International Paper has been operating for over a century. Headquartered in Memphis, Tennessee, it is the largest papermaker in the world, with over 55,000 employees in 24 countries. It produces a wide variety of containerboard, paperboard, paper, and pulp at over 40 mills globally. Pulp and paper mills are enormous capital investments. These investments obviously need to make a return, so there is pressure to continuously work on improving productivity. Even a 1% improvement in production output every year for 20 years means that, sooner or later, the packing part of the line becomes a bottleneck. IP seldom builds new mills, so it focuses on incremental improvements to the operations and efficiency of its existing mills.

Recent years have seen a seismic strategic shift in the industry, too. The rise of the internet has led to changes in how people get their information, and especially in how they consume news. The shift to online news has led to a collapse in the newsprint market. There has been a less dramatic, but still significant, change in the printing paper market too, so papermakers have had to adapt and change their production output. International Paper was one of the first companies to recognize these changes and shift its production towards board and pulp. This change in production means that the packing requirements at IP’s mills have changed as well.

The combination of the change in production and the improved machine efficiency means that many of the existing packaging solutions are no longer up to the task. And these packing systems are not minor investments, either. A single packing system can cost millions, and in just the last three years, International Paper has ordered systems like this from Pesmel for six mills in three different countries.

### Packing systems – from kraft to stretch film

Traditionally, packing systems used laminated kraft paper to wrap paper and pulp rolls. “Kraft wrapping was a synonym for packaging in the paper industry,” Fahllund explains. “Stretch film wrapping was something peculiar and strange. But the thinking has changed, and stretch film has started to spread.” International Paper used to use kraft paper, too, but it is migrating to stretch film for most of its new systems.

“From a capital point of view, stretch wrapping systems are lower cost, equipment-wise,” says Merrill. “From a maintenance point of view, you have fewer machine parts. It’s less maintenance cost, it’s less energy cost. It’s just fewer things to maintain.” As IP can’t afford to shut down its mills to install new systems, it has to fit the new system into the existing mill while everything is still running, so the size of the system is a vital consideration. The footprint of stretch film wrapping systems is much smaller than for kraft wrapping systems.

Customers, especially European ones, also want to have less waste to deal with, and plastic also recycles well. Kraft wrappers are laminated with a layer of plastic for moisture protection, which makes them harder to recycle. With a
This is a fairly select group of suppliers, as IP have stringent they are capable, or have presented strong evidence of this. The vendors selected have either already proved that they have the capability and experience to provide complete systems. The quality of the pulp or materials needed.

Choosing suppliers on merit

International Paper begins projects like this by drawing up the specifications and then inviting vendors to bid for them. Pesmel’s solutions are often not the cheapest in price, but they have at various times been the best in terms of total cost of ownership and installation, technological solution, floor plan and construction costs, or timeline. Their modular, pre-built, “plug-and-play” systems simplify construction and start-up on site.

While the time zone differences and amount of travel involved have been minor issues, Merrill says that communication is good – there has been no language barrier, unlike with some other suppliers. Pesmel’s understanding of International Paper’s processes and the way they like to do things is important, and their willingness to cooperate, their flexibility, and their desire to evolve along with the systems have been major factors, too. It’s the combination of all these things that has pleased IP on previous occasions, and it means that Pesmel continues to win their trust – and their contracts.

An involved process

The design and engineering phases normally take about six months and involve a number of very detailed meetings: kickoff meeting, general engineering review, mechanical design review, and electrical design review. “Then we’ll have a full acceptance test at the factory,” Merrill explains. “You put everything together, you hook it all up, and you actually run it.”

Assuming everything has gone well to this point, the process proceeds to the construction phase, which involves yet more close collaboration: planning the installation and commissioning, analyzing potential problems, and in those projects where installation and commissioning will take place during the regular maintenance outage of the paper machine, what IP calls an “eye-popper”: making sure that they are ready to go when the outage happens and that everything can be done in that relatively brief window of opportunity. In the old days, the installation and commissioning at site could take months, but now we are talking windows of weeks.

Habitual mill operations in diverse countries can create its own issues as well. There’s obviously the language barrier, as working in countries outside the US means that, generally, there are three languages involved: English, the local language, and the lingua franca – “broken English” as Fahllund labels it. This obviously leads to potential for confusion. Even when things go perfectly smoothly, having multiple languages involved slows down the erection and start-up phases, as the local labor force generally doesn’t speak English. Even when the local language is English, this doesn’t mean communication will be flawless. Merrill describes a project in Australia where the slang that the local workers used was surprisingly difficult to understand.

As you evolve the process, you also increase your expectations.

Well-designed system, the right equipment and the right materials, stretch packaging can also offer more appropriate packing quality. “That’s been learned the hard way,” says Merrill. “You have to have equipment that’s designed specifically to wrap rolls.” The equipment and the films themselves have evolved a lot over the years.

To an observer, there wouldn’t be much visible difference between the stretch film systems at IP’s mills, but the types of package that the different systems create are quite different. “If you walked into any of the mills, you’d see a machine doing one thing, and a robot doing another thing, and the rolls going out the end, and it would look almost the same,” Merrill says. “The difference is that white paper, board, newspapers, and so on prioritize mechanical protection, while the environmental layer keeps the content pure and protects it from odor contamination, dirt, and bugs, for example.”

Pesmel’s flexibility and cooperative attitude in this regard is one of the reasons why IP has selected Pesmel to supply so many systems. According to Kaj Fahllund, “At Pesmel, we have a certain kind of experience and we have been doing these systems for decades. But it’s not only the technology, it’s also that we understand how they want to do these things.”

International Paper is always keen to tell all their suppliers how they can improve, and Pesmel’s willingness to learn and better themselves is a good fit for this. “As you evolve the process,” says Merrill, “you also increase your expectations.” Good previous performance becomes the baseline for the next project. Over a decade of working together, Pesmel and IP have both adapted. Says Merrill: “They learn from it. We learn from it. We put processes in place to check stuff. They put processes in place to check stuff.”

Pesmel’s solutions are often not the cheapest in price, but they have at various times been the best in terms of total cost of ownership and installation, technological solution, floor plan and construction costs, or timeline. Their modular, pre-built, “plug-and-play” systems simplify construction and start-up on site.

In recent years, Pesmel has supplied or is currently supplying packing systems for six international paper mills:

- Riegelwood, North Carolina, USA – softwood and fluff pulp – 2016 (2 lines)
- Prattville, Alabama, USA – kraft linerboard – 2016
- Kidwyrn, Poland – paper, paperboard, and newsprint – 2016 (2 lines)
- Mogi Guacu, Brazil – pulp and uncoated paper – 2017 (2 lines)
- Três Lagoas, Brazil – uncoated paper – 2017
- Luiz Antônio, Brazil – pulp and uncoated paper – 2018 (3 lines)