

## **RFID used for Supply Chain Management**

Radio frequency identification (RFID) has quickly become one of the hottest new technologies in supply chain management. The main reason: companies such as Wal-Mart, Airbus and the US Department of Defence have started major projects to implement RFID and they now demand their suppliers to do so as well.

These companies view RFID as an alternative to barcodes, with some additional advantages. With RFID technology, it is possible to track objects without time delays, without human intervention and thus without variable costs. This means that the speed and reliability of a process can be better optimized with RFID than with barcodes.

A large number of RFID applications and solutions are nowadays available or will be available in the near future. For example:

- Tracking & tracing (e.g. food safety);
- Product security;
- Quality control and identification of unfavourable conditions (e.g., heat);
- Logistic activities in distribution centres (e.g. supply chain collaboration);
- Various marketing applications;
- Prevention of forgery for products such as medicines;
- Improved service and maintenance.

If you are expanding your market into Europe, you may want to track and trace or any other of the above mentioned. The Netherlands is working hard to realize a lead position in RFID in the industry.

### *What is RFID?*

Radio frequency identification (RFID) is a technology to identify objects, such as pallets and roll containers, by exchanging information between a tag and a reader via radiofrequencies. An RFID tag is attached to the object and consists of a microchip and an antenna. The amount of information that can be stored on a tag as well as the read range can vary. Two main types exist: active and passive tags. The active tags contain a battery and have a reading range between the reader and the tag of up to 300 meters. Passive tags only transmit information when activated by a reader and have a reading range of about 3 meters. Active tags are more expensive than passive tags and therefore mostly used for high value items, such as cars or containers.

In the next few years, RFID is expected to have a major impact on any business involved in the production, movement or sale of goods.

### *Impact RFID on global supply chain*

In logistics, RFID is mainly used to manage the logistic chain more efficiently. However, with RFID it is also possible to improve the availability, quality and the freshness of the products in the stores, to track and trace, to provide the consumer with detailed information and to reduce the waiting line at the counter.

Today, the use of RFID is more complex than the use of barcodes and requires additional knowledge and experience.

To gather this knowledge and experience, European companies across sectors take a collaborative approach to widespread adoption, drive standardization and reduce the price of tags. In 2004 the number of RFID pilots in the European retail supply chain has increased significantly. According to a LogicaCMG RFID Benchmark Study almost 50 per cent of companies in the European retail supply chain are currently conducting one or more RFID pilots. It will be those companies which embrace RFID early that will benefit from the efficiencies and significant competitive advantage this technology promises to deliver.

#### *RFID Innovation Award*

To further stimulate and recognise the innovative application of RFID technology, LogicaCMG and ECR Netherlands<sup>1</sup> recently established the RFID Innovation Award.

This year the RFID Innovation Award was won by Schuitema, a part of the Ahold retail group, for the “Fresh Chain” project. This project will lead to better quality of the fresh vegetables for the consumer, by accelerating the speed in the chain, earlier detection of differences in temperature and in consequence, manage the storage life. The RFID chips are applied to the crates, in which the packaged fresh vegetables are shipped. These crates are followed through the whole logistics chain by using RFID.

The price has been awarded to this project, because of its innovative character, the combination of RFID and temperature sensors whereby the First In First Out can be applied. Furthermore, the use of the worldwide EPC standard and the company overriding focus have contributed to the decision to award Schuitema this award.

#### *Conclusion*

RFID will have a major impact on supply chain in the next few years, especially because retailers and manufacturers will demand shippers to support the use of RFID to increase supply chain efficiency. Cases such as the “Fresh Chain” project prove that knowledge and experience in RFID is gained rapidly and that The Netherlands is achieving a leading position in implementing RFID in the supply chain.

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<sup>1</sup> ECR Netherlands aim is to encourage Dutch companies, to implement Efficient Consumer Response in their day-to-day practice in order to provide the best value possible to the consumer. For more information: <http://www.ecrnet.org/>