Big Chief Partners, Inc.
RFID Update

February 2004

Since our last update in October 2003, we have continued our involvement in RFID-related projects, and we are providing this update to keep you informed of our activities. We are also including an article written by Peter Winer, "RFID is Going Mainstream," which provides some of our latest thinking. Renoir Partners, a consultancy based in London, UK, distributed this article.

Recent BCP Activities

Our recent RFID-related activities include:

- Joined the Advisory Board for the EPC-Symposium Conference, September 2004, Chicago, an event organized by FrontLine Solutions.
- Developing solutions that leverage RFID in shows and conferences for Advanstar Communications.
- Provided RFID strategy for TimesTen. Systems built with TimesTen are instantly responsive, highly reliable and able to handle massive transaction volumes.
- Writing on RFID related topics, including the attached Renoir Partners article "RFID is Going Mainstream."
- Provided a series of RFID briefings and market advice to several Silicon Valley Venture Capital firms.
- Continuing work on commercial applications for the WebLink system developed by Big Chief for Philips Semiconductors GmbH.

For more information

Big Chief Partners offers strategic advice, research and software development for organizations that want to capitalize on RFID technology. Since early 2001, Big Chief Partners has been developing the WebLink system with Philips Semiconductors. Clients include technology providers, deploying customers and venture investors.

Peter Winer is a partner at Big Chief Partners. In this role, he manages software development projects and advises companies and venture investors. He is also a frequent presenter at conferences and seminars, focusing on identification technologies, mobile payments, infrastructure and security. Peter Winer works with clients in the United States and Europe.

Big Chief Partners Inc.
329 S San Antonio Road
Los Altos, California 94022
U.S.A.

Tel: (+1) 650-917-3832
Email: info@bigchief.com
http://www.bigchief.com

RFID is going main

Peter Winer looks at how middleware development is crucial to cutting the cost of deploying RFID

Back in the 1980s, Japanese electronics manufacturers gained a competitive edge over their foreign counterparts when they developed 'just-in-time' manufacturing processes, which enabled them to match sales with demand for inventory. Now companies as diverse as retailers and transportation companies are investing in technology to manage their supply chains and vendor relations to within a minute of demand – not to gain competitive advantage, but to keep up with their rivals.

Organisations including Wal-Mart, Exxon Mobil, Tesco and Transport for London are investing in radio frequency information identification (RFID) technology, which uses radio waves to automatically log inventory or people and match that with demand or capacity. The technology is also being explored for many other purposes, including mobile commerce, digital identity and security.

Expectations that RFID will go mainstream received a boost in recent months when Wal-Mart and the United States Department of Defense (DoD) issued RFID requirements to their suppliers.

But many organisations are already reaping the benefits of RFID. These includes Exxon Mobil, which has found that consumers are actually driving past rival oil companies' petrol forecourts for the quicker, cleaner experience that its RFID system affords them. Called Speed Pass, the system has equipped some of the company's petrol pumps in the US with RFID readers which enable them to absorb each customer's credit card information embedded in a 'tag' on a windscreen sticker. Drivers can fill up without having to get out their wallets. The information is then sent to a centralised enterprise application to manage the supply of petrol and other goods to that station. Both Exxon Mobil and its customers win, since it takes less time to buy and sell petrol.

The biggest cost involved in installing RFID is systems integration and custom software development. Since RFID standards have yet to be agreed, the cost of deployment can vary dramatically. That's why the industry is pouring more investment into developing middleware – software that makes it easier for RFID readers to transmit information to central applications software. This could be pivotal to encouraging mass adoption of RFID, experts believe.

The Massachusetts Institute of Technology's Automatic ID Centre, now named EPC Global (www.epcglobalinc.org), has played a key role since 1999 in developing RFID middleware standards including electronic product code (EPC), Savant, physical markup language (PML) and object naming service (ONS). The Auto ID Center has established five research laboratories around the globe and attracted over 100 sponsoring companies.

Consumers are actually driving past rival oil companies' forecourts for a quicker, cleaner experience

Established supply chain execution (SCE) and enterprise resource planning (ERP) software vendors have also weighed in, positioning existing products for the RFID market. And manufacturers of RFID readers and other hardware are also expanding their offerings into network edge appliances that incorporate some key middleware functions. Every vendor has a distinct approach and it is likely that the emerging technology will go through several changes before it reaches maturity. Many questions remain unanswered. Some vendors believe that RFID middleware can be applied

stream

No barrier: Transport for London is investing in RFID

horizontally across different industries and for a variety of uses. Others believe RFID applications need to be honed to the specific needs of individual industries.

Large companies like IBM believe they can solve middleware problems related to RFID with their existing products. IBM positions its own WebSphere, DB2 and Tivoli products as solutions and we get the sense that Microsoft and Sun Microsystems have similar views about their own platforms playing dominant roles. SAP expects to extend its infrastructure out towards the network edge as well.

Other supply chain execution (SCE) software vendors have joined the RFID fray recently. Generally, these companies see RFID as just one of many information sources and plan to produce adaptors that can receive information from RFID tags and readers at the edge of their distributed networks.

These large companies are investing in adapting existing general purpose products such as warehouse management, logistics and inventory management systems – already widely in use – to carry out RFID middleware functions. These products are already tried and tested in their ability to interface with existing commercial applications.

Our view of middleware for RFID

At Big Chief Partners, we see RFID as an enabling and accelerating technology. The advent of intelligent readers and collection appliances could help allay concerns that legacy middleware infrastructure cannot handle the high volumes of real-time information generated by RFID.

But these network edge devices will also require powerful and automatic management tools. Information format standards such as product physical markup language (PML) are a good start, but more investment is required to extend these standards to handle all network edge functions and application specific information formats.

Intelligent reader companies to watch include:

Thing Magic (www.thingmagic.com)
Developing low cost intelligent readers in partnership with Intel.

AWID (www.awid.com)
Provider of multi-protocol reader components and sub-assemblies.

Ntru (www.ntru.com)
Provides strong security for contactless smart cards and RFID. GenuID reader software runs on a variety of reader platforms.

SAMSys (www.samsys.com)
Recently received a broad patent for a multi-frequency, multi-protocol RFID reader.

Matrics (www.matrics.com)
Offerings include the Matrics Visibility Manager (MVM), a device for networking readers and filtering gathered information.

About Big Chief Partners

Big Chief Partners offers strategic advice, research and software development for organisations that want to capitalise on RFID technology. Since early 2001, Big Chief Partners has been developing the WebLink system with Philips Semiconductors. Clients include technology providers, deploying customers and venture investors.

Peter Winer is a partner at Big Chief Partners. In this role, he manages software development projects and advises companies and venture investors. He is also a frequent presenter at conferences and seminars, focusing on identification technologies, mobile payments, infrastructure and security.

For more information, see the Big Chief Partners web site at www.bigchief.com.