Staving Off Liability and Creating Opportunity through Product Traceability

By Dan Sussman

There's a joke from the late 1950s in which a newspaper reporter is invited to join a rocket scientist to witness the test of a missile that the scientist helped design. As the countdown clock reached zero, a plume of smoke rose from the launch pad and the missile lifted skyward, slowly at first, and then faster. Suddenly, the reporter realized that, after reaching a designated altitude, the missile would arc downward and crash back to Earth.

"Oh my gosh! Is that thing going to come down in a populated area?" he asked.

"I don't know," replied the scientist. "That's not my department."

Undoubtedly some manufacturers have days in which they could emulate that scientist by simply selling, shipping and then forgetting about their products. If the product breaks or causes injuries, it would be someone else's problem. But all one has to do is recall Firestone's travails in the wake of its widespread tire failures or the inquiries about aircraft components following a crash to know that a manufacturer almost always bears at least some responsibility for his products' performance.

While attempting to prepare its customers for the Y2K rollover several years ago, one automation vendor with which I worked knew that numerous "legacy systems" it had manufactured were still being used in critical operations at power plants, oil refineries and other major industrial facilities around the world. Unfortunately, product lifecycle management was practically unheard of when these systems were created, so the vendor didn't know precisely where they were, whether they had been sold to new owners or how to contact the owners about software fixes. Fortunately, the Y2K rollover was relatively uneventful, but if the vendor's systems had failed on January 1, 2000, the users undoubtedly would have been in touch, and it's doubtful the conversations would have been cordial.

These examples should make it clear that we're in an age of unprecedented accountability, and manufacturers must be able to trace the lifecycles of their products in detail to survive in the face of litigation, government regulation and public relations damage. The complexity of many of these products and globalization has made traceability particularly daunting. Many products comprise components manufactured in plants around the world. One day, component XYZ may originate in a plant in Singapore; the next day, the same component might be delivered from another supplier in Taiwan.

When a product fails, resulting in death, injury or financial loss, customer confidence, consumer protection and the very existence of a company and its products are at risk if the problem can't be traced to its source quickly. Conversely, if the manufacturer can speedily resolve the problem, he is more likely to quickly regain the confidence of customers and the public at large.

Unless companies are able to capture their products' "biographies" (e.g.. when an item was made, where it was made, who bought it and a history of its maintenance) they are at risk. To date, however, traceability solutions have been less-than-satisfactory. Most companies still rely on paper trails or computer files storied in various locations around the world. Product marking technologies have ranged from a simple product ID, to bar codes to data matrices.

Product traceability is not only a matter of reducing risk. Knowing a product's detailed history also creates opportunities for manufacturers to do better business by establishing a collaborative relationship with customers. For example, if a manufacturer knows that a particular component in a small group of car engines is about to fail, and he knows who owns the cars they are installed in, he can contact the owners to make the necessary replacements and win their goodwill in the process. Or perhaps the manufacturer of a particular model of tire wants to market a new kind of stud for use in snow and ice. Through product traceability solutions, he'd be able to zero in on potential customers wishing to upgrade their tires. In addition, if a manufacturer is aware of when a particular product is near the end of its natural life, he can contact the owner and reduce the possibility that the owner will look to one of the manufacturer's competitors for a replacement.

Clearly, there is a need for traceability solutions that:

- Are product-centric®. In other words the history is tied to the product itself, regardless of who owns the product at a particular time. (e.g., even though an airplane, a car or a computer is sold, the manufacturer should be able to continue tracking its history.)
- Allow for the collection of detailed data in a standard, machine-readable format
- Are accessible across a wide variety of computing platforms using a standard, readily available computer interface.
- Provide interoperability among authorized users, including (but not necessarily limited to) the manufacturer, the maker of product components, sales and service representatives and the end-user.

Where an apparent need exists, forward-thinking individuals and companies will emerge to fill it. Such is the case with Entrada Software of Scottsdale, AZ, which has developed a Traceability Management System that fills all of the above requirements.

Entrada's system, **Kinnosa**, uses the speed and infinite capacity of the Internet to enable users to quickly trace the complete history of any product, component or part. With **Kinnosa**, manufacturers, end-users, component suppliers, dealers and any other authorized individuals can locate the source, and display the current location of a single product, component or part. in a matter of days, sometimes even hours, and perhaps minutes. All they need is a standard web browser to call up detailed product histories.

Traceability begins by the manufacturer identifying a product, component, or part with a unique optical identification code, based on the automated ID standards being developed at the Massachusetts Institute of Technology. The identifier can be applied with all major existing part-marking methods, including Data Matrix, Dot-Peening and Chemical Etching. Through an exclusive partnership with Infoglyph, **Kinnosa** also now offers a new and unique part marking system that imprints, by laser, an indelible mark that, in a quarter-inch square, contains six hundred times more information than a conventional bar code.

Product data is automatically entered into a product database, developed using open systems standards and is available through the web-based **Kinnosa** Portal. To enable companies to make these databases easily available to selected users **Kinnosa** includes a naming and directory function, similar to the Worldwide Web's Domain Name Service. In addition, the system provides for integration of **Kinnosa**-based data into plant and business automation systems, such

as Customer Relationship Management and Enterprise Resource Planning systems so users can maximize the data's business value.

Kinnosa is a proven product. Terry Simpson, its creator and a co-founder of Entrada, conceptualized the system in 1991 and employed it at Motorola to track more than 82,000 parts used in each of a number of satellites.

Simpson, with co-founders Bruce Williams and Terry Gustafson, formed Entrada Software in 1998 to bring **Kinnosa** to market. Williams serves as Entrada's CEO, Simpson is CTO and Gustafson serves as VP of Finance and Accounting.

Just as **Kinnosa** already has a proven track record, so does Entrada Software. To establish credentials for performance and accountability Entrada purchased the software code and customer lists of bankrupt Motiva, a provider of electronic document management software. In only 12 months, the software -- which Entrada re-labeled **eChange --** has produced more than 100 times its cost in revenues, and now boasts more than 80 satisfied customers worldwide including Ford Motor Company, Lockheed Martin, Pacific Gas & Electric, Georgia Pacific, Potomac Electric Power Company, Northrop, Bombadier, San Diego County and Borg Warner.

Recognizing the value of outside expertise and experience, Williams has recruited an impressive Board of Advisers including:

- Dr. Mikel Harry, principal inventor of the Six Sigma Business Strategy and co-founder of The Six Sigma Academy.
- Robert Johnson, President, Honeywell Aerospace, and COO Honeywell, Inc.
- Charles White, Vice President, Director of Strategic Management, Semiconductor Products Market, Motorola (Retired).
- Dr. Phillip M. Wolfe, Professor Industrial Engineering, Arizona State University.

Though still a relatively young company, Entrada Software is attracting significant attention in the marketplace from major companies in the aerospace and tire industries and among potential investors. What was recently a visionary opportunity now represents an emerging solution at the center of a heightened public demand for accountability and regulatory compliance.

About Dan Sussman

Dan Sussman is a veteran marketing consultant in high technology and industrial automation. After a long career as a newspaper writer and editor, he spent two years as a public relations consultant to IBM and six years as a marketing communications manager with Honeywell's Industrial Automation Division. For the past six years, he has served as an independent communications consultant to numerous providers of industrial automation hardware, software and services, including Emerson Process Management; Parametric Technologies Corp., Invensys, Intellution and MycroSENSOR Technologies. In addition, he is a contributing editor to MSI magazine, a leading publication on the strategic use of industrial and business automation systems in manufacturing.

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