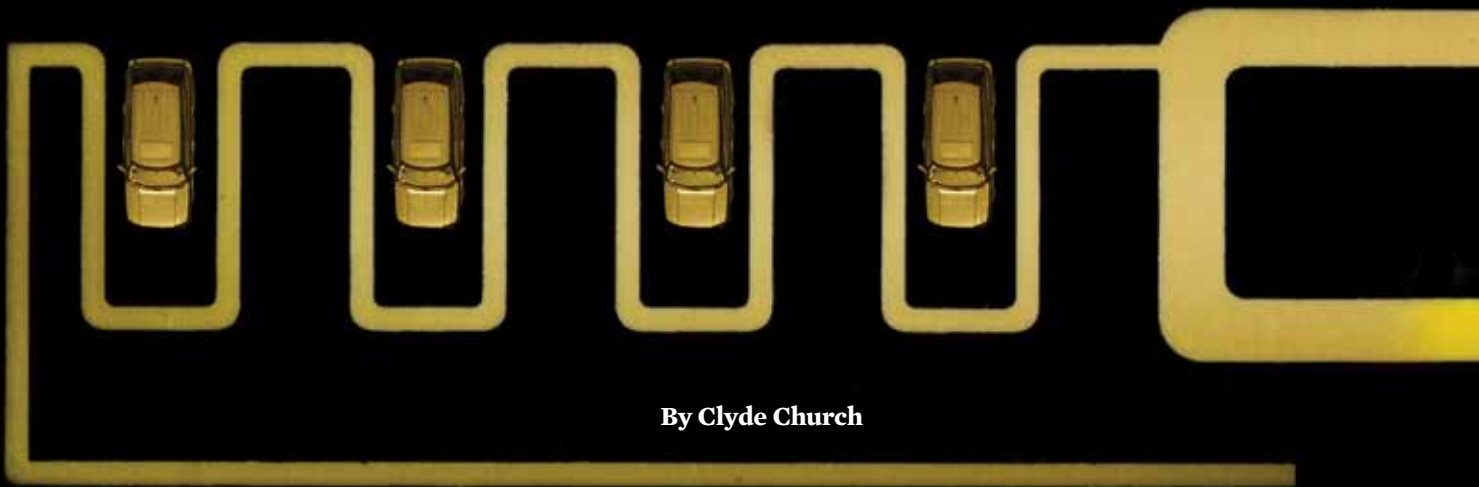


ESTABLISHING A N



By Clyde Church

We are usually skeptical when a new technology arrives in our industry. We wait to see if it will live up to its developers' claims and who adopts it first, and then listen for unanticipated problems and risks in deployment. When we select new technologies, our reputations and profits are on the line. With these risks in mind, what characteristics do we look for to determine if radio frequency identification (RFID) technology is real, proven, and mature? Can we improve the bottom line if we invest now? And if it is ready, how much improvement should we see when we deploy it?

Let's compare RFID to the evolution of other technologies. Historically, new technologies have evolved in an orderly manner, one step at a time (think electricity before the light bulb, the wheel before the automobile). Sometimes the steps are large and most often, there are thousands of smaller intermediate steps that take us

from one major invention to another. When an invention is very good and there is an economic motivation for broad use, the market requires competing technologies to create standards to increase interoperability and minimize user risk. We set association standards, national standards, and, very frequently, international

NEW TECHNOLOGY



Is passive UHF RFID ready for prime-time parking applications?

standards for the new development. We see this in all fields of human endeavor such as the brightness of brake lights on vehicles or the height of headlights measured from the ground.

RFID Evolution

RFID technology has been on this path of evolution and standardization for quite some time. During the past 15 years, passive ultra high frequency (UHF = 915 MHz) RFID technology has grown from a scientific curiosity to secure robust proprietary systems. Because of slower than expected adoption of proprietary systems, the companies with competing technologies agreed to consolidate them from multiple protocols into one open international standard that has been adopted around the world.

RFID technology has continued to improve because of an agreement between the major industry developers and manufacturers that was drafted in 2005, when the air-interface protocol was included as an amendment

to the ISO 18000-6C standard; it was fully adopted the following year. This agreement and prior adoption of the air interface protocol by the Electronic Protocol Global Organization finally buried the technological hatchet between competitors and allowed the RFID industry to provide tags, readers, and antennae that would be interoperable between suppliers.

Since then, Class 1 Generation 2 (C1G2), electronic product code (EPC) 18000-6c compliant tags and readers have been adopted and specified by Wal-Mart and other retailers, the U.S. Department of Defense, and many inventory and asset tracking companies. The state of Georgia uses them for high-occupancy toll (HOT) lane applications at speeds of more than 60 miles per hour. In addition, several South American countries have adopted them for managing gasoline distribution systems, vehicle registration, and grain transportation. Hoboken, N.J., and other cities in the U.S. have adopted the 18000-6C-based technologies for parking because

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of the costs, security, and interoperability between suppliers. Other business and standards organizations have adopted the C1G2 - ISO-180006C standard to ensure a long life for the standard and protect their investments in software, tags, and hardware for many years to come.

Consider the scale of RFID investment in both increasing production capacity and adding new features to standard tags to meet new needs that were unanticipated when the standards were established in 2006. Because of the international standards and the broad worldwide adoption of this technology, universities, semiconductor companies, inlay manufacturers, label manufacturers, and software developers have continued to pour research dollars into the open architecture C1G2 (18000-6C) technology to add features that are consistent with the standards and meet the needs of new and demanding applications. An example of increased investment in RFID is the continual parade of new chips introduced by Alien Technology, Impinj, and NXP Semiconductor; each generation offers added features to the basic C1G2 ISO-18000-6C standard.

Implementation

RFID technology is really just another high-tech power tool and, like any new tool, incorporates new features that increase its power, versatility, and product lifespan. Remember that with each new technological tool comes a whole booklet of warnings and instructions on how to use it. RFID is no different. You need to carefully plan RFID implementations to fully use all of its features and help boost your bottom line. It's important to budget plenty of time to implement, research, and run pilot tests of readers, antennae, and software. Every dollar spent planning will avoid mistakes that can be far more costly than the expense of proper planning.

During this phase, be prepared to be flexible while testing and building the controls and reports to maximize data availability from the RFID system. Structure the software and reports to create new insights to your business and how it really works versus how you think it should or does work. The questions you ask and the information you compile will provide new opportunities for your operation. Here are some sample questions asked by operators who have already embraced RFID:

- How many weekday parking slots are open and what time of day do patrons exit the facility?
- Are people parking in your garage on an hourly basis, reducing potential long-term contract revenue and leaving parking slots open most of the day?
- Are economy parkers using premium slots?
- Can you sell premium event parking in the evenings and if so, when?



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Several new passive RFID installations have already demonstrated increased customer satisfaction and convenience by streamlining entry and exit throughput at the gate from an average of 250 cars per hour—with printers and scan on exit—to 1,200 cars per hour with RFID.

Throughput optimization and cost reduction are the key parameters to profitability for any organization collecting revenue from vehicles and drivers. PDQ Manufacturing found this out when they added RFID access control to their line of car wash equipment. PDQ was an early adopter along with Cruz Through Car Wash in Bakersfield, Calif. Both companies increased customer loyalty and reduced their numbers of cash register transactions with RFID-enabled contracts for service. Others have won business loyalty by providing express VIP lanes for RFID users only.

Expanding Business

There may be opportunities to collaborate with local restaurants and theaters to provide special event parking that uses an RFID system to keep things moving. You could use your monthly invoice to advertise local parking specials in the evenings and promote parking during off-hours as well. Sharing data can create value for others and create potential collaborative income.

Not only have RFID reader and tag technologies matured, but the knowledge and experience of systems integrators and consultants has also grown. They have deployed thousands of projects in diverse industries and applications. These system integrators and suppliers are willing to be your technical safety net, information source, and an extension of your organization on your RFID project.

RFID 18000-6C tags come in many different formats and materials just like the options available with a new car; some tags are made out of expensive hard plastic while others are preprinted and programmed thin film labels with security slits. Whatever type you select, run the numbers and consider the features, options, and the security level you really need and are willing to pay for.

C1G2 passive (18000-6C) open architecture RFID is ready for prime time parking and revenue management if you are ready to put in the necessary planning. As Barbara Chance, Ph.D., president and CEO of CHANCE Management Advisors, Inc. said, "If you think you are ready for new technology, think again." The technology is there, but it still needs to be applied properly. The time and resources you spend planning the details, testing systems, developing report outputs and conducting pilots, will pay off in improved visibility, profitability, and long-term success. **P**