



Machine-to-Machine Focus Group (M2M-FG)

Assessment and Recommendations

June 2012



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EXECUTIVE SUMMARY

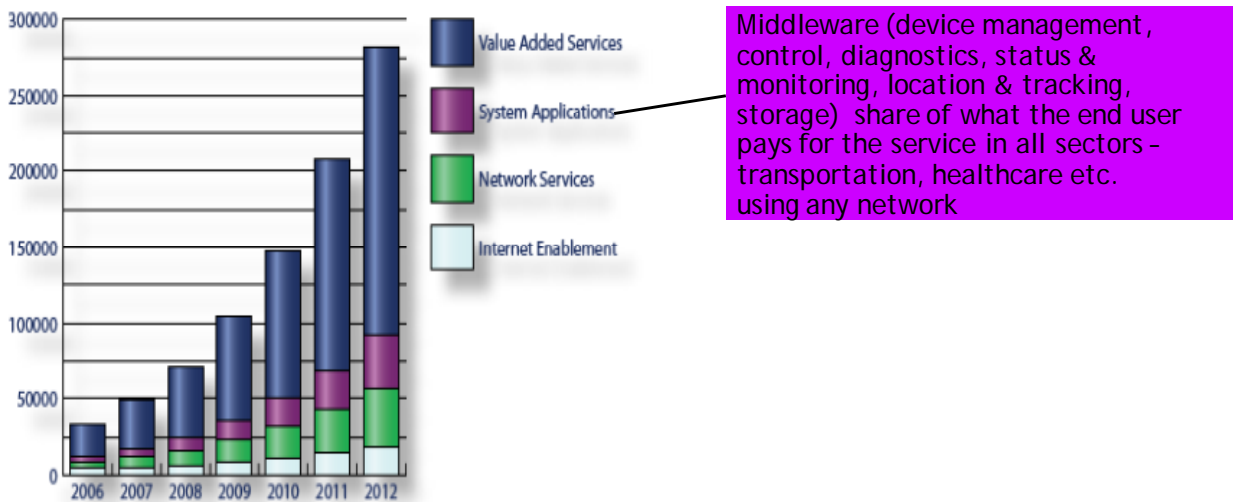
1.1 Problem Statement

With a forecasted 15 billion connected devices by 2015, and 50 billion connected devices by 2020, the proliferation of machine-to-machine (M2M) implementations creates an enormous potential for added complexity to telecommunication networks. Pursuing areas of commonality where verticals and Information and Communication Technologies (ICTs) converge is essential for discovering the features/functions and parameters to support a common M2M service platform. Establishing a "Trusted Environment" for all entities associated with vertical services and applications is the imperative of the ATIS M2M Focus Group. In order to better understand where substantial commonalities exist, from which common service layer functionalities may be targeted for standardization, this document will specifically address two vertical segments (Smart Grid and Connected Vehicle).

1.2 Business Needs

Having a common service layer simplifies application development allowing the application developer to focus on the application rather than the communication and management of devices. According to the Beecham report, the value for such a service layer is several 10s of billions of dollars. The picture below from that report has been presented in the M2M Landscape team work.

Figure 4.25: Overall M2M Revenue Streams Worldwide
(\$millions)



Source: Beecham Report, 2008

Figure 1: Business opportunity for common service layer

1.3 Motivation to examine Smart Grid

Concern over the environment, scarcity of resources, and safety are precipitating a universal move to re-examine the electric grid. Arising from this re-examination is the concept of the Smart Grid, which is defined as a radical evolution of the energy supply and consumption infrastructure. The Smart Grid will provide consumers and electricity producers with unprecedented levels of reliability and control while reducing the adverse environmental impact of energy generation and consumption.

1.4 Motivation to examine Connected Vehicle

Increasing urban density and concomitant traffic congestion are motivating considerable attention towards the creation of a fully connected transportation system. A fully Connected Vehicle infrastructure will address vehicle safety, vehicle mobility (real-time data), and environmental applications. Drivers will experience improved driving experiences arising, in part, from reduced transit times, reduced traffic congestion, and accident avoidance. Additionally, environmental impacts associated with transportation will be partially mitigated from the associated efficiencies of improved traffic flow.

1.5 Scope of Effort

The current M2M ecosystem is very complex, with many different vertical market segments – both known and unknown. Each vertical segment has different, and sometimes conflicting requirements and use cases. These differences may be relative to specific legal; privacy/ QoS/QoE; as well as regional issues. Many verticals already have extensive architectures and standards. Ultimately, the implementation of these diverse “technologies” representing the current M2M landscape are for the most part not seeking to reduce the overall complexity required by transport/delivery/provider networks.

Unique/diverse characteristics of existing M2M applications and their data traffic have prompted a number of standards bodies to develop M2M-specific enhancements. E.g., 3GPP/3GPP2 application agnostic work on optimizations for machine-type communications. Application-specific service layers have been developed. There is a need to harmonize these activities and seek to define a common service layer. Without such an effort, networks around the world will face insurmountable challenges in the very near future.

The figure below describes the traditional view, and the view that the ATIS M2M Focus Group is endeavoring to describe.