**Industry-wide collaboration is key if the IoT is to grow**

*By Fran O’Brien, Ph.D. , oneM2M’s Steering Committee Chairman*

While the eventual scale of the Internet of Things (IoT) is unknown, one thing that experts agree on is that it is going to be huge. Gartner, for example, predicts that there will already be more than one connected device in use for every person on the planet by the end of 2017. While the IoT is already making a difference across all walks of life, the global benefits it can deliver will not be fully realized until the market matures.

To reach the level where the convenience and efficiency of the IoT will transform lives, collaboration across the industry is essential. The pace of development at the moment is frenetic, with global players all pursuing the end goal of a ubiquitous solution – but the speed of deployment will only be sustainable and the economic promises of widespread IoT realised by working together to share best practice and lessons learned.

Industry-wide collaboration through standardization efforts is already ensuring the market does not fragment and wide-scale deployments are not plagued by interoperability issues and vendor lock-in, but there is more to do. Progress was recently made at an IoT Industry Day hosted by oneM2M, the global standards initiative that covers requirements, architecture, API specifications, security solutions and interoperability for Machine-to-Machine and IoT technologies. At that meeting, representatives from oneM2M, the Zigbee Alliance, Open Connectivity Foundation, the Industrial Internet Consortium (IIC) and the Thread Group came together to work towards increased collaboration. Following this, the IIC reached a memorandum of understanding with oneM2M to work together to prevent fragmentation and further advance the Industrial IoT (IIoT) through joint IoT use cases and architectures.

**Better together**

The most obvious advantage of standards work is that it leads to interoperability. As the number of IoT deployments increases globally, so does the complexity of the wider ecosystem, making interoperability essential. Bringing together billions of connections – many of which do not incorporate a human interface – makes interoperability incredibly complex, with authentication and security paramount. However, if these devices communicate via a common language, the industry will have the run of a much larger ecosystem from which to base future deployments.

A common set of standards and protocols to work from significantly reduces duplication of efforts from vendors and service providers, which can base their platforms on best practices and get their solutions to market quicker, accelerating deployment and improving economies of scale.

**Standards are the solution**

The good news is that work to produce the detailed specifications required has been underway for some time, with major companies, such as HPE, Interdigital and SK Telecom, deploying oneM2M’s global standard. The standard is continually evolving, with the latest release tackling the need for a common IoT Service Layer that can be readily embedded within various hardware.

oneM2M’s technical specifications address the need for a common M2M service layer which sits between M2M applications and communication hardware and software that transports data. The layer is software-based and provides functions that M2M applications across different industry segments commonly need, which are then exposed to applications via APIs, allowing for distributed intelligence.

One of the key benefits of Release 2 – the most recent iteration of the specification – is that it enables interworking with popular IoT device ecosystems such as AllSeen Alliance, Open Connectivity Foundation and Open Mobile Alliance Lightweight Machine-to-Machine, allowing legacy systems to be upgraded without needing to be completely overhauled. oneM2M’s standards do not work in isolation, and it is only through collaboration with other ecosystems such as these that it can help the IoT reach its full potential. Many of the current standards and technologies are designed to complement each other’s operations rather than compete with them, which will strengthen the IoT going forwards.

Working collaboratively across the verticals will build up a more holistic ecosystem for the IoT, particularly for the growing number of deployments that are being made for the IIoT, where many of the devices and sensors will not be user-facing. This area is currently a real growth spot for the IoT and the wide variety of stakeholders that could potentially be involved in these industrial applications illustrates how collaboration is urgently needed to further the development of the technology.

**The network of the future**

Looking forward, an important thing to bear in mind is that while the growth of the IoT is rapid, there is still a distance to cover. Wide-scale deployments and nationwide IoT networks are very much in their infancy, but progress will be accelerated if collaboration between the major players is front and centre.

Industry bodies have a key role in enabling and encouraging the advancement of the IoT industry through standards, but the reality is that we are only ever going to see the full potential of what the IoT can do if the key players – be they vendors, service providers or standards organisations – are pulling in the same direction.

Work to that end is already being done through collaborative agreements and discussions between oneM2M and other industry bodies. The IoT is a rapidly-growing market, and complete, interoperable solutions will be essential to maintaining this momentum. With standards-based solutions, customers are given access to an eco-system of multiple solution providers. This is the only way to ensure multi-vendor interoperability and supplier choice and, therefore, deliver on the actual promise of IoT.