Improved Data Gathering Improves Profits

"Do We Really Know What We're Doing"

A year and a half ago, when the information systems arm of Group Dekko developed a strategic plan for gathering information about efficiencies, uptime and downtime in their manufacturing companies, their purpose was to create a more accurate database not only for costing, but also for scheduling.

Group Dekko is a rapidly expanding group of privately held, independent and vertically integrated manufacturing corporations. The whole company has approximately fifteen hundred employees in three divisions spread over twenty-two locations. Their diverse products and services include wire harnesses, insert and injection molding, assemblies, roll forming, powder coating, turret punching, metal stamping and more.

Their strategy was to first test an information gathering system in one of their companies. Then, with the knowledge and experience gained there, they could apply the system to their other manufacturing arms.

What They Wanted To Know

Group Dekko's Information Systems division wanted a networked system that would connect to the stamping division's existing press monitoring system and collect error codes and other pertinent information about a job, such as parts produced. They looked for an interface that was developed to gather this information. In addition, they wanted the operator to be able to manually enter error codes if they could not be captured automatically from their press monitoring system. Along with the error codes and counts, the system would need to keep track of uptime and downtime, production time, efficiencies, etc. The monitor would also have to display what went wrong, when, how, where and store the data for later downloading and analysis.

Choosing A Monitor

The criteria for choosing a networked monitoring system helped determine which unit would fit into Group Dekko's strategy. First it must have a simple operator interface with an intuitive menu structure that would ensure error-free usage. The information it collected had to include machine OEE (Overall Equipment Effectiveness) or efficiency, as well as production counts. Of primary importance would be the acceptance of operator feedback on the causes of downtime.

Comparing Systems

There are a few monitors on the market that meet these criteria, but there are big differences in cost and ease of use. For instance, a system from Allen Bradley is around twenty two thousand dollars per station - about seven hundred percent more than another system, the IMPAX® TSS-6 system. Also, some systems require operator use of a mouse and keyboard whereas others have a touch screen.

The Allen Bradley and the IMPAX® TSS-6 reporting systems are very similar - they automatically run during uptime and when the system senses downtime, the operator enters in a code which states the reason the machine is down. However, on the IMPAX® TSS-6 there can be up to sixty-four error codes that the operator can enter. Then the machine sets up operation again. Those error codes report back to the network and go into the database.

There are major differences in reporting software. While some systems, such as Allen Bradley's, use proprietary software, the IMPAX® TSS-6 interface for pulling up reports and viewing information is Microsoft Excel. It is extremely easy to use and many press operators and people in manufacturing are very familiar with Excel.

Ease Of Use

Group Dekko's operators didn't take long to get used to using the new system. Information Systems engineers spent an hour or two with each group of operators - showing them how to use it. Chris Edwards, Vice President of Information Systems, was pleased with the monitors' touch screens, "The operators don't have to use a mouse and a keyboard. The learning curve is very quick. Within a week, they were up to full speed. We have it on all our shifts."

IMPAX TSS Monitor

Up And Running

IMPAX® TSS-6 is easy to install. Group Dekko purchased a PC server that could run the server-based software. They set the server up and ran the cable to the IMPAX® TSS-6 to connect it into the network. Then they were plugged directly into the PLC. Edwards said, "The Bruderer, being a newer machine, had all the electronics in it. When we went to some of the older machines that didn't have such a sophisticated PLC, we had to put sensors on the machines and hook up to them. We did all that with our in-house maintenance folks. Then, Process Technologies Group just came down for a day to install the IMPAX® TSS-6s, making sure they were going to work."

With only two connections, the IMPAX® TSS-6 system is very simple to hook-up. One is an end of cycle connection and one is an interrupt that will not allow the machine to start until the operator enters error codes.

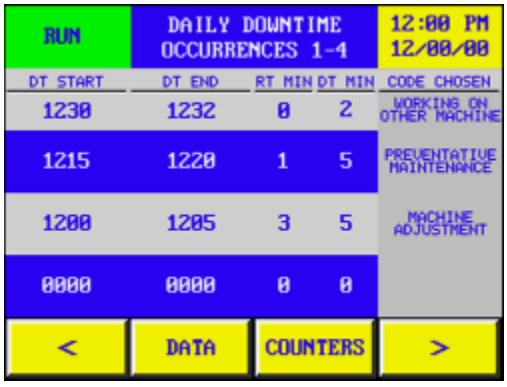
"Better Information Than You Would Have Imagined"

Group Dekko decided they needed to have six to twelve months of real world data to take into account operating peaks and valleys before any changes were made based on the accumulated information.

Edwards says, "Now, we can do more accurate costing. This has been a huge benefit. We have identified where we have had our products over-costed - where we weren't taking as much as we thought. We've had it go the other way, too. That's why these kind of tools are so interesting. Many times they help you identify things that you never would have imagined."

Annoyance Causes 30% Down-time

At Group Dekko, operators admitted there were some occasional problems at a packaging station, but they were used to them. The IMPAX TSS-6 showed the problems were causing thirty percent of the down-time on that machine. The operators had become desensitized. The collected data was a call to action.



IMPAX TSS System Machine Monitor Screen

Proving ROI

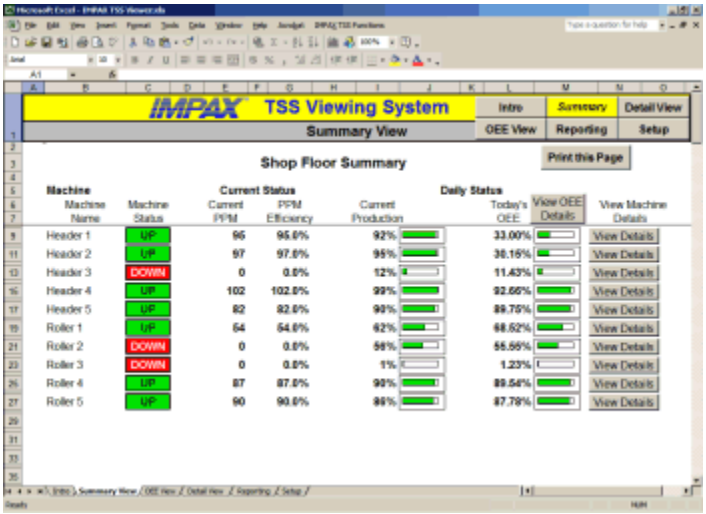
Too often, determining the best way to improve manufacturing is haphazard at best. Whether it is upgrading a machine, automating a process or improving the workforce, the presumptive need for change is often greatly dependent on the ‘good judgement' of managers. What monitoring of the manufacturing process brings to the table is the ability to justify an improvement. With real world numbers it is possible to demonstrate, for example, how much down-time will be reduced, which, in turn, equates to a corresponding sum of money and ensures there will be enough payback.

Increased Business, Increased Profitability

The bottom line is looking good. Edwards says, "We're getting additional business because of this and we're getting more competitive on the pricing side. It really helps."

Group Dekko also saw its profits increase. They attributed a good part of the increase to getting better information, allowing them to quote more accurately in a highly cost competitive market.

It also helps them to identify products that they should not be running. They realized they just aren't going to make money on some products, either because of the type of machines they have or the type of product. It helped them identify those products on which they are going to either have to raise the price or are better off without the business.



IMPAX TSS System Excel Networking Software

Applying Lessons Learned In Stamping To Injection Molding

It looks like there are going to be more monitors in the future of Group Dekko. According to Chris Edwards, "Dekko Stamping is our only stamping operation. But we do a lot of injection molding. Our next step will be to do the same sort of

monitoring on our molding machines. We want to let this run for a year or year and a half to see how well it works. Then, look at the information we get off of it and probably the latter part of this year or first part of next year we'll try to cost justify this same sort of investment in our molding division."

With the advent of the IMPAX® TSS-6 Efficiency Monitor, its developers have comprehensively filled industry's need for real-time problem detection and trend analysis. Companies can eliminate job overruns, lost production time, and feed/speed problems. Trends such as products that tend to not be profitable, inefficient machine use, and workers who need to improve productivity can be identified. On the positive side, the monitors enable accurate maintenance scheduling, motivate operators and allow operators to start preparing the next job at an exact point in the current job's run. Plus, workers don't waste their time reporting - the system does it.

A US/German Cooperative Venture

Process Technologies Group, Inc. (PTG) of Addison, Illinois, is a designer and manufacturer of process monitors, piezo-electric force sensors, and data collection software. Its patented IMPAX® monitors, along with other process control devices and data collection systems, hold a strong position within the metal forming and metal cutting industries, with over 6000 successful installations.

In addition to the new IMPAX® TSS-6 touch-screen downtime analyzer the IMPAX® 3500 process monitor can be used in many other industries with repeatable machine processes.

Working with Schwer+Kopka GmbH of Germany, Process Technologies Group, Inc. produces a family of products that use a proprietary high-speed digital signal processor-based system, and provide revolutionary software features. These monitors are sold in the Americas under the IMPAX®-SK Technologies label, and in Europe under the Schwer+Kopka label.

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