



CHALLENGE

To effectively employ Lean Six Sigma methodologies to monitor and reduce manufacturing cycle times across a variety of products and operations.

SOLUTION

Kodak uses JMP® to consolidate, analyze, visualize and report cycle times across operations in its Leeds, UK, plant and modifies production practices based on findings revealed using JMP.

RESULTS

Kodak condensed data-analysis time for producing monthly reports on process lead times from two days to less than one hour, uncovered delays and discrepancies in production times, and reduced by half production time spent on tasks that did not add value.

MORE INFORMATION

www.jmp.com

www.kodak.com/uk

Trimming the fat yields Lean Manufacturing at Kodak

JMP® statistical software helps Leeds manufacturing team eliminate waste

As part of its ongoing commitment to quality, Kodak embraced Lean Manufacturing in the 1990s by adopting a Lean Six Sigma approach to its operations. Kodak's Graphic Communications Group (GCG), which produces lithographic plates for the printing industry, is a model of Lean Six Sigma.

GCG is located in Leeds, United Kingdom. Led by Peter Blum, GCG's quality and technical manager and a Lean Six Sigma Master Black Belt, the team at Leeds has integrated Lean principles and the use of JMP statistical software into many aspects of its operations. The aim? To trim away activities that don't add value.

From days to less than an hour

The Kodak plant in Leeds employs about 300 people, and Peter Blum is tasked with assuring that the products move through the plant with optimal efficiency. Always looking at improving the process, Peter has championed the plant's Lean Six Sigma program and is responsible for guaranteeing that the team practices the principles of Lean Six Sigma to the fullest.

"Lean comes out of the Toyota production system, and it has an approach and methodology all its own," Peter explains. "There are people who are experts in Lean and don't touch Six Sigma at all, and there are people who successfully combine the two.

"In using Lean, it's necessary to have a stable and invariable process. Six Sigma is very good at removing or reducing variability and stabilizing processes. Lean is about connecting flow and removing the waste between processes."

The key Lean measure within Kodak's Leeds plant is the total time it takes a product to move through the plant – from raw material to finished product.

According to Peter, "We gather all the information that tells us all the dates and times, the key stages, for every product that comes through the plant. We receive huge amounts of data, thousands and thousands of lines, and complicating things is the fact that the amount of volume you have on a particular pallet varies."

“Being able to identify where your main issues are – where you should focus your attention – is, obviously, very helpful. The processes we have are multifarious and fairly complex, and one of the useful things is to know where to go to apply your Lean tools. JMP targets my efforts.”

Peter Blum, Kodak Graphic Communications Group

However, when he launched the effort, Peter was unable to measure those weighting factors using the analytics software at GCG.

“So I ended up doing it all on Excel,” he continues, “and I had quite a large table of calculations that then would allow me to get all the weighting factors in to get a good measure of the rate it takes for the product to go through the plant.”

About two years ago, Peter and his staff began using JMP. Bingo.

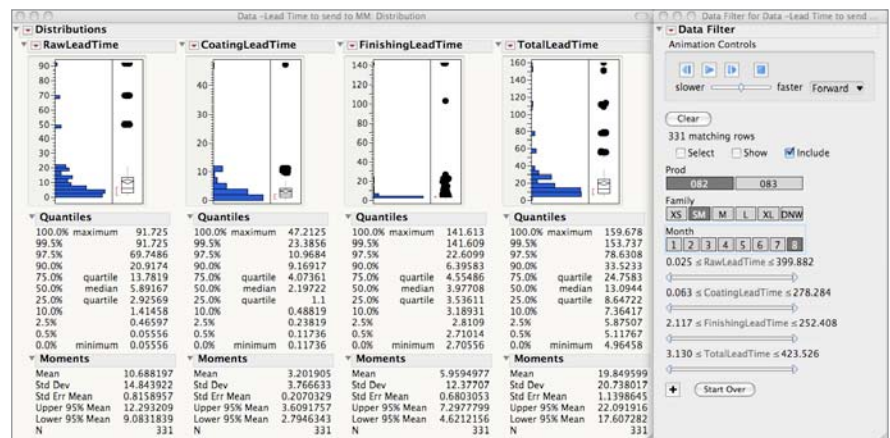
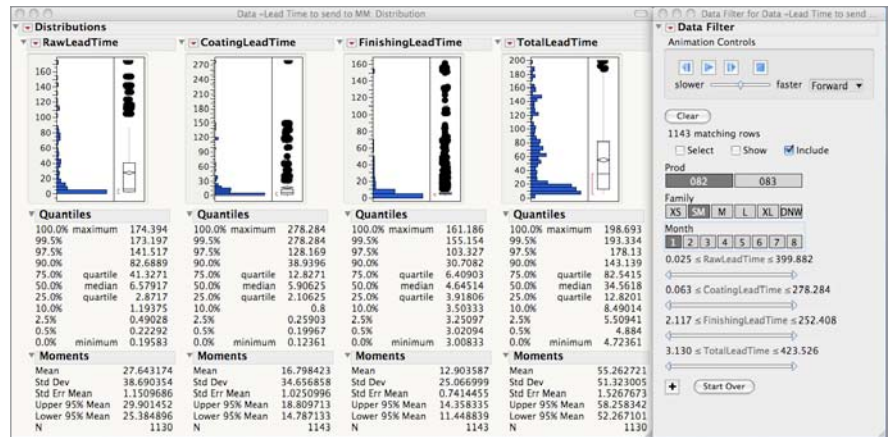
“It used to take me two days, once a month, to do those calculations and then graph them in Excel. With JMP, I can do it in less than an hour. The data comes to me as a download in Excel, and I just throw it straight into JMP, press a few buttons, check to see if the data is tidied up and then launch my analysis in JMP.”

Using the JMP Distribution platform, “in a couple of clicks, I’ve got a full description of everything by month, or whatever time frame I choose, plus the weight factors. That gives me all the basic statistics and measures I need.”

Breaking down the process

GCG now uses JMP to analyze the process, determining at which steps the materials are moving slowest.

“Using JMP, I can identify bottlenecks very easily,” Peter says. “Being able to identify where your main issues are – where you should focus your attention – is, obviously, very helpful. The



JMP distributions, data filters and animations show a reduction in cycle times over an eight-month period.

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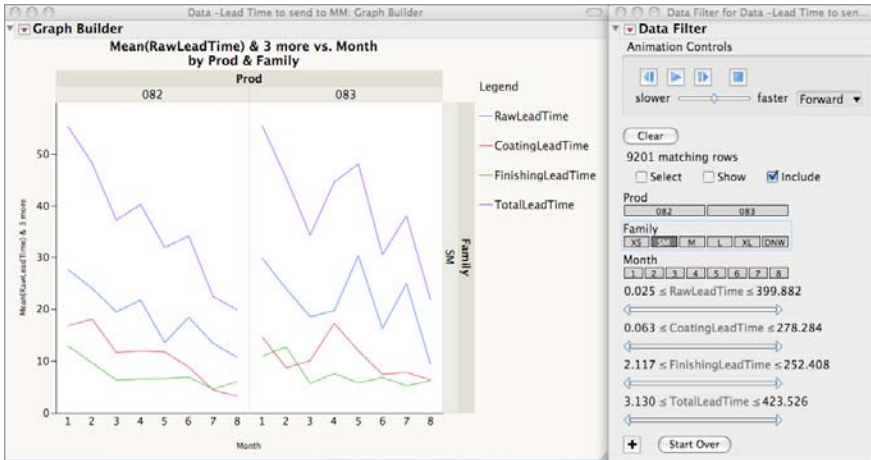
Among the things JMP helped uncover was a tendency to inadvertently leave things sitting to one side.

“If the average time for moving a product through the plant is 15 days and I see that it’s hanging around 30, 40 or 50 days, I ask what’s going on here,

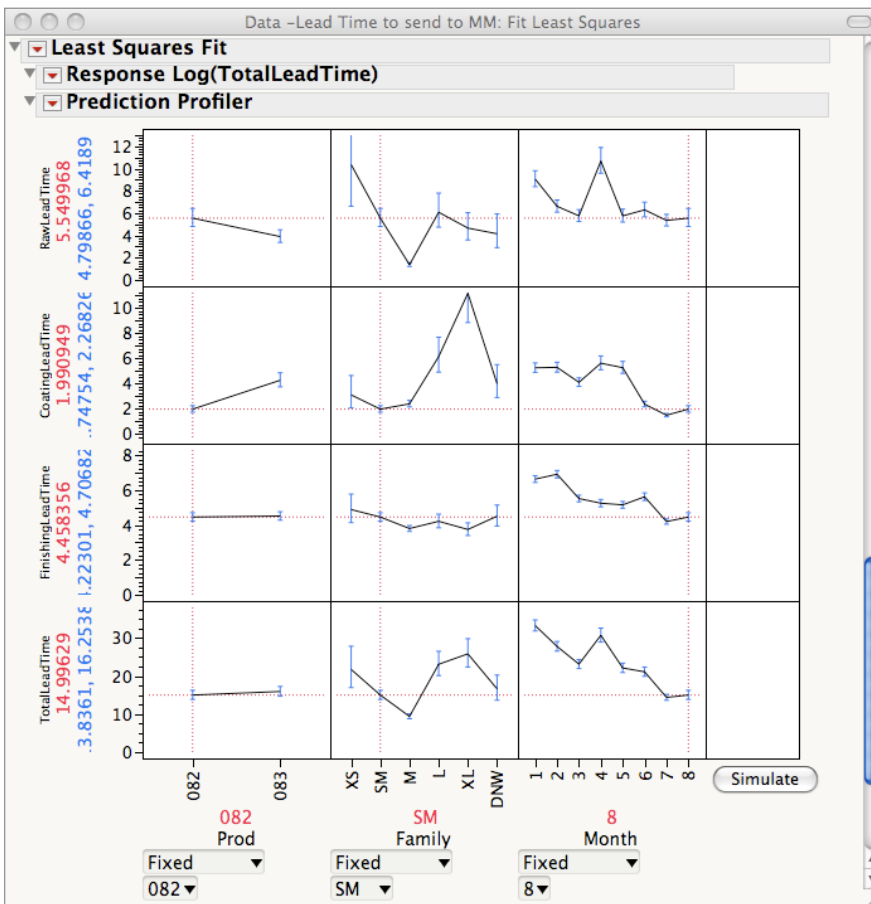
and immediately people go in and start identifying the problem and sorting it out.

“That’s the sort of thing that is readily apparent when I use JMP. Things like that just pop out,” he says.

Peter says his staff has determined that there are significant differences among products in the time it takes to move through the plant and that he and his team are now addressing those discrepancies where possible.



The reduction in lead time over the eight-month period for different product families was readily apparent using JMP's interactive Graph Builder.



Kodak used the JMP Prediction Profiler to create what-if scenarios that confirm a statistically significant reduction in cycle time by month for different product and family combinations.

'The tool'

Peter also makes good use of the JMP Graph Builder – which allows him to detect trends and uncover discrepancies – and he often presents his findings to management and his team using the full range of JMP graphs and tables.

But, essentially, the JMP Distribution platform is “the tool.”

“When you’re looking at a lot of data,” he says, “it’s a very easy tool that allows you to scan through a heck of a lot very quickly. But then there are so many other tools with JMP, in terms of design of experiments and modeling that you can bend your head around. But the Distribution platform is where it all starts. It delivers most of what I want before I even start digging into it.”

Going forward, Peter expects to more fully utilize JMP’s analytical powers and use modeling to identify key areas in which to focus for further Lean improvements.

He says that since implementing Lean practices, the Leeds plant has reduced its non-value-added time by about half. JMP is helping drive that success and is very clearly presenting the data to back it up.

“Because we’re doing Lean work all the time, it’s very easy to say, ‘Well, I know it’s a good thing to do.’ But it’s certainly useful to have plenty of data to support the fact that you’re actually delivering and improving performance,” Peter says.



SAS Institute Inc. World Headquarters +1 919 677 8000

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