

## Machines Rule the Future

By Tim Young

Most people I know remember the day when the only phone in the house was the phone-company- owned beige or avocado beast in the kitchen or hallway.

Today, I feel naked without my Blackberry.

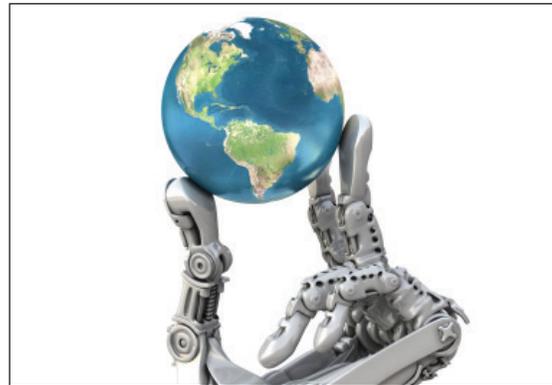
Tomorrow, if M2M projections come to fruition, my dishwasher will feel the same way.

The rise in machine-to-machine communications has been building steadily in both promise and reality over the last few years. The precise extent of the possibility is not yet known, but enthusiasm runs high.

"We've just started with M2M," Ben Kocken, Head of Innovation and BSS at Vodafone Netherlands told Amdocs at their 2011 InTouch Business Forum, "and we expect that within two years, M2M will provide 5% of the total revenue at Vodafone Netherlands. This is just the beginning."

5% of total revenue in two years is monumental, but is perfectly reasonable when you take a look at the sheer mass of the M2M opportunity.

The exact numbers vary slightly depending on who you ask, but this decade brings promises of a vast uptick in the number of devices present on the network. Ericsson, earlier this year, put forth the



estimate that by 2020, there would be 50 billion networked devices, worldwide, and that the M2M market would grow from \$16 billion in 2008, to \$57 billion in 2014.

Evolving Systems, meanwhile, estimates that those billions could actually become trillions, which is an opinion shared by Amdocs, which has popularized the idea of "tera-play": a worldwide network of trillions of connected devices. Companies like Cycle30 are already marketing to enterprise players (with a recent customer win with Arrow Electronics) to provide billing platforms for M2M services, and many other OSS/BSS vendors, large and small, are pursuing the M2M market just as eagerly.

Likewise, service providers have begun positioning themselves to meet the coming demand of M2M.

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Verizon Wireless's wholesale M2M solutions promise to, "offer M2M innovation on America's Largest 3G Network." AT&T has beefed up its M2M capabilities with application integration and global roaming capabilities. BT's Redcare data management branch has made M2M a major tentpole along with more traditional business lines like alarm monitoring.

However, no consumer provider that I've seen has attacked the issue of M2M quite like Sprint has. It's a natural outgrowth for the company, as its business model is already more closely aligned to the enterprise than the consumer space, so enabling enterprise-level M2M management makes a lot of sense for the company.

"If you think about where M2M started for a number of companies and enterprises, it started with fleet and telematics," said Tom Nelson, Group Manager for Emerging Solutions at Sprint Nextel. "If you think of that as one of the early entrees for machine-to-machine, from there we have seen, especially within the last few years, explosive growth in the space." That growth has been the impetus for Sprint's creation of its Emerging Solutions group, the focus of which is to put, as Nelson said, "critical mass and focus of resources behind machine-to-machine."

Whereas the traditional wireless space focuses on the latest and greatest handset to hit the market, things are different on the machine side. "M2M has a different complexion," said Nelson, "from the kinds of devices to the different enterprise and developer needs."

One particularly interesting issue is providing a network for customers that can't tell you how their experience is or whether there's a problem with their connection.

"What's unique, from a care and support perspective, is when we had a handset we could just call them or send a text and say 'how are things going?'" said Nelson. "Now you've got these devices that you need to be able to effectively manage and communicate back and forth with the device, knowing that there may not be a human that we're talking with."

"We've got to find ways to help our customers manage what could be anywhere from thousands to millions of units," said Chris Ferguson, also with the Emerging Solutions group and tasked with identifying and building the tools that help customers make the most

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of their M2M solutions. "They certainly don't want to have to pick up a phone and call Sprint every time they need some action taken on those units."

To enable higher levels of self-service, the team launched the Sprint Command Center. It allows customers to have a wide variety of controls over their devices and their services. "They have the capability to activate their devices, and we have several states they can put their devices in," said Ferguson. "If you think about something like connected transportation, I may be embedding a module in a car that's in a manufacturing line, but I want to make sure that module is up and working."

"We can keep that in a provisioned state so that when it rolls of the line and is at a dealership, the dealer can actually demo that capability to the customer," Ferguson continued. "We really don't have an end-user yet, so we're not billing for that usage yet, but I can keep that module up so that I can manage it so that I can make that happen for the customer. The ability to have that connection to that network before the device is in the end-users' hands is really important to our customers."

However, this level of control possibility doesn't mean that enterprises are forced to micromanage. "They can either manage those devices in bulk, or if they're a very large customer, they can even use APIs," said Ferguson. "They certainly don't want to sit at a portal and manage those devices one by one."

Rating and charging mechanisms are flexible as well. "A company may or may not know what their usage looks like," said Ferguson. "Do their devices ping the network once a month? Do they ping it every second? We allow customers to see their usage so that they can adjust their rate plan up or down and avoid overages and avoid paying for more data than they really need. "

Customers can also set up alarms and triggers to guard against unusual activity. If a device that usually only pings the network very rarely starts using massive amounts of data, and there may be some sort of fault or fraud, the customer is alerted and can investigate,” said Ferguson.

There are other baked-in OSS/BSS goodies, too. “We have network monitoring where we can shoulder-tap the device to make sure it’s on,” Ferguson continued. “We can work with third-party network companies that can run diagnostics on a model. Let’s not roll a truck if we don’t need to. Let’s do as much of this remotely as we can. We’re trying to make it convenient and easy for the customer.”

While Sprint has not announced which OSS/BSS vendors it is working with to make these systems all go, Ferguson told me that Sprint hopes to have some of those announcements out later this year.

“We also offer some integration in the command center with those partners, so not only would you get the functionality that we’ve built into the command center, but some of those third parties that provide that next layer of diagnostics can share APIs,” said Ferguson.

“What we find is that the creative ideas from the application providers and support providers are really coming from the ecosystem of M2M. When you think about it, the data demand of supporting a thousand digital signs is completely different than if you are tracking e-readers or connected vehicles,” said Tom Nelson.

And so, as we begin the march toward billions or trillions of connected devices, we see service providers seeking to provide service for the machines as they become more a part of our connected lives.

Now, if you’ll pardon me, I just got a call from my refrigerator. It wanted to let me know that it’s running.

**Device projections range from 50 million to several trillion connected devices by the end of this century.**

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