




THE KEY TO A MORE PROFITABLE SAWMILL: MASTERING THE PAST, PRESENT, AND FUTURE



CONVENTIONAL WISDOM SUGGESTS THAT A PLANT IS ONLY AS GOOD AS WHAT COMES OUT. SO-CALLED SMART FACTORIES HAVE CHANGED THAT SOME, BUT JUST HOW SMART IS YOUR SMART MILL? WELL, STRAP IN, LADIES AND GENTLEMEN, BECAUSE THE WOOD TRANSFORMATION INDUSTRY STANDS ON THE VERGE OF INDUSTRY 4.0 OR, AS SOME LIKE TO CALL IT, THE 4TH INDUSTRIAL REVOLUTION.

INDUSTRY 4.0 IS AUTOMATION

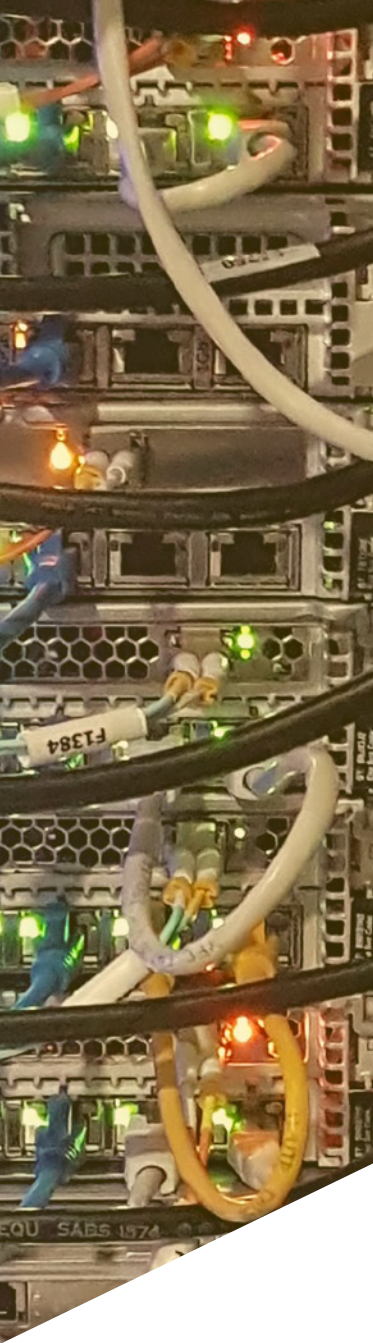
Roughly defined, I4.0 is the ongoing automation of traditional manufacturing and industrial practices, using modern, “smart” technologies. Large-scale machine-to-machine (M2M) communication and the industrial Internet of things (IIoT) are integrated for better automation and communication, self-monitoring, as well as “smart” analysis and diagnosis without human intervention.

Such revolutions, despite offering unprecedented opportunity for change, never come without a price—**usually at the expense of people**. Starting at the digital revolution in the late 20th century, people began being seen as a major source of mistakes. The reality, rather, is that systems and throughput became too complex to manage. Yet, people are to this day held accountable for system performance.



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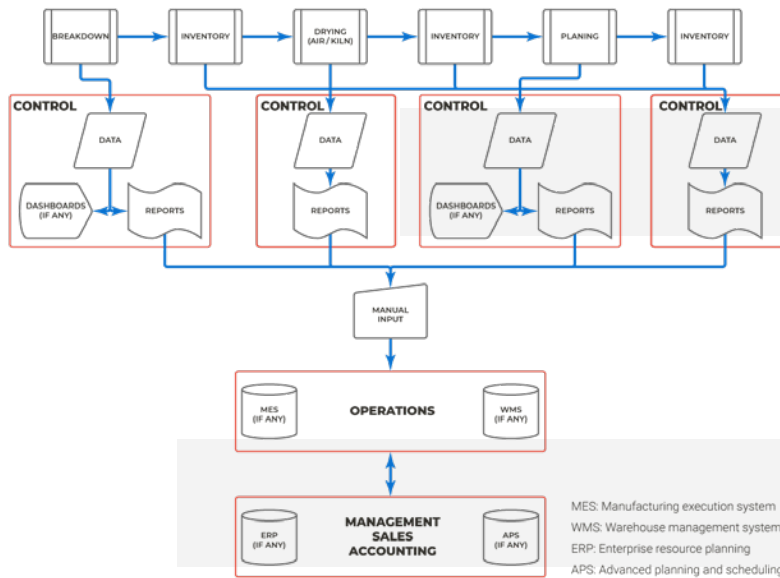




14.0 WITHOUT ACTIONABILITY IS NEXT TO USELESS

Despite the growing presence of M2M communication and IIoT in sawmills, very few take full advantage of the opportunities they offer. Instead, you rely on manually maintained data systems and old-fashioned reporting. So doing, you miss on the gains to be made by leveraging the power of the data at your disposal. Indeed, most of the software systems and manufacturing platforms available to mills today are data collection tools that leave you faced with the gigantic task of structuring data in a meaningful and, more importantly, actionable way, leaving you faced to rely on programmers and analysts to get anything usable.

To this day, most smart mill information systems (automated or not) are structured more or less like this.



Nevertheless, at the core of sawmills is a basic information structure that most overlook by being too focused on fixing pressing issues or target-locked on a single output. This is what we call the **3 Pillars**.

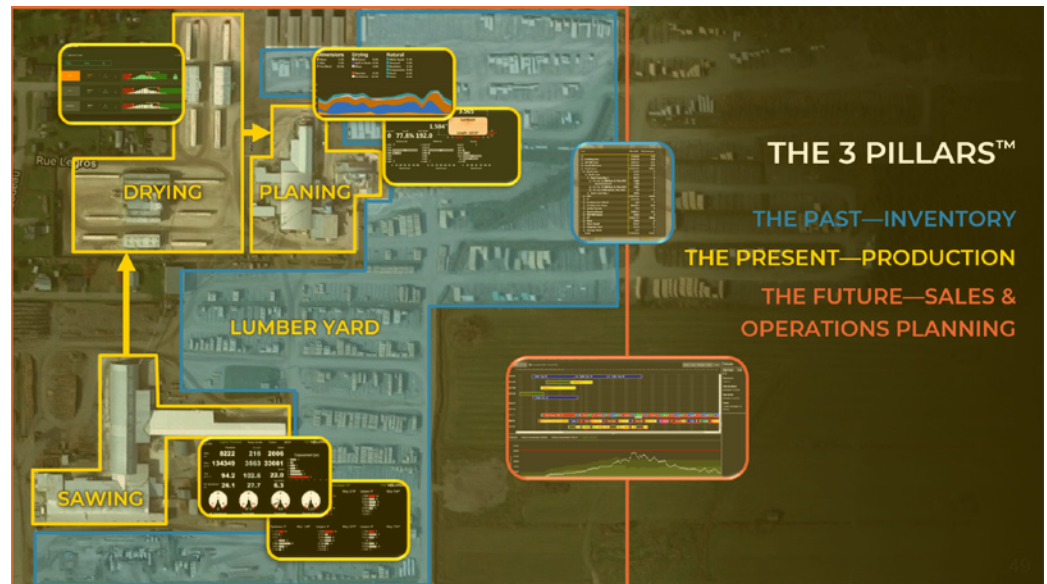
THE 3 PILLARS ARE A FEEDBACK LOOP



When you look at sawmill operations individually, they're usually seen and managed as discrete processes. They are optimized and issues resolved in an isolated manner—usually on the mill floor—with little to no thought given as to how this could affect other processes in the mill. When you look at the big picture, however, they can be summed up as: **inventory**, **production**, and **sales & operations planning (S&OP)**.

While they are microscopically complex, these three mill operational groups respectively embody the **PAST**, **PRESENT**, and **FUTURE** of your operations. They are the **3 PILLARS** and together they form a feedback loop.

Simply put, your inventory represents the past, as it is the materialization of past S&OP and production. As Spanish-American philosopher and writer George Santayana once said: "Those who cannot remember the past are condemned to repeat it." In other words, your inventory (your past) influences your future (S&OP). This, in the feedback loop, influences your daily manufacturing operations (your day-to-day or the present). Over and over and over.



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YOU'RE REACTING TO THE PAST

Now that you understand this, it's easy to understand that when you use conventional reporting to gauge your performance (in terms of volume or otherwise), you're using the past to orient your future—but you're doing it at the macroscopic level, as mentioned above, while on the factory floor, it's done at a microscopic level. To top it off, you won't see the results of your adjustments until you get your next production report, once the wood's in inventory.

In many mills, data is collected directly from the equipment (e.g., the optimizer) after each shift and / or from the lumber yard. This data is often copied into spreadsheets for analysis and reporting. It's easy to see how this takes time and is prone to errors. Even if they're shared between people in the mill, these spreadsheets are usually only intimately understood by their owners—the data isn't truly shared.

Furthermore, data analysts work eight to 10 hours a day in mills that operate 16 to 24 hours. The reaction gap can be wide—assuming everything runs smoothly.

For example, let's assume that someone forgets to enable a specialty product in a production run. It's very likely that this oversight won't be noticed until the run or shift is over. As a result, you'll be reacting—instead of acting—to this oversight, initiating the production again or delaying / canceling its delivery.

You're familiar with the headaches that brings: frustrated workers busy dealing with emergencies instead of getting value-added work done, missed market opportunities, and a less valuable product mix.



YOU NEED ACTIONABLE INSIGHTS TO CHANGE THE PRESENT

How can you go from reacting to acting? By unlocking the data sleeping in your mill's operational technology (OT), to anchor your business objectives and strategy, contextualize the KPIs you'll need to support your strategy, and leverage your mill's actual "smarts"—your personnel—by giving them the right information, at the right time to influence operator behavior and get the best results.

1. MANAGE YOUR INVENTORY BETTER

That's the first step towards leveraging the 3 Pillars effectively.

Knowing exactly what's in your lumber yard, whether it's freshly sewn, scheduled to be loaded for drying, waiting to be planed, or ready to be shipped, is the basic place to start leveraging smart insights. So doing, you gain an understanding of the projected value of your product mix.

Having logistical data at each stage of production about the packages in your yard can also be a boon to the efficiency of your mill. When you know that you have requested products, you also know when they'll be ready for delivery, and you don't have to look for them.

The lumber yard is set to be the next stage on the road to I4.0 because it's the perfect place for improvements, leveraging M2M communication, geofencing, and autonomous vehicles to get the most out of the yard. PMP SOLUTIONS is already getting this future ready.



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2. USE THE RIGHT INSIGHTS TO MASTER THE PRESENT

The second step in mastering the 3 Pillars is to rein in the present: production—sawing, drying, and planing.

The most basic insight is the real-time one from an equipment when it goes down. At a slightly higher level, IIoT enables properly orchestrating data generated by equipment in such a way that everyone can access information about manufacturing processes on a production line. For example, operators can receive near real-time alerts when output, performance, or quality drops below certain levels according to relative upper and lower thresholds (set according to strategic targets). This gives crews the tools to resolve issues before they appear in end-of-shift or daily reports, when they would be too late to correct.

Because the data is available to all, contextual, in real time or after the fact, thresholds can easily be aligned to important strategic / operational objectives by sales and / or the head office with the direct actions of operators immediately visible and measurable.

3. THE CONTROL TOWER: SALES & OPERATIONS PLANNING FOR THE FUTURE

The third and final step in mastering the 3 Pillars is to tie the past and the present by planning for the future. S&OP are intended to coordinate everyone and everything cohesively. When a mill's strategies are laid out over months and years, but live in an environment where supply, demand, and prices are constantly changing, it's important to have the necessary information to tweak plans appropriately.

Again, it's possible to leverage IIoT and information systems to give data proper context (within the limits set by planning). Operators and managers can access the information relevant to them from every operation in the plant (in real time or not). It then becomes possible to make one-to-one comparisons of the current output of the sawmill and the current demand, and then adjust orders, recipes, and scheduling according to the available timber and inventory. This agility offers managers the power to seize opportunities as they arise.



CONTEXT IS KEY

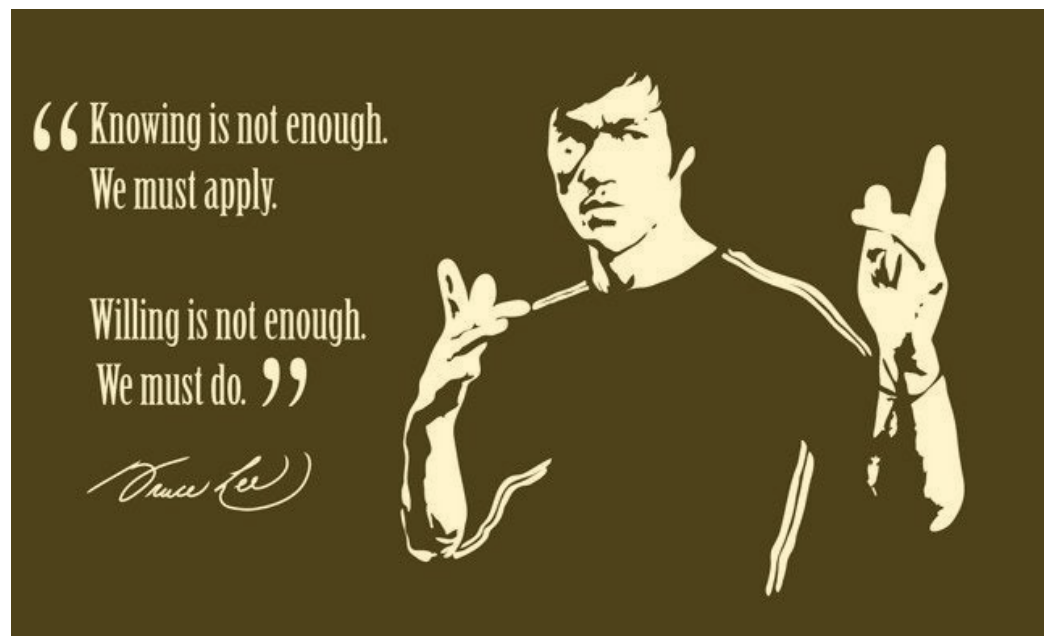
Connecting all the dots at the speed of your mill is not an easy task. More so than any other type of manufacturing, wood transformation plants are living organisms, dependent on timber to live. This timber, just like air for us, can vary in quality and we must deploy solutions to mitigate, which leads mills to dynamically adjust and evolve.

Like living organisms, mills need the proper signals to the right parts of their bodies (with the according feedback) to function to their full potential. Shunt areas of the brain and humans will develop a variety of issues—the same applies to mills.

Unfortunately, very few information systems on the market today are: a) developed for the wood transformation industry, b) do more than collect and aggregate data for later analysis.

PMP TEAMMATE™, our data historian and manufacturing platform, goes beyond simply collecting and tabulating data. It provides contextual signals to every stakeholder in the mill—from machine operator to managers—at the moment and the way they need it to act the most effectively to reach goals.

At the end of the day, your factory is only as smart as its people, and we all know that knowledge is power.





WE ARE PMP SOLUTIONS

We've known for a long time that people have an essential role to play in industrial systems. Nothing can trump the combination of a person's instincts, experience, and knowledge. We therefore develop technologies and tools that make it possible for people to manage complex, high-throughput systems, empowering them to reach their targets. Our measurement tools enable better comprehension and foster an environment where everyone can collaborate toward the same goals.

This is what we do—equip people with the tools they need to better manage mills, no matter what they do.

Founded in 2006, PMP SOLUTIONS is the leader in software solutions for the wood transformation industry. Our systems aggregate and contextualize data from multiple sources in the supply chain, and then present it in ways that users from all levels can leverage to enhance operational control and performance.

Formed by François Léger, Ph.D. and wood transformation industry expert, PMP SOLUTIONS is rich in intellectual wealth, which gives us a unique ability to push the limits of innovation. We've demonstrated a keen understanding of manufacturing systems and an impressive ability to structure production data. We market the PMP TEAMMATE™ software suite which offers the wood transformation industry ways to improve its mastery of inventories, production, and planning. PMP TEAMMATE fosters collaboration and communication between all the mill stakeholders, enhancing performance.

PMP SOLUTIONS plays an active part in the Engineering research on 4.0 industrial systems and the FORAC research consortiums. Being so involved in the R&D community has made it possible for us to contribute to the integration of new technologies in the manufacturing field.

**CONTACT US TODAY TO LEARN
WHAT WE CAN DO FOR YOU.**



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