

## **A Picture Perfect MRP Implementation Helps Traffic Enforcement Camera Maker to Profitability**

Some scofflaw motorists caught on camera have a small, inexpensive Material Requirement Planning (MRP) system to thank for their unfortunate predicament.

Transport Data Systems, a six-person, \$2 million company, purchased the 500-part version of E-Z-MRP in 2008, and the manufacturing system has been a consistent and valuable resource for the company ever since.

TDS manufactures license plate recognition and capture systems (cameras) for toll roads, parking lot security and traffic violation processing and enforcement.

Founded in 1995 and located in San Diego, TDS's original product was a vehicle classifier for toll road applications, which used a patented combination of Doppler radar and a light curtain to automatically classify vehicles as cars, trucks or buses.

“The thing that made ours unique is the fact that we used the light curtain with the Doppler radar, which gave us a velocity,” said TDS Vice President of Operations Tony Hasselbring. “So we could take a slice of the vehicle as it passed through the lane and create a whole profile looking like the silhouette of the vehicle. And from that silhouette ... the camera system's software could differentiate between different types of vehicles that had the same number of axles but may have a different fare charge.

“From there, we moved into the field that we've now moved most of our work to, which is violation enforcement. We install cameras that capture either fronts or rears, depending on the requirement, and the license plates, and from there we have an application that extracts the license plate and reads it, and gives output as to what the license plate number is. We have been doing that now probably for at least the last 10 years.”

Back when TDS had four employees, a job that required them to build 166 cameras drove the company to look for an MRP system.

“The biggest problem was we just never knew how much stock we had of anything,” Hasselbring said. “There was an inventory control issue.”

Before TDS acquired E-Z-MRP, workers would make a spreadsheet for each job that included every required part and cost. But there were always some parts for which the company simply guessed or approximated costs. For example, “once we get past the big pieces, it costs a hundred bucks more for the rest of this stuff,” Hasselbring said.

“But where it always fell through the cracks was that hundred bucks we just threw in for other parts: bolts, washers—all the stuff we just pull out of a drawer in the back,” Hasselbring

said. “And we didn’t have any idea [if] we had it on hand till we got ready to build them and they weren’t there.”

By freeing up Hasselbring’s time from administrative tasks, E-Z-MRP was able to solve another issue: It allowed him to focus on product improvements, strategic projects and other aspects of his work that only he was able to carry out.

“In the past, I was responsible for purchasing, manufacturing and any sub-contract work we had done,” Hasselbring said. [E-Z-MRP] “...allowed me to push that duty off onto somebody who didn’t necessarily understand how the product went together or what all the pieces were, but was capable of placing an order for all the parts that were required.”

E-Z-MRP also allowed TDS to determine a selling price quickly, rather than recalculating from each new spreadsheet how much it would cost to build the product.

“It saves the time of creating the spreadsheet which in turn saves money, because you’re paying for that time, but the other part of it was that because you have a defined bill of materials with an associated price, it eliminated the risk—which can cost you money—of forgetting to put a component in,” Hasselbring said. “That’s got a significant cost.”

E-Z-MRP has only two users at TDS: Hasselbring, who uses it to create new Bills of Materials, and the finance manager, who does all of the purchasing and uses E-Z-MRP’s Supply and Demand Side reporting and the Purchase Order module.

Then, when TDS is ready to actually build a product, the finance manager uses E-Z-MRP’s to print out kit lists, which correspond to shelves with numbered boxes, so he knows exactly how many and which parts and tools go into a package.

During manufacturing, TDS typically doesn’t run into quantity issues with the big pieces, but “all the small pieces are the parts that tend to fall through the cracks during manufacturing,” Hasselbring said.

“If I lose a \$2,000 camera—that I’m going to be searching for,” Hasselbring said. “But typically with two-cent washers and three-cent bolts, you’re not really paying as much attention to how much you have of those things. And a great part of E-Z-MRP is that it’s allowed us to do a little better tracking of small piece parts.”

After purchasing E-Z-MRP, TDS took the existing E-Z-MRP manual, which Hasselbring likened to a “tutorial,” and created its own policies and procedures manual.

“When you place an order, this is what you’re going to do; when it comes in, this is what you’re going to do—that set up a standard operating platform, so that the MRP system was consistently being used, no matter who used the MRP system,” Hasselbring said.

The cabling, the lens, the power supply and the brackets are done by third parties, but final assembly happens at TDS. At every stage in the production process, “the biggest thing is knowing what we have on hand,” Hasselbring said.

“We’re a small company. We really didn’t have a budget to spend \$25,000 to \$50,000 on an MRP package that would have had a lot of capability, probably a lot more capability than we needed,” Hasselbring said. “We really only build in-house maybe three different items. The initial version [of E-Z-MRP], which had 500 part numbers in it, was more than enough parts for the type of thing we build.”

The cameras at TDS have evolved over the years. Starting with a much larger camera, TDS has progressed to a firewire camera, and is in the process of switching over to a faster camera with better resolution. But TDS’s core business remains in license plate capture and toll road and homeland security applications.

“If anything, [E-Z-MRP] has allowed me to not be involved in every step of the way of every product that goes out,” Hasselbring said. “Initially, when we were just three people, on any piece of hardware we shipped, I touched every piece, I made every cable, I had to make sure all the parts were here. As we’ve added more employees, it has allowed us to delegate some of that responsibility onto someone else, freeing me up for time to do other things.”

*E-Z-MRP, manufactured by San Diego-based Beach Access Software, is available in two versions: a \$2,995 version with a capacity of 500 part numbers, and a \$9,800 version with unlimited part numbers. Phone-in technical support, as well as updates to the software and manual, is free for the first year.*