Going Lean? Don't Forget IT

Diskeeper Corporation

Lean manufacturing efforts can be seriously hampered by one seemingly minor detail

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In today’s manufacturing universe, cost-effectiveness is a constant battle. Every element from raw goods to worker efficiency, eliminating waste of time and material, streamlining processes, and even evaluating and improving supervisory expertise, is undergoing microscopic and expert examination so that companies can remain functional and profitable. The alternatives can be grim, and can include losing partial or complete business to foreign suppliers. One component which can easily be overlooked is computer efficiency.

The Importance of Lean

Lean manufacturing basically means paring down every detail: less human effort,

less manufacturing space, less investment in tools, and less engineering time to develop a new product. Such steps have become vital. In promoting its Manufacturing in America campaign, the U.S. Department of Commerce points out, “The competitive pressure on U.S. manufacturers has forced them to cut costs, to adopt lean manufacturing techniques, and to implement quality assurance programs that guarantee zero defects in production. Innovation in products, processes, and services has become a key determinant for success.”

Jim Gilbert, a lean manufacturing consultant for California Manufacturing Technology Consulting (www.cmtc.com), describes the importance of lean manufacturing in today’s business environment. “The goal of a business is to make money,” he says. “Lean manufacturing is an enabler. The goal of lean manufacturing is to produce to demand. By continuing to focus on producing to demand, a number of wastes will become evident. Through the reduction of these wastes, we become more efficient. At the end of the day, it enables us to allocate our resources more effectively, and it will symptomatically create more profits for the organization.”

Just how effective can lean manufacturing be? Gilbert cites an example: “With one company I and another CMTC consultant directly worked with, a group of 12 people who were producing 735 units in an 8-hour shift,” he relates. “When we finished, a group of five people were producing 2,125 units per shift, and bragging about how much easier their jobs were. Not only were they getting more units, but their cost-per-unit was reduced, so the profit per part went up and the quantity of parts went up.”

The great part is they were able to provide this efficiency increase without cutting jobs. “Additionally we were able to shrink the footprint to about 50 percent of what the shop configuration was, and this allowed them to bring a new product line in. The 7 people they didn’t need for the first item were now able to work on a new product, and created a situation where the only out-of-pocket cost for the new product was the incremental cost of materials.”

“If you do lean right, as you identify these wastes and eliminate them, you create capacity,” Gilbert concludes. “The waste elimination in and of itself is a small part, maybe a negligible part, but it does allow the organization to sell that capacity and gain those kinds of economies. It’s really a way of growing your business.”

Computer Efficiency

Baldwin Filters, a manufacturer of air, oil, fuel and hydraulic filters primarily for industrial vehicles, is currently ramping up an OEE (Overall Equipment Effectiveness) program, and knows just how important computer efficiency is in maintaining cost-effective operations.

“Computing systems are very instrumental in the manufacturing process,” says Eric Carel, network systems supervisor for Baldwin Filters. “We support a large amount of equipment on the shop floor directly in our network environment. This includes a lot of automated production control equipment, inspection equipment, and

supporting systems such as wireless RF systems which support our distribution and receiving operations."

All of Baldwin's 52 server computers and approximately 400 workstation computers are based in Microsoft's Windows Server 2003 operating system. They are also running a database system based in SQL Server 2005 and SQL Reports.

Because every second of production counts, especially with such a high number of computer operations, file fragmentation can be a serious barrier to increasing efficiency. File fragmentation—the splitting of files into tens, hundreds, or even thousands of fragments—is a fact of life on today's computer hard drives, developed to fully utilize disk space. The downside is that accessing a file in multiple fragments adds considerable time to both employee work and automated processes.

Targeting Fragmentation

Like many manufacturers, Baldwin Filters has long-since discovered that fragmentation needs to be countered. And like many, they originally installed a scheduled defragmentation system site-wide which would allow them to schedule defragmentation when there were the least number of users on their systems. This took care of the fragmentation performance problem—but at somewhat of a price. "Scheduled defragmentation was a headache to manage. On-demand defragmentation interrupted users until completed, and those left with fragmented hard drives had to deal with sub-par system performance," Carel says.

This year, however, Carel and his team discovered new defragmentation technology that is able to defragment without scheduling, in real time, invisibly, in the background, with no affect on computer users. This new technology, called InvisiTasking™, was developed by Diskeeper Corporation and uses only idle system resources to run, which means defragmentation is occurring on the fly when system usage is low, and performance remains consistent.

"Given the sheer number of computers and operations that must be managed with limited staff, having an automated low-maintenance environment is key," he says. Carel reports that now there is no need for the "micro-managing" of fragmented systems, and they now require no maintenance.

Another feature Carel finds very useful is called I-FAAST (Intelligent File Access Acceleration Sequencing Technology). This feature boosts access to files that are frequently accessed, and Carel and his staff utilize it to increase the performance of their disk-to-disk backup operations.

Lean and efficient manufacturing methods are vital in today's cutthroat market. When implementing them, however, don't overlook the efficiency of your computers and the primary barrier, file fragmentation.

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