



MACHINE-TO- MACHINE

EXPLORING POTENTIAL OPERATOR ROLES

Machine-to-machine solutions can help enterprises across a range of industries create efficiencies, deliver new services and comply with regulations. There are three potential roles open to operators when exploring this growth opportunity. This paper examines the roles in detail and identifies the key success factors that operators adopting these approaches need to understand.

THE EMERGENCE OF THE NETWORKED SOCIETY

The Networked Society will fundamentally change the way we innovate, collaborate, produce, govern and sustain. It will drive industrial and societal transformation, and anything that benefits from a connection will be connected.

Machine-to-machine (M2M) communication is a key component of this emerging Networked Society. M2M refers to solutions allowing communication between sensors (which record temperature, pressure and humidity, among other things), assets (such as cars, smart meters, vending machines and consumer electronics) and information systems. Integration of sensors and information systems also allows automatic execution of processes based on data collection, data analysis and remote interaction.

M2M solutions are implemented by enterprises across industries in order to improve efficiencies, enable new and differentiated services, and meet and comply with regulations. M2M solutions will also be a way to meet sustainability goals.

For example, utility companies are using M2M to connect meters and infrastructure to automatically collect data about supply and usage for monitoring and billing. Connected grid management and smart meters will improve the efficiency and reliability of distribution and give utilities and consumers better visibility over resource usage and spending. Home and real estate owners, as well as businesses, can also monitor and control their usage and their building's resource utilization – managing heating, air conditioning and lighting automatically with M2M applications.

The European Commission has mandated that the electronic safety system known as eCall should be fitted to all new models of cars and light vehicles beginning in 2017 (recently changed from 2015) [1]. eCall will automatically notify emergency services if the vehicle is involved in an accident as well as provide its location. The service will speed up the arrival of emergency teams by an estimated 40 percent in urban areas and 50 percent in rural areas [2]. Automotive manufacturers are ensuring regulatory compliance by equipping cars sold in Europe with eCall. Automotive manufacturers are also taking advantage of “connected cars” to equip vehicles with infotainment solutions that improve customer satisfaction and build customer loyalty.

Many M2M deployments will generate enormous amounts of data. For example, a jumbo jet can create 640 terabytes of data during a journey across the Atlantic Ocean [3]. But it is not the generation and storage of this data set that will create value for the jet manufacturer or airline, but the process of turning the data into meaningful information through analytics to support complex decision making [4]. Moving into a more connected world, analytics will be a key differentiator, and analytics insights will be used more within top-performing organizations, both for future strategies and for effective operations [5].

At the same time, the ICT industry can play a crucial role in managing challenges related to sustainability. Global systems are being challenged by megatrends such as climate change, population growth and urbanization. There is an urgent need for an integrated and sustainable development agenda [6] in which ICT solutions such as M2M play a crucial solution role.

M2M communications is one of the fastest growth areas in the ICT industry today. Berg Insight, a dedicated M2M/Internet of Things (IoT) market research firm, has estimated that the compound annual growth rate of the number of cellular connected devices will be approximately 23 percent between 2013 and 2019, and that there will be almost 600 million cellular connected devices at the end of that period. The firm also estimates that global cellular M2M network revenues will grow with a compound annual growth rate of around 27 percent and reach almost EUR 22.5 billion by 2019. During that period, the monthly average revenue per user is estimated to increase

due to more bandwidth consuming solutions. [7]

Competition in the market is fierce, and the competitive landscape is continuously evolving to include IT vendors, system integrator companies, device makers, mobile network operators, mobile virtual network operators (MVNOs) and other solution providers with deep domain knowledge. Partnerships, mergers and acquisitions are only adding to the complexity as the competitive landscape is continuously evolving.

POSITIONS FOR GROWTH

With increased competition, enterprises are increasingly looking into how to improve operational efficiencies as well as develop new revenue-generating services. Many industries are also facing new compliance regulations. To meet these challenges and to transform their business, enterprises often work with industry experts to find solutions. In many cases, solutions will cut across multiple elements of an enterprise, and strategies need to be aligned and supported by people, processes and technology within the entire organization.

Enterprises that are implementing M2M solutions need to work closely with business partners in the execution of the business transformation. To build the solution, the enterprise must request support from an array of partners – for example, module and device manufacturers, connectivity management providers, application enabler providers, system integrators, and application providers.

Operators can enter the M2M market by taking a variety of roles in the value chain. Each role has unique characteristics, challenges and rewards. Understanding where to play in the value chain is of significant importance for the success of any M2M effort. There is no one-size-fits-all type of solution, and different operators are going to have different capabilities with which to build their business.

There are in principle three roles an operator can take when entering the M2M market, all of which can and will be combined when addressing the market. Some examples will be covered later in this paper.

Network Developer – provides connectivity and communication in all possible arrangements and utilizes its network infrastructure and operations with high efficiency.

Service Enabler – focuses on extending business value by using the network and other assets. Operators in this role provide functionality on capable platforms that are easy for other industries to integrate into their business processes.

Service Creator – enters into new value chains outside the traditional telecom domain by providing end-to-end applications and services to substitute and transform offerings in modern industries.

Operators deciding to enter the M2M market must do their due diligence and fully understand their own capabilities in order to understand what value they can offer. A full market assessment encompassing the current landscape is crucial for understanding the competitive situation in the various industries, as well as what role to take when addressing them.

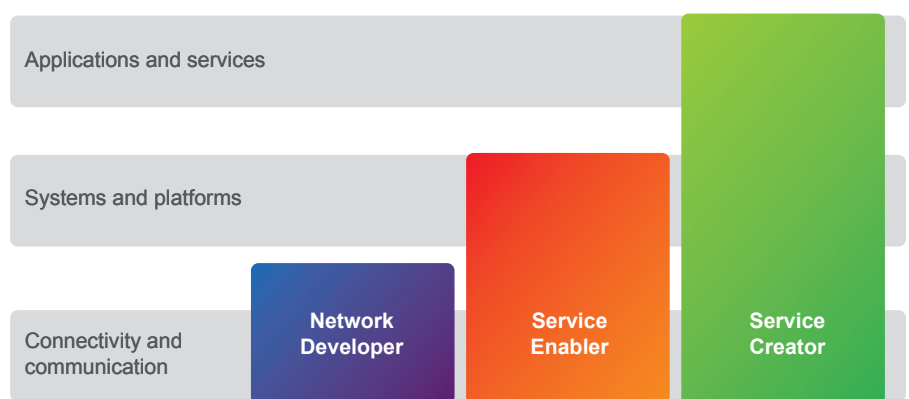


Figure 1: Operator roles in M2M

NETWORK DEVELOPER

The Network Developer role allows operators to capitalize on their network assets with a limited impact on current business and operations. With a connectivity- and communication-focused offering, the Network Developer offers a critical part to the end solution. It is likely that the Network Developer will not be directly involved in the M2M solution development together with the enterprise.

A Network Developer will address the M2M market mainly through distribution partnerships, such as MVNOs, M2M aggregators or through its existing wholesale channels. With its dependence on partners, this kind of operator will need to focus on identifying and sustaining the right relationships.

Examples of such partners are the growing number of M2M service providers that do not own any network infrastructure. Specialized in building and managing M2M solutions, they are in need of well-managed connectivity from operators. In such a case, the M2M service provider would serve as a channel partner for the operator.

To be profitable as a Network Developer, focus must be on delivering services in relatively large volumes. The revenue per connected device that a Network Developer will be able to charge will be limited; hence, cost-efficient delivery is crucial. An operator might also use the Network Developer role as a complement to its other roles, using distributors to increase the volumes and push down the unit cost.

As a Network Developer, connectivity and communication services will be bundled into many other providers' value propositions. Because of this, a Network Developer will need to be flexible and employ multiple business models. The Network Developer will also need to work with several dimensions of service performance, as some customers and partners might put more emphasis on coverage and the availability of a service, while others might focus on other service aspects such as throughput or latency.

SERVICE ENABLER

Operators taking the role of Service Enabler provide functionality on capable platforms that are easy for enterprises to integrate into their M2M solution and that support their business processes. Service Enablers operate their business at the edge of the network with a fair portion of IT components, as well as using advanced business support systems. Partnerships are applied at the back-end for service capabilities as well as the front-end for distribution and market reach.

To be successful as Service Enablers, operators must build industry competence and understand how their propositions create value for the enterprise using them. It is also necessary to develop business and charging models depending on the situation and business requirements of each customer. As an example, a car manufacturer might want to pay a one-time fee for its eCall connectivity, while, at the same time, it might want to be charged in a different way for a consumer-related proposition with its infotainment system, for example, monthly or for the amount of data being used.

Another example could be in consumer propositions, in which the service provider sells a connected service to the consumer and wants to have its costs for connectivity aligned with its revenue streams. In this case, a Service Enabler would need to be flexible with its charging model and start charging for its services when the service provider starts receiving revenue for its consumer service. There will also be a need to align business models with the business events that the service provider wants to execute, such as factory testing, distribution mode, automatic activation and monetization.

As understanding industry-specific market conditions will be a key success factor, a clear focus on specific industries, such as automotive and utilities, and solution segments, including asset management and fleet management, will be required.

Service Enablers need to dedicate resources toward M2M-focused work, and the best way to approach this is with a dedicated unit. Functions that should be involved are sales and marketing, product management, sales support, pricing and contract management, partnership management and customer support.

Dedicated support systems to manage the M2M business will be required, together with infrastructure to support business-critical consumer services. Business critical services will also put requirements on network, assurance and operational Service Level Agreements, and require guaranteed QoS.

As a channel to the market and as a way to acquire industry specific competence, partners will be of great importance, and identifying and successfully managing these partnerships will be critical components in this M2M strategy. A Service Enabler needs to identify partners capable of integrating its services into a service offering. Such partners are often industry specific solution providers that will also function as a sales channel for the operator.

SERVICE CREATOR

A Service Creator takes the lead and collaborates with partners to innovate and set up value systems in the area of ICT-based services for businesses and industries. Operators entering this role will use their own sales and delivery channels to address the market with end-to-end services, such as integrated fleet management solutions, remote patient monitoring solutions and retail solutions. Because of the nature of this role, Service Creators will face a new competition landscape, meeting IT and internet players as well as service providers from other industries.

Operators taking the role of Service Creators must carefully assess the market to identify opportunities that can be addressed, as well as what would be required to address them. Both acquisitions and partnerships could be potential ways to target new opportunities and extend propositions. Some key aspects to consider in evaluating acquisitions and partnerships are whether the competence for the targeted industry and solution area exists within their own organization and whether the operator has the right sales, distribution and delivery channels. Many operators have the competence and capability to develop solutions for various industries; however, few operators have the competence, channels and credibility of being a trusted business partner and solution provider in these industries, something that is required to become a successful Service Creator.

Building ecosystems and alliances with solution partners will also be of importance to differentiate offerings. Even though the Service Creator takes the service to the market, mainly through its own channels, it will use partners during the development phases.

To get the right focus and management attention, operators aspiring to be successful Service Creators will have to often place dedicated M2M units in dedicated organizations, or spin them out as their own companies. One underlying reason for this is that a Service Creator business is very different from an operator's traditional business, and the new business needs to be executed on its own merits. For example, assume that an operator is becoming a Service Creator in the health care sector, serving health care providers with end-to-end health care solutions. This business would compete mostly with other health care solution providers rather than other mobile operators.

TRADE-OFF BETWEEN VALUE AND VOLUME

When addressing the M2M market, operators will need to play multiple roles at the same time, addressing different segments of the market with different roles. For example, one operator would be able to serve multiple segments and industries with a similar connectivity management offering, while another operator, deciding to go for the Service Creator role, would need to build specialist competence and focus on a few selected segments. The Service Creator would still, in many cases, have a role as a Network Developer in the segments that it does not address as a Service Creator.

Looking at the value captured across the full value chain, it is clear that more value is created closer to the solution of a business problem. The value generated by a player specializing in solving a particular business need will therefore be higher than a player delivering a component in the overall solution. In turn, this implies that a Service Creator role adds more value than a Service Enabler role, which in turn adds more value than a Network Developer role, as Figure 2 shows.

On the other hand, the more specialized a partner is, the less business volume it will generate for the operator, in comparison with a partner with a more generic offering. For example, a module manufacturer will have a larger market to address with its M2M module than a specialized solution provider. There is a trade-off to be considered between value and the volume of the business being addressed.

This trade-off is significant when it comes to how operators strategize on what position to

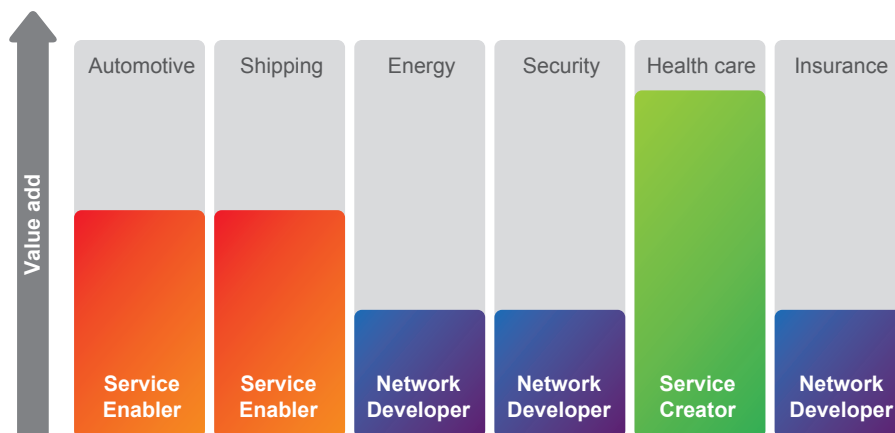


Figure 2: Example of how an operator can add value in different segments

take in the value chain. Operators, with their assets and channels, have great opportunities to generate value in M2M; the challenge lies in how to utilize and monetize the assets and how to decide what to address.

Looking forward, M2M will be evolving into the IoT. This will put new requirements, not only on operators but on the ICT industry as a whole. IoT will look like M2M in many aspects – it is also about connecting sensors to systems through networks. However, with IoT, the connection to and use of the broader internet is also included. IoT ecosystems are going to emerge, similar to today's internet, which will allow billions of devices to connect, communicate, and interact as we do on the web today. To reach this point, increased collaboration and governance across value chains will be necessary, in addition to standardization and secure methods for ensuring interoperability [8].

CAPTURE THE OPPORTUNITY

M2M is a true business opportunity for operators – an opportunity that will come with fierce competition from not only traditional competitors but also from other ICT players. Operators should engage in strategic business development in order to best decide what role they should play in the M2M market to ensure maximum return on investments.

Going after this growth opportunity will significantly affect the current operating model, something that can be successfully addressed by forming a dedicated unit for M2M business. Partnership management will be a key building block in the new M2M business, and will build credibility and enable market entry.

All roles and options to market entry are viable and come with their own challenges and rewards. Operators addressing M2M must fully understand their own capabilities and the markets in order to understand what role to play and where.

GLOSSARY

IoT	Internet of Things
M2M	machine-to-machine
MVNO	mobile virtual network operator

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FURTHER READING

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