Chapter 7
Motorola's Experiences in Designing the Internet of Things

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ABSTRACT

The Internet of Things will enable connectivity for virtually any physical object that potentially offers a message, and will affect every aspect of life and business. This article looks at the concepts and technologies in three application areas that Motorola is contributing to now and in the coming years.

MOTOROLA'S POSITION IN THE INTERNET OF THINGS

In just 20 years, the Internet has fundamentally changed the way we live, learn, do business and entertain ourselves. What makes the Internet so revolutionary is that it provides a standard way for people to connect anywhere around the world. Today's Internet connects people to people, providing information in text, video, sound and other formats intended for use by people. The next step is to Internet-enable physical objects—connecting people with things and even things with things. The Internet of Things will enable connectivity not just between people and their computing devices, but between actual, everyday things. By enabling connectivity for virtually any physical object that can potentially offer a message, the Internet of Things will affect every aspect of life and business in ways that used to be the realm of fantasy—or even beyond fantasy (Bullinger et al., 2007). This article looks at the concepts and technologies in three application areas that Motorola is contributing to now and in the coming years.

THE RETAIL SPACE

Overview of Motorola's Activities

Motorola's Enterprise Mobility group is addressing the Retail Space from three different directions: Supply Chain efficiency, associate effectiveness, and customer experience. Especially personalized shopping experience is converting browsing into buying customers by delivering tailored products and promotional information.

Motorola's Enterprise Mobility solutions transform the customer experience by leveraging personalized information and creating new shopping experiences by connecting customers and products seamlessly while increasing sales and brand loyalty for the retailer.

The goal is to provide the customer with (Motorola, 2008):

- Instant access to price and availability data via personal shopping systems
- Cross-sell and up-sell opportunities through target promotions (Micro Kiosks)
- Payment systems to put your customers in control of the checkout process to utilities checkout performance.

Things to Things Technologies

To increase the customer shopping experience "person to things" (P2T) communication and therefore the P2T interaction has to be improved. This can be achieved by leveraging any kind of data capturing technologies. Most of these technologies are already available in devices used in B2B application, such as 1D, 2D barcode scanning or RFID reading. For generating new kind of customer services in retail it will be necessary to transfer these technologies in mass markets devices. To ensure a fast adoption rate it is necessary to start with low hanging fruit technologies like barcode scanning by camera, which will become a "free" feature for mobile devices morphing into high end camera phones. The drawback for this approach is that traditional laser scanning of barcodes displayed on mobile devices can not be used due to incompatibility with the phone displays properties.

Another data capturing technology is near field communication (NFC), which is build on existing smart card technology used for loyalty, access, and payment contact less cards. In addition to the checkout service improvements, this technology can provide the customer with the opportunity to

Figure 2. Motorola SLVR NFC

Figure 1. Future payment vision to utilities checkout performance

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