

A survey by ARC Advisory Group indicates that performance and price issues are keeping many manufacturing companies from launching full implementations.

By Claire Swedberg

Feb. 2, 2007—Although a number of companies in the manufacturing sector have carried out RFID pilots, many have chosen not to launch full implementations in light of other technology options and the perceived shortcomings of RFID, according to Chantal Polsonetti, vice president at [ARC Advisory Group](#), a research and advisory firm for manufacturing companies and solution providers.

The proportion of pilots that have turned into implementation isn't that big, Polsonetti says. "There is a lot of pilot activity, but the question is how much will come to fruition."



Chantal Polsonetti

Citing surveys carried out by her company, Polsonetti sees two reasons for that disparity: performance and price. Most notable, she explains, are the physical barriers facing two manufacturing industries—automotive and semiconductors—that commonly use RFID. "These are highly metallic environments," she says, referring to the RF signal interference often found in such milieus. "Leading manufacturers of [typically passive] RFID for manufacturing applications, such as WIP [work-in-process] or error proofing, pride themselves on providing solutions that operate in a manufacturing environment," she says.

Despite such claims, numerous manufacturing companies still see shortcomings. The manufacturing environment can be RFID-unfriendly due to the presence of static discharge, humidity and temperature extremes, she says. "Ability to operate in an industrial environment was a leading functional requirement reported by our end-user survey group."

Nonetheless, Polsonetti believes semiconductors and automotive industries will continue to lead RFID adoption. What's more, she expects to see additional growth in the aerospace and defense sector as well.

The high cost for solutions, both active and passive, still threatens to keep deployments mired in the pilot stage. "These aren't 5-cent label applications," she says. In fact, she notes, they can be considerably more expensive than bar coding—which, for manufacturing companies, is still a familiar and popular choice for such auto-ID applications as tracking WIP, parts, materials and finished goods.

If manufacturers are willing to spend additional money, they might be more satisfied with auto-ID systems based on such technologies as Wi-Fi, RuBee (IEEE 1901), ultra wideband (UWB) and WiMAX. RuBee can be used for tagging finished goods at the item level. Its performance in harsh environments, including with foil-wrapped products, and its reduced reliance on a radio signal make it a viable option

for manufacturing applications, she says. Wi-Fi can be utilized for location tracking, but systems based on UWB or WiMAX offer greater location resolution, though at a higher infrastructure cost.

Manufacturers have taken an interest in RFID for years with regard to tracking assets and parts, as well as WIP, in part because of the supply chain RFID use resulting from retailer mandates. Although manufacturers have undertaken numerous RFID pilots, the corresponding number of full deployments has been comparatively low. However, Polsonetti says, that could change as the result of increased use of technology based on standards. These include the [EPCglobal](#) standards, which may encompass active-tag standards in the near future (the current EPC standards are for passive tags), as well as ISO 15693 for passive HF tags and ISO 24730 for real-time location systems using active RFID tags. Polsonetti says she cannot predict how quickly this change might happen.

According to Polsonetti, the strongest area of growth is in existing applications, such as WIP tracking, though she expects further growth in asset tracking as well. Manufacturers currently utilizing RFID are doing so to make process improvements by matching the correct part or tool to the product they create. But such companies could also use other technologies, such as Wi-Fi, to locate parts. Moreover, most Wi-Fi equipment providers are making location-tracking a feature of their solutions, and the growth in Wi-Fi solutions has had an impact on RFID's rate of deployment.

In a recently published report, entitled "RFID in Manufacturing Applications Worldwide Outlook," Polsonetti writes that manufacturing companies' use of passive and active RFID for in-plant applications, such as WIP, parts, materials or asset tracking, will grow globally at an annual growth rate of 8.9 percent over the next five years. In 2006, manufacturers spent a total of \$208.8 million. That amount, she predicts, will rise to \$319.5 million by 2011. Both figures exclude pallet-, case- and item-level tagging for supply chain mandates.

"This study was done at the impetus of our manufacturing clients," says Polsonetti, and offers a picture of RFID technology competing with Wi-Fi for the market share in the manufacturing world. The full report is available to download for a fee at <http://www.arcweb.com/C3/Research/Lists/StudyList/DispForm.aspx>