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## Who Lost the RFID Industry?

On page 98 of Walter Isaacson's biography of Apple founder Steve Jobs, the author quotes Jobs as saying, "They just grabbed defeat from the greatest victory in the computer industry. Xerox could have owned the entire computer industry."

Jobs was referring to the fact that engineers and software

experts at Xerox's Palo Alto Research Center (Xerox PARC) had developed the first graphical user interface and mouse for manipulating data on a computer screen. Apple wound up being the first business to come to market with a computer utilizing the concepts developed by Xerox PARC, after Jobs visited the center and convinced Xerox to let him see how the system worked.



It got me thinking about the market for radio frequency identification technology, and the fact that none of the major information technology providers are investing in it. It's difficult to say that any particular company completely fumbled a golden opportunity to own the RFID market, but several firms could have—and probably still can—become what author Geoffrey Moore describes as the “gorilla” in a technology market.

IBM was the first to develop ultrahigh-frequency (UHF) RFID systems, which offered a longer read range than high-frequency (HF) solutions, but then sold its patents to Intermec in the mid-1990s. IBM also developed some middleware for linking RFID readers to back-end systems, and could have developed RFID applications and pretty much owned the market—but the company has not been active in the RFID world for the past few years, though it continues to work on projects when customers request that it do so. (IBM probably has the most to gain in this market, since it sells business-consulting and software-integration services, software and middleware.)

SAP was an earlier pioneer in radio frequency identification.

In 2002, after I had just launched *RFID Journal*, I was invited to SAP's Sapphire event in Orlando, Fla., to see a prototype application that employed intelligent software agents from a company called BiosGroup to react to RFID data and make inventory decisions in order to avoid out-of-stocks (see SAP to Demo RFID Replenishment, SAP's Supply Chain of Tomorrow and Agents Key to RFID Supply Chains). The idea was that the software would "learn" as more events occurred and additional data was captured, and then intelligently respond. But BiosGroup was sold to NuTech Systems in 2003, and SAP never did much in the RFID market beyond developing middleware that could allow its enterprise resource planning (ERP) software to send and receive data to and from RFID devices.

Oracle has not done much in the RFID arena either, aside from enabling its warehouse-management application to receive RFID data (see Oracle Speaks of RFID Plans). And Microsoft, after developing its RFID BizTalk Server (see RFID News Roundup: Microsoft Releases BizTalk Server 2006 R2 and Microsoft Announces Availability of BizTalk Server 2009)—a popular platform on which other companies have built RFID applications—has largely been a passive player in the market for the past several years.

One interesting fact is that Microsoft has lost more than \$5 billion on Bing, its search engine designed to compete with Google (see Microsoft's plan to stop Bing's \$1 billion bleeding). If the company had poured even a fraction of that amount into RFID, it could have purchased a hardware company, such as Impinj or Alien Technology, and an applications firm, such as OATSystems (which was snapped up by Checkpoint Systems—see Checkpoint Systems Acquires RFID Software Company OATSystems and RFID Baby Born from Checkpoint-OATSystems Marriage), ODIN RFID or RFID Global Solution, and owned the RFID market.

I know what you are thinking: Shareholders would not be happy if Microsoft invested \$1 billion in the RFID market, with no

prospects of earning that back in the near term. And maybe so—but I think shareholders would be happier to see their company invest in a technology that will take off in a few years, rather than continue losing revenue on a futile attempt to displace a gorilla in a tech market. (Moore's readers know that it is almost impossible to displace a gorilla, so why try?)

During conversations in recent months, I've lamented that CEOs of these big companies just don't understand how big the RFID market is (the CEOs at such large firms as Avery Dennison, Motorola and UPM RFID deserve credit for sticking with the market despite sluggish sales). Some defend the CEOs, saying there are many technologies on the market that could take off, and that they are waiting to see which hit before placing bets.

I know that's the way it works, but I have two problems with that kind of thinking. First, it's very obvious that RFID is the next big thing in the technology market. The only potential obstacle that could prevent it from becoming a multi-billion dollar market would be if vendors were unable to make systems reliable enough due to the fickleness of radio waves—but given how well cell phones and Wi-Fi systems now perform, I sincerely doubt that will be the case. (The improvement in passive UHF and active systems over the past few years reinforces my optimism.)

Second, CEOs are paid a *lot* of money. So if they're not being paid to foresee what the next big revenue opportunity is—and to seize it—then what are they receiving all that money for? Sitting back and waiting to find out which technology will hit may be a good way to avoid taking risks that could lead to being fired, but ultimately, it means buying a technology startup that's growing rapidly in a market also growing rapidly. You have to pay very high earnings multiples in that kind of market. So, while watching and waiting may be a safe move for CEOs, it's bad for shareholders.

I know that the big players will start coming back into the market now that RFID is beginning to gain some real traction. The question, then, is this: Which CEOs will continue to play it safe by dipping a toe in the water, and which will be smart and confident enough to move quickly to dominate the market, the way IBM did with personal computers while the folks at Xerox slept?

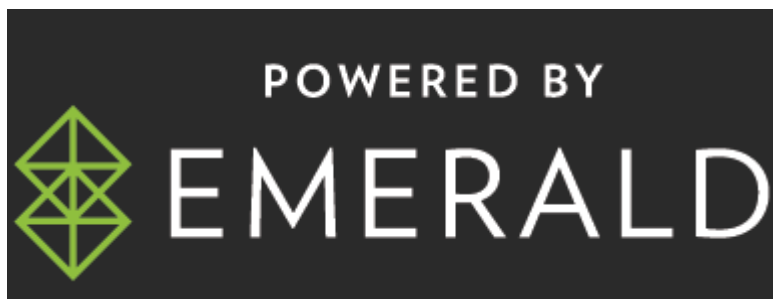
*Mark Roberti is the founder and editor of RFID Journal. If you would like to comment on this article, click on the link below. To read more of Mark's opinions, visit the RFID Journal Blog, the Editor's Note archive or RFID Connect.*



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