How to Avoid the Cost and Security Pitfalls of M2M

Dan Rudich, Senior Vice President, Tangoe

Over the last few years, there has been and explosive growth in the adoption of Machine-to-Machine (M2M) technology — the technology that enables automated wired or wireless communication between mechanical or electronic devices. Predictions state there will be more than 850 million M2M connections by 2016.

The rapid increase in M2M is creating new opportunities and providing huge return on investment across various industries; for example, many vending machine manufacturers deploy M2M functionality in their vending services to monitor when the machines need to be restocked, or to report daily sales and consumer demand statistics. In the automotive industry, M2M solutions are integrated into cars to alert the driver when maintenance is required. In healthcare, M2M devices can improve patient care and reduce hospitals' costs through remote monitoring.

M2M technology has also made a profound impact in the energy marketplace for both business and residential applications. In the past, the energy company would send an employee to physically read the meter once a month just to attain a single piece of data, using quite a bit of the company's time and resources to do so. By using M2M, an inexpensive data connection was added between the energy meter and the energy provider's data systems.

With this M2M linkage, information is gathered automatically, boosting operational efficiency and reducing operational costs. When implemented correctly, M2M technology can maximize revenue by eliminating inventory shortages, minimizing operational costs, and eliminating mundane, unnecessary tasks. It can assist companies to focus on growing top line revenue and developing new product capabilities.

It's clear that M2M has become a ubiquitous technology, so what should wireless design professionals keep in mind when deploying M2M? This checklist will help engineers and OEMs take the correct steps to ensure the optimal benefits of M2M technologies.

1) ***Avoid Roaming Charges***

With a wireless connection, M2M technology can be leveraged for mobile devices; for example, a sensor in a garbage truck can monitor the driver's speed, determine the best routes, alert the driver when the truck needs to be emptied, and when it needs maintenance — all while the truck is moving.

Cost pitfalls can arise in the form of roaming charges; for example, if a truck travels too close to the Canadian or Mexican border, it could pick up the wireless signal from an international carrier and then charged a huge roaming fee that the company may not be aware of until the finance department looks at their bills. This can be prevented by implementing a real-time, telecom expense management system with a geo-fencing capability, which automatically detects when roaming is occurring and sends an alert.

2) ***Avoid Overages***

Another example of a successful M2M deployment that was affected by unexpected costs, occurred at the federal government postal service. They automated the sale of stamps at 6,000 retail locations, and entered the sales information into an accounting system, which provided a better view of sales and insight into when the stamp supply was low. They chose to do this via a wireless system as some locations did not have access to wired Internet, and they ended up paying three million dollars in overage charges from the carrier that was supplying the wireless network.

In order to solve this, the postal service deployed a real-time telecom expense management system. The system provided visibility into modem usage and critical alerts for usage spikes, roaming, and usage pattern changes, allowing them to optimize carrier plans across their fleet. Additionally, this provided the opportunity to leverage pooled plans — pooling all of the modems into a single data plan instead of multiple plans, for a more optimized environment.

3) ***Understand all the Pieces of M2M Integration***

It's important to think about the integration of the many M2M system pieces within the enterprise. The M2M market is still evolving and is very fragmented, and enterprises often need to assemble an M2M system — for example, by buying a modem, machine, and sensor separately, and then integrating it all with the Oracle or SAP systems to make the information meaningful. Corporations should plan for the purchase and integration of each part of their M2M system.

4) ***Security***

Security is also importnat to keep in mind with M2M; for example, a large Canadian energy company with many remote offices noticed dramatic and costly spikes in data usage. They realized that employees were bringing the M2M devices home for personal use. They deployed a real-time telecom expense management solution to track data usage and breaches in geo-fences, which allowed the company to prevent unauthorized usage of the M2M devices, and ensure security and

controlling costs. This type of solution is also used in the healthcare field where security of all devices is of vital importance.

5) ***Cost & Security Control***

Plan ahead during the initial design of an M2M deployment in order to avoid potential cost and security pitfalls.

By following this checklist, wireless design professionals can ensure that their M2M deployments are cost effective and secure, allowing them to reap the greatest benefits in terms of increased efficiencies, freeing up employees' time for more value-added work, and ultimately improving the bottom line.

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