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Implementing standards: Think global, act local?

It's no secret that RFID is having trouble getting the tangible design-in success that it was supposed to achieve. Despite enormous effort and pressure from companies such as Wal-Mart, the practical challenges, costs, and unforeseen problems—especially when they combine hard-to-quantify benefits with excessively optimistic projections from pundits who should know better—are making large-scale RFID uptake a real struggle.

A recent article in *The Wall Street Journal* gave a different perspective on RFID possibilities (**Reference 1**). The article details how a 94-member cooperative of makers of Parmesan cheese in northern Italy successfully introduced RFID chips into their operation, which produces and handles several hundred thousand cheese wheels each year. Before you think this situation is trivial, look at the facts. The 30-kg (approximately 66-lb), tire-sized cheese wheels go through repeated aging cycles in climate-controlled warehouses for six to 36 months, and each wheel is repeatedly graded during the process, by color, tap-sounding timbre, and even X-rays. Cheese-wheel prices range from less than $200 for an average one to more than $350 for a top-grade one. Making Parmesan is not a casual hobby; despite first appearances, it is a serious business.

The cheese makers in the area agreed to try embedding RFID chips into the cheese crust, because the previous method of branding the crust had shortcomings. Among them, the branded number gradually faded as the cheese was handled, and the branding did nothing to prevent the serious problem of counterfeit cheese wheels entering the supply chain. With RFID, the cheese makers can uniquely track and update the status of each cheese wheel and assure buyers of the cheese's authenticity.

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Admittedly, this application is specialized and unusual. But, in some ways, it represents a well-defined, tightly focused set of players with limited objectives. They are not trying to solve all of the problems of supply chains; they are just looking for an approach that works for them. The article states that the cooperative had invested less than $100,000 in the pilot program to test the system and about the same amount to fully implement it, plus 60 cents per RFID tag. With annual revenue of more than $380 million and RFID's reduction of tracking costs by about half, the cost-to-benefit ratio is favorable.

This application highlights the severely contradictory emotions our industry has about standards. On one side, they define a framework for functions and interoperability that some applications must have to succeed; a cell phone or DVD that doesn't meet a standard is useless. On the other side, standards can be excessively constraining or overwhelming; sometimes, they require substantial investment for completion of major infrastructure elements to succeed, all following those innumerable standards-committee meetings and votes.

The challenge for design engineers and their companies is to know their technologies and markets and decide how critical large-scale standards are to success. Is it better to use basic, available technology to solve a problem, albeit with an approach that may not have broader applicability? Or, should you wait for the broader standards to firm up? As usual, no one knows, and either way is a gamble. But matching the technical approach with the scope and timing of the problem is almost always a good idea. EDN

REFERENCE

1 Kahn, Gabriel, "Who Made My Cheese? Tags Track Parmesan's Age, Origin," *The Wall Street Journal*, July 7, 2005, pg B1.

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