal, that industries are starting to address now. They fully integrate IT organization work with an organization's continuous improvement teams – part of the Kaizen approach of making constant small positive changes that can result in significant growth and efficiency enhancements – and other more focused improvement teams, to generate more top-down project driven change.

In addition, many operational losses can be eradicated by routines developed by the people working in processes: e.g., reducing web breaks to zero, reducing water consumption by 30%, reducing material losses by 70%. If these examples were expanded horizontally across the industry, the world would be in a much better state and the companies of our industries would be better equipped, standing on a fundamental capability to also attack sustainability losses in all areas in the same systemic way. Further to this, a good example of a transformational step-change opportunity to minimize strategic losses in circular flows lies in volume and routing planning software for transportation system solutions for packaged goods. Up to 50% of sustainability losses here originate in goods transportation.

CREATE A ROADMAP TOWARDS SUSTAINABLE OPERATIONS

Forest and packaging companies must build a robust Industry 4.0 strategy roadmap for their digitalization journey. This must, in turn, be supported by a target information and communication technology architecture. For this industry, taking a five-year perspective is optimal, with a zoom-in on the first 12 to 36 months.

Circular economy flows—economic systems aimed at minimizing waste—are replacing traditional value chains, and the forest and packaging industry has the means to this transformation not only for its own directly-controlled circular flows, but also as it enters into others. We likewise identified that investor screening of poor environmental, social and governance (ESG) scores for forest and packaging companies can follow negative publicity. The fact that ESG share price valuation indexes strongly influence the direction of the companies means that there is a need here for increased transparency, which is another opportunity for digitalization.

CHANGE THE SYSTEM ITSELF

To fully unlock the potential of sustainable digitalization, forest and packing companies must adopt the sustainability agenda systemically. Sustainable Development Goal #9, in particular, calls for action for sustainable industrialization and encourages organizations to take control of their internal sustainability losses, integrate sustainability work into operations, and engage co-workers on every level, leveraging a strong TPM based backbone capability.

Today, machine learning and pattern recognition can be used to predict and prevent defects and disturbances, a technique has been around for many years now. If the industry addresses the challenges and implement the basic TPM work, there are huge opportunities to get support on the journey to zero losses with existing solutions and further spurred and accelerated by new technology. We just need to constantly stay abreast, injecting new competence while involving and engaging the know-how that we have in our organizations.

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