

M2M: When machines talk back, it's a good thing

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Skilled listeners know that even machines that haven't been networked communicate quite a bit through their behaviors: cycle time, throughput, vibration, motion, and wear—the sites and sounds of manufacturing. Most people know, or have heard, about people who can put a hand on a machine and diagnose a myriad of ills. A few even can use subtle cues to optimize a line and even a plant. At the same time machines are getting more complex, such in-depth expertise is getting more rare. With machine complexity comes ability to communicate status, diagnostics, and a wealth of other information valuable to many areas of the enterprise and supply chain, creating opportunities, as more real-time information is available to more people to make smart decisions.

Machine-to-machine (M2M) communications, interconnecting physical assets with each other and with people, is predicted to exceed \$250 billion by 2010, according to [Harbor Research](#) estimates cited at the recent “M2M In Action: Strategy Summit & Networking Event” in Chicago. (No current M2M market value was provided.) Whatever the number, the enormity seems understandable, since M2M seems to incorporate residential, commercial, personal device communications, as well as multiple industrial categories, including industrial networks, wireless communications, data acquisition, monitoring, human-machine interfaces, and the related hardware, software, and services, across all industries.

With this kind of diversity, some have been putting in place the elements of the disruptive, new M2M world, without even calling it that, suggests Glen Allmendinger, president, Harbor Research. Also called the pervasive Internet or the embedded Internet, M2M goes way beyond saving money. It will recreate the ways companies do business, what business they do, and the companies with which they align and compete, he says. Ultimately technology will enable ability to communicate, control, and compute at a granular level. “We've had very little machine to machine real-time management. People have no idea how much change is going to be driven by the real-time enterprise, running more invisibly. Capital assets will be monitored in real time.” The disruption created by wireless communications, he says, has helped people understand cheap and easy networking. “For almost no money you can monitor almost any asset, almost anywhere.”

3 MESSAGES ABOUT M2M/THE EMBEDDED INTERNET

M2M (machine-to-machine communications, also called embedded or pervasive Internet) will change the world more than people understand, say some analysts. This can be the booster rocket that moves businesses past the service alignment challenges of the 1990s, allowing companies to “catch up” if they haven't yet expanded service offerings. Three key points follow.

1. Networked services and M2M-enabling technologies change business models and the rules of doing business.
2. In addition to technologies, it's about relationships that deliver value to customers. These new models work through enhanced relationships and alliances.
3. Those with M2M-enabling technologies first and the business-changing relationships that follow (despite slings and arrows from competitors) will gain huge market advantages, because the learning

curve is extensive.

Source: Control Engineering with information from Harbor Research.

M2M will go everywhere, but initially, investments are easiest justify for businesses that make (or could make) 8-15 times of their revenue after a customer's initial capital investment, Allmendinger explains. Value is added with greater communications and enhanced levels of service, predictive maintenance, better managing relationship through the product lifecycle, and capturing the aftermarket, not only by saving money, he suggests. This creates huge opportunities for premier diversified industrial companies, such as ABB, GE, Honeywell, Rockwell, Schneider Electric, Siemens, and others. They, and their competitors, may also benefit through "coopetition," combining cooperation and competition among quickly changing sets of partners, creating a network as the new face to the customer, he says. "You'll need to reorient business to where money is really going to come from. Economic value is generated around real-time knowledge of the asset. Once the technology-enablement step is complete, then it's about socialization, alliances, and ecosystems. How companies manage those alliances will be the central point of differentiation."

For "Growth Opportunities and Business Models for the Pervasive Internet," a 20-page PDF Harbor Research white paper, click [here](#).