



## **Wavecom Blue Paper:**

# M2M – Evolution or Revolution

Date: **October 2008**

**wavecom**<sup>®</sup>  
*Smart wireless. Smart business.*

*Operating Systems | Integrated Development Environments | Plug-Ins | Wireless CPUs | Services*

## Executive Summary

To mark its 15th year anniversary in June 2008, Wavecom, pioneer in wireless machine-to-machine communication, hosted a roundtable in Paris with participants from all parts of the value chain to discuss and debate the business of **communicating machines**. The discussion focused on identifying the drivers of this technology and the future growth trends.

Wavecom welcomed participants from NXP Semiconductors and Software (leaders in vibrant media technologies), PSA Peugeot-Citroën Group (leading manufacturer of ecological cars), Bouygues Telecom (wireless network operator for personal communications services) and Anyware Technologies (experts in open source technology). A lively debate was moderated by Wavecom.

### **The wireless M2M Value chain examined:**

The value chain that represents the business of wireless communication between machines today is complex and fragmented. A typical value chain (like this example below for the automotive industry) has players that start out with the building blocks of all electronics-based products – silicon and software which are integrated into wireless CPUs (central processing units) that in essence function as cell phones by transmitting data via wireless cellular networks (typically short text messaging). The wireless CPU and its embedded software then go into a subsystem, which might be a telematics box – telematics being the convergent action of telecommunications and informatics -- which then go into any number of consumer products – in this case a car. Next, the functionality derived from telematics is sold to the consumer, usually as an option for features such as emergency assistance call (in case of an accident), breakdown call in case of vehicle malfunctioning, theft or even location-services like finding the nearest restaurant. This typical M2M value chain can be defined for any M2M market.



Figure 1: Typical M2M value chain (example: automobiles).

### **Markets addressed by wireless M2M communication -- Numerous and Fragmented:**

The promoters of wireless communication between machines have identified six primary markets and tens of sub segments that can benefit by enabling machines in these markets with capabilities to glean data from the machines and in turn transform it into useful and valuable information:

- Automotive (remote diagnostics for the car maker with consumer benefits – navigation, real-time traffic updates, emergency and breakdown calls and geo-location services)
- Metering (electricity, gas and water)
- Home and office security (alarm systems)
- Vehicle remote management (tracking and fleet management)
- Control and monitoring (vending machines for example)
- Fixed-wireless telephony (fixed telephones in areas where no wire line structure exists, particular in developing countries)

In most cases, this useful information can help companies reduce operating costs – for example, utility meters that are equipped to communicate wirelessly will eliminate the need for costly manual meter reading and be able to more frequently measure resource consumption. Furthermore, by establishing a direct link between the manufacturer of any machine and the ultimate end-user gives way to the creating a wide variety of new service models, which are only possible when data can be gathered, shared and analyzed.

It is evident that in most cases clear consumer benefits are emerging that result in cost or time savings. Roundtable participants agreed that consumer awareness of these types of benefits would be the driving force in growth of this class of technology.

### ***Emerging new business models:***

New business models are emerging every day that address this new link between consumers and their machines.

A good example of this was explained by Anyware Technologies – establishing connectivity with the digital picture frame. Meeting the desire for people to share their photos has given way to a connected digital picture frame which bypasses traditional e-mail methods for sharing. This model is centred in a community of friends who want to share pictures. Once everyone in your community has a “connected” picture frame, sending and sharing files can come via the internet or directly from cell phones. The sender alerts the community, defining which members he wants to send the images to. The community can grow or be closely defined. A service provider assesses a monthly service charge that could be part of the cell phone billing system. Bouygues Telecom and Parrot already have a connected digital picture frame on the market.

Another example of a potential new business model is the “Do it yourself” alarm system. With the complex wireless part of the equation solved by the various players in the value chain, we can imagine that consumers will be able to buy “self contained alarm kits. These kits will have everything needed to secure a home or office. Consumers can install short range RS sensors throughout their house (on windows doors) and be able to monitor, most likely via the internet, the status of their home’s security at any time. One could imagine that this could be particularly interested for the second home market. A service provider (pre-negotiated by the alarm kit makers) would provide the routing of information – including alerts – to meet the consumer needs.

Anything that is mobile – cars, kids, pets and transport vehicles – a combination of cellular, GPS (Global Positioning Systems) and even satellite technology open up all new types of products and services that offer true value in something as simple as tracking kids on the beach to following shipments of goods as they make their way to all parts of the world.

These are just two examples, but the possibilities are limitless and new concepts are being developed every day.

### ***Trends that are driving this class of technology:***

Players in the value chain overwhelmingly agree that Business to Business to Consumer (B2B2C) will drive this business and past barriers have all but been removed since today:

- A mature worldwide and reliable cellular network exists;

- Global roaming is possible with current cellular technology;
- SMS short data transfer is robust ;
- Data subscriptions from wireless operators are now practical and reasonably priced; and finally,
- Emergence of easy-to-use consumer-oriented applications.

With wireless enablement being easier to build and use, from a technological standpoint -- something so simple that the mass public can use it, is expected to drive growth in this class of technology. In virtually every example that can be imagined, once cellular wireless connectivity has been established there are two parties that benefit – the makers of these machines who can now create a direct and long-lasting link to their end consumers and the end consumers who benefit from new services, previously unavailable that let them be the manager of their own lives.

### ***What can we expect five years out from this technology?:***

The panel discussed the longer term prospects for the industry and concluded the following:

- A simplified value chain, which is beginning to develop, one with less players will allow makers of all machines to be more reactive to consumer demand and more creative in meeting eventual demand for information from machines;
- Lower manufacturing and marketing costs will be realized;
- Services infrastructure will be built;
- A dramatic increase in the adoption of wireless machine communication is expected, driven by new and creative service offers that meet business and consumer needs.
- Ease of use will push the technology to mass consumer products – supported by services;
- Areas to watch for near-term growth are telematics, automatic metering and video surveillance alarms, helped by the emergence of 3G and HSPA.

In conclusion, the mass adoption of technology that allows machines to communicate is expected to be an evolution. It is a business that is developing separately from cellular telephones, while at the same time using the stable and well-established wireless networks for data transfer and services.