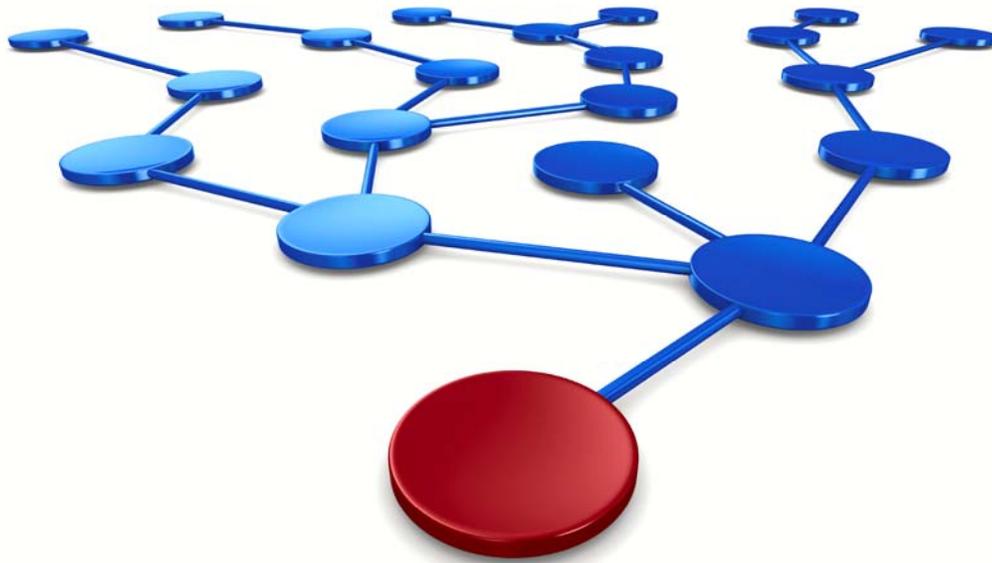

The M2M Opportunity for the Small-to-Midsize Mobile Network Operator



Understanding the
business opportunities
for machine-to-machine
communications, the
next frontier in mobile
markets.

April 27, 2012

What is M2M?

Machine-to-machine (M2M) communications is exactly what it sounds like: two devices exchanging data without a human being in the loop. It can be as simple as the security card used by millions of employees to get through the front door of their buildings. It can be as complex as a global surveillance system linking thousands of sensors.



For decades – long before the term “machine-to-machine” was used – M2M was either a short-range affair (the security card) or the province of costly, specialized networks (the surveillance system). The most common way to connect remote devices that needed to exchange information was the SCADA (supervisory control and data acquisition) standard, with the data running over telephone lines or satellite.

Not any longer. Two major trends have converged: the explosive growth and merging of the Internet and mobile telephony, and the plummeting costs of the sensors and transceivers that make up the network. Now M2M is expected to be the fastest-growing part of a mobile business that, in many parts of the world, has approached saturation in terms of new subscribers.

Infonetics Research expects there to be 428 million cumulative mobile M2M connections by 2014, reflecting a compound annual growth rate of 38%.¹ Analysis Mason expects there to be 2.1 billion M2M devices installed worldwide by 2020.² The total revenue generated by connected devices will grow from US\$560 billion in 2010 to US\$1.8 trillion in 2020, of which US\$1.2 trillion is an addressable opportunity for mobile operators, according to Machina Research.³

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Why Does M2M Matter?

Whatever the right figure turns out to be, it is a lot of growth. Where will it come from?

Utilities

M2M systems will be deployed by electric utilities seeking to wring greater efficiency from their power grids and both water and gas utilities striving to reduce pipeline losses. The European Union has called for the introduction of smart meters in offices and domestic properties by 2019 to allow people to monitor their energy use, and rising use of smart meters is expected to kick off an explosion in home automation.



Transportation

Automobile and transport companies will install M2M to improve safety, operational efficiency and reliability. Vodafone estimates that M2M in smart meters and vehicles could cut CO₂ emissions by 90 million tons a year by 2020 across the European Union.⁴



Surveillance

Governments will supplement ubiquitous security cameras with a vast multitude of other sensors to monitor air, water, roads, sewers, bridges and tunnels. Governments will also stimulate M2M with regulations that enforce reductions in carbon emissions, which require monitoring and mitigation using M2M-connected devices.



Health

Healthcare providers will use M2M to monitor patients with health problems and reduce unnecessary office visits and hospitalizations, responding to the ever-rising cost of providing healthcare services.



And all this is surely just a start to deployment – the applications that come to mind before we have a complete understanding of the power of M2M. As sensors grow ever cheaper and batteries become smaller and more powerful, the opportunities for M2M applications will only expand.

How is M2M Different from Mobile Telephony?

For all of the excitement, M2M communications traffic is actually nothing new. It consists largely of SMS (Short Message Service) or other message traffic traveling over conventional mobile networks, supplemented by wireless Internet and, in some select cases, satellite circuits. Message volumes are such, however, that mobile network operators who are serious about M2M tend to deploy mobile packet gateways specifically for their M2M operations, separate from their general mobile data infrastructure. This simplifies business operations and allows optimization of network utilization.

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M2M is attractive as a business, however, for reasons that have nothing to do with technology. Customer churn rates for mobile phones are high, but M2M is a much stickier service. Customers deploy M2M in order to solve a business problem or gain a valuable new capability, and the provider winds up becoming tightly integrated into the customer's business processes.



Consider an M2M system installed across a fleet of trucks that reports on the truck's location, speed and engine condition. It is a specialized application designed end-to-end to measure what the trucking company needs to measure, and which presents the data in a way that is useful in optimizing fleet operations. It is developed and installed by an M2M application service provider working closely with a mobile technology company and mobile carrier. The amount of data may be small for such an application, but the value of the platform being monitored is usually very high, which calls for a robust cybersecurity implementation as well.

Once this complex system is up and running, the first rule of operations takes hold: if it ain't broke, don't fix it. Customers think long and hard before changing partners in this particular dance.

There may come a day when M2M applications are sufficiently standardized that customers will have a choice among a wide range of providers offering interoperable solutions, which will unleash a more normal level of customer churn. But we have a long way to go before we get there.



What is the M2M Business Opportunity?

The world's biggest mobile carriers see huge opportunities in M2M. Vodafone, Airtel, AT&T, Telefonica, Verizon, Orange and Singtel are all investing, alongside technology providers such as Ericsson, Nokia, Huawei and ZTE.

In the first quarter of 2010, AT&T Mobility announced it had more than doubled the number of M2M connections on its network to nearly 5.8 million, up from 2.8 million in 2009. Meanwhile, Verizon Wireless reported 7.3 million M2M connections on its network in the first quarter. Intel and Vodafone announced a 2010 partnership to stimulate the M2M segment with Intel's new Atom chips and Vodafone connectivity into cars, refrigerators, stoves, home climate control devices, security systems and even toasters.⁵

In April 2011, Ericsson agreed to acquire Telenor Connexions to gain technology and know-how from the Norwegian operator. In February 2012 Sprint Nextel signed a massive roaming agreement with Orange Business Services (OBS), part of France Telecom, allowing it to compete for machine-to-machine (M2M) business in more than 180 countries.

What's In It for Smaller Mobile Carriers?

M2M applications will continue to be distinguished, however, by the high degree of customization they require. The giant mobile carriers may dominate but a typical project also involves a technology



provider, systems integrator and applications developer. The mobile carrier acts as the prime contractor and assembles the team needed to accomplish the mission.

So, what is in it for the 2nd or 3rd Tier mobile network operator (MNO), serving one or more regional markets? A good deal, as it turns out. The extreme fragmentation and customization of M2M will create opportunities for many years to come. For example:

- A regional MNO has a major open-pit mining operation in its territory. As part of its regular expansion plan, the MNO adds a cell tower near the mine, and finds that roaming traffic skyrockets, because the hugely expensive equipment used in mining is increasingly equipped with M2M systems to monitor performance and prevent theft.
- Another MNO serves a low-density market that is home to several warehouse and distribution operations. As trucking companies deploy M2M for monitoring truck location, speed, refrigeration and engine conditions, the moving vehicles generate substantial roaming traffic along highways.
- Rural areas frequently contain a major hospital that serves as the hub of a regional healthcare delivery system, and it is these providers who are pioneering in telehealth to cut costs and improve outcomes. M2M communications between devices in patients' homes, or on their bodies, lets healthcare provider monitor chronic conditions and avoid hospitalizations, and roaming agreements can steer a portion of that revenue to the regional MNO.

In these cases, the MNO is not designing or building the M2M platform, nor creating the specialized applications that make it work. But the operator can claim its share of the global growth in M2M revenues through the same roaming agreements that support the rest of its business model.

Understanding Your Options

The M2M opportunity does not, however, have to end there. If the communications decision-makers for a utility, hospital, distribution company or government agency are located in an MNO's territory, they represent potential M2M customers. MNOs have the opportunity to contact them, learn if they are planning or already implementing M2M, and determine if their geographical requirements are a reasonable fit for the territory. All it takes to get started are the relationships the MNO already has, and expertise in M2M services and applications.

Globecomm provides the expertise that proactive network operators need to expand into M2M.

When it comes to M2M, Globecomm stands ready to offer that expertise. We are a mobile network operator providing hosted services to VMNOs, and a systems integrator with a growing portfolio of specialized M2M platforms. Our mobile hosted core supports both CDMA and GSM systems, from 2G through 4G/LTE, backed by a 24x7 network operations center. We currently terminate more than 11 million minutes and handle 1.3 terabits of mobile data every month on behalf of our customers.



One example serves to explain where we fit in the fast-evolving M2M environment. We work with a mobile technology company and mobile carrier to connect a network of sensors on refrigerated containers with the global quality control network operated by a transportation company. The network ensures that valuable cargo keeps its cool throughout the journey. In addition to integrating many of the systems in the complex communications chain, we also provide and manage the satellite links that ensure uninterrupted coverage. The same combination of systems and services is increasingly being used to provide remote monitoring of engines, fuel levels and quality for cargoes on the move around the world.

To learn more, call us at 1 (866) 499-0223, (631) 231-9800 or info@globecomm.com.

About Globecomm

Globecomm is a leading global provider of managed network communication solutions. Employing our expertise in emerging communication technologies, we are able to offer a comprehensive suite of system integration, system products, and network services enabling a complete end-to-end solution for our customers. We believe our integrated approach of in-house design and engineering expertise combined with a world-class global network and our 24x7 network operating centers provides us a unique competitive advantage. We are now taking this value proposition to selective vertical markets, including government, wireless, media, enterprise, and maritime. As a network solution provider we leverage our global network to provide customers managed access services to the Internet backbone, video content, the public switched telephone network or their corporate headquarters, or government offices. We currently have customers for which we are providing such services in the United States, Europe, South America, Africa, the Middle East, and Asia.

- We offer a wide range of hosted and managed communications services that leverage our global transmission capacity and our network of data center, content management and switching facilities.
- Our expert teams can also advise you on the best ways to meet your critical communications needs, while our specialized laboratories evaluate broadcast, IP and other technologies for customers.
- We can engineer and integrate individual systems or complex networks, and then support them through the lifecycle.
- Our engineering expertise has also produced a wide range of satellite and wireless terminal products ready for quick and cost-effective deployment.

Globecomm makes one vital commitment to our customers: that the solutions we provide will work, no matter what. Founded by engineers, Globecomm provides services and products supported by one of the industry's largest in-house engineering staffs. When we build components into our services and products, you can count on the fact that we have tested them exhaustively for reliability,



compatibility and cost-effectiveness. That's why suppliers have come to rely on us for improvements to the products they provide.

¹ "Exponential Growth in M2M Market Dependent on Important Network Enhancements" by Alan Weissberger, *Viodi View*, October 7, 2010

² "The Internet of Things Comes Alive" by Jane Bird, *Financial Times*, November 15, 2011

³ *The Connected Life*, GSM Association, 2012.

⁴ "The Internet of Things Comes Alive" by Jane Bird,

⁵ "Wireless Carriers Looking to the M2M Market to Further Expand," *Wireless Industry News*, August 2010.

