

# GS1 Hong Kong and Cisco Help Manufacturers in China's Pearl River Delta Adopt EPC/RFID Technologies

## Executive Summary

### CUSTOMER NAME

GS1 Hong Kong

### INDUSTRY

Industry Association

### BUSINESS CHALLENGES

- Mandate from global retailers for RFID compliance
- Lack of local knowledge, technical skills, and a business case to implement RFID
- Lack of infrastructure within global supply chain and high cost of entry
- Local manufacturers focused on short- to medium-term ROI

### SOLUTIONS

- Joint partnership to develop solutions
- Requirements study, technology reference case, pilot tests, and knowledge transfer
- RFID infrastructure hub

### BUSINESS RESULTS

- Developed Pan Pearl River Delta as a global sourcing center
- Accelerated the adoption of RFID
- Enhanced overall supply-chain efficiency throughout the region
- Provided local manufacturers with cost-effective solutions

To increase visibility throughout its supply chain, several global retail giants requested that their suppliers become EPC/RFID-compliant. GS1 Hong Kong partnered with Cisco Systems®, Intel, and other technology leaders to develop a cost-effective, industry-focused solution that would allow Hong Kong and China's Pearl River Delta manufacturers to attain RFID compliance and maintain their competitive edge.

## BUSINESS CHALLENGES

In 2003, some of the world's largest retailers, including Wal-Mart and Best Buy, initiated and funded research to understand how radio frequency identification (RFID) and electric product codes (EPCs) could facilitate information synchronization among trading partners. Adopted by industries worldwide, EPC-based RFID lowers costs, streamlines global commerce, and allows retailers to increase visibility throughout the supply chain. Once the feasibility of this technology was established, the retailers initiated a global mandate, requiring their suppliers to become EPC/RFID-compliant.

Quickly reacting to the retailers' mandate, [GS1 Hong Kong](#), a global nonprofit, industry-led organization responsible for developing global standards, best practices, and enabling technologies for global value and supply-chain management, tasked each of its 155 charter members with implementing the new RFID standard. The organization then formed a subsidiary called EPCglobal, Inc. to drive and support compliance with RFID and EPC technologies.



Prepared by Cisco Systems, Inc.  
Internet Business Solutions Group

### RFID Compliance Critical for Pearl River Delta

With more than 80,000 Hong Kong manufacturers located mainly in the Pearl River Delta region (130,000 manufacturers in Pan Pearl River Delta, which account for one-third of China's gross domestic product), [GS1 Hong Kong](#) saw a critical need to integrate Hong Kong's supply chain and logistics competence with its manufacturing base in southern China through effective use of supply-chain technology, such as EPC/RFID. [EPCglobal Hong Kong](#) was formed under the auspices GS1 Hong Kong in 2004 to focus its EPC/RFID efforts on that vital region.

**“FOR THOSE ENTERPRISES BASED IN THE PPRD, UNCERTAINTY IN COST AND BENEFIT IS HINDERING INVESTMENT IN EPC TECHNOLOGY. BY PROVIDING BOTH FINANCIAL AND TECHNOLOGICAL SUPPORT, MORE COMPANIES WILL HAVE THE OPPORTUNITY TO REALIZE THE MANY BUSINESS BENEFITS ASSOCIATED WITH PARTICIPATION IN THE HONG KONG EPCNETWORK.”**

**Anna Lin, chief executive  
GS1 Hong Kong and EPCglobal Hong Kong**

“Pearl River Delta suppliers considering EPC/RFID adoption face a number of challenges,” says Anna Lin, chief executive of GS1 Hong Kong and EPCglobal Hong Kong. “They don't have ready access to capital or resources to implement global standards. They also lack the technical knowledge and solution-sourcing, and they weren't convinced of the value propositions.”

Three primary goals were identified to help these small businesses begin their journey toward compliance: facilitate government regulations, generate local technology and business-reference cases, and create awareness and knowledge transfer.

Supported by the Hong Kong SAR Government's Innovation and Technology Commission (ITC) under the Guangdong-Hong Kong Technology Cooperation Funding Scheme, EPCglobal Hong Kong launched the Hong Kong EPCnetwork Infrastructure initiative in 2005 to create end-to-end supply-chain information visibility for enterprises located in Hong Kong and southern China. In addition, pilot studies would provide valuable reference cases in actualizing the benefits promised by the EPC technology. The ultimate goal was to connect Hong Kong and southern China to the global marketplace to better serve global customers' needs using international supply-chain standards.

“The support the Hong Kong SAR Government provided would enable GS1 Hong Kong to develop a world-class, EPC-compliant platform for Hong Kong, strengthening its leading position as the regional information and logistics hub,” says Lin.

## SOLUTIONS

To provide EPC/RFID implementation support to local industry adoption, GS1 Hong Kong also recognized the importance of creating an EPC-based ecosystem and established an EPC partnership program supported by leading technology companies, such as [Cisco Systems®](#) and [Intel](#). Not only do these companies support GS1 Hong Kong's EPC vision and industry program, they also provided critical implementation support to [VTech](#), one of the Hong Kong EPCnetwork Project pilots.

"Cisco and Intel have provided tremendous support to the Hong Kong EPCnetwork infrastructure initiative," says Lin. "Cisco's technology leadership and expertise will be valuable for GS1 Hong Kong to develop and implement the Hong Kong EPCnetwork based on global standards that connects the PRD region with the global market," says Lin.

**"AS A RESULT OF OUR COLLABORATION WITH CISCO AND INTEL, GS1 HONG KONG NOW HAS A TURNKEY, TOTAL SOLUTION TO SUPPORT INITIAL ADOPTERS IN THE PRD [PEARL RIVER DELTA] REGION IN EPC/RFID IMPLEMENTATION. THE COLLABORATION REPRESENTS A DEEPENING INDUSTRYWIDE COMMITMENT TO EPC IMPLEMENTATION IN THE PRD REGION."**

**Anna Lin, chief executive  
GS1 Hong Kong and EPCglobal Hong Kong**

## Pilot Tests Help Project Team Develop Proof of Concept

Once the network infrastructure solution was in place and the Hong Kong EPCnetwork was operational, GS1 Hong Kong and the pilot-project users needed to test the proof of concept by conducting pilot tests. The timing was especially good for VTech, which supplies corded and cordless telephones and electronic learning products to global retailers, such as Wal-Mart and Best Buy. Concerned about the ability to comply with the mandate, Intel and GS1 Hong Kong recommended Cisco® Application Oriented Networking (AON) technology to execute VTech's network implementation.

The Cisco AON solution, the first in the world used to expand the functionality of RFID, runs applications directly on the network. This strategy eliminates the need to deploy applications on multiple sites and results in a faster, more cost-effective, secure RFID implementation and solution. The AON solution enables filtering, collection and exception notification, reader virtualization and management, message security, and intelligent message-routing.

Cisco connected VTech to the Hong Kong EPCnetwork and began to test and gather data. After nine months, Cisco had developed a proven business case that demonstrated how U.S. retailers and manufacturers in the Pearl River Delta could achieve end-to-end supply-chain visibility by connecting RFID systems to the Hong Kong EPCnetwork infrastructure.

"We were very pleased to see VTech, one of the world's leading manufacturers, connect to our Hong Kong EPCnetwork," says Lin. "VTech's pilot case will set a reference model for how Hong Kong and Pearl River Delta-based companies can benefit from exchanging real-time supply-chain data with their global customers."

With improved supply-chain visibility, manufacturers and global retailers will be able to track and trace goods on a real-time basis, making companies more efficient through synchronizing physical goods with information and cash flow.

### **EPC Industry Support Program to Accelerate EPC/RFID Adoption**

With the pilot tests running smoothly, EPCglobal Hong Kong turned its focus toward creating a common conduit for knowledge transfer that would allow them to educate, provide support, and speed adoption of EPC/RFID. The organization announced the EPCglobal Industry Support Program (EISP), which offers financial, technological, and implementation support to enterprises operating across the Pan River Delta, and is expected to accelerate industry adoption of EPC standard-based RFID technology.

“Cisco is a great support for our EISP program, working closely with us to develop industry programs and drive technology adoption,” says Lin. “They have not only the technology, but they also have the technology and industry knowledge. This helped us to work on and obtain the value proposition regarding EPC-based RFID adoption.”

## **BUSINESS RESULTS**

### **Foundation in Place for Full RFID Compliance**

GS1 Hong Kong and EPCglobal Hong Kong set out with the vision of integrating the global supply chain so that the Pearl River Delta region could maintain its competitive edge. “This can only be achieved when we create visibility,” says Lin. “There is a strategic need for GS1 Hong Kong to take on the role of integrator, offering logistics support through our Hong Kong EPCnetwork infrastructure and EISP program to our local manufacturers and our end customers.”

Although the RFID/EPC initiative is in its very early stages, Lin and her team have high expectations for its eventual and ongoing success, including the following benefits:

- **Finished goods inventory visibility**—enhanced shipping and receiving productivity, increased order accuracy, better returns processing
- **Production visibility**—improved work-in-progress inventory management and enhanced labor productivity in receiving
- **Asset visibility**—improved the use of assets through the tracking of vehicles, reusable containers, and other high-value assets
- **Security**—improved recall management and the ability to track and trace lots, better data on expirations, and more effective management of shrinkage
- **Cost reduction**—reduced inventory, working capital, out-of-stock issues, and expediting costs

“Our first goal was to establish the Hong Kong EPCnetwork infrastructure framework,” says Lin. “The framework will act as a common conduit that lets local enterprises realize the many benefits brought by information visibility. Within that framework, we developed the EPC/RFID implementation program, which provides incentives for early adopters, manufacturers, and other companies that would like to have a first taste of this technology and to stay ahead of the industry.”

Together with Cisco, Intel, and other technology companies, GS1 is providing manufacturers in Hong Kong and Pearl River Delta an integrated, one-stop-shop solution that will enable them to maintain their competitive position by more effectively answering the needs of their customers worldwide.

## MORE INFORMATION

The Cisco Internet Business Solutions Group (IBSG), the global strategic consulting arm of Cisco Systems, helps Global 500 companies and public organizations transform the way they do business—first designing innovative business processes and then by integrating advanced technologies into visionary roadmaps that improve customer experience and revenue growth.

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