

Next Steps for the Web of Things, Part 1: Identifying and Understanding the Focus Market

Eric Siow and Michael McCool, Intel

Abstract

Specifications of the initial WoT building blocks have now been published. However, it is not enough to have published a standard: it needs to be adopted into real products and deployed in real applications. Large scale implementation of WoT and commercial success in IoT is difficult because the IoT is not a single market. It is comprised of many different markets with different customers each with different use cases and requirements.

Beyond the challenges of heterogeneous market segments, the WoT work has been focused on purely technical problems but has made little effort to rally ecosystem alignment. A holistic approach to standardization requires rallying key stakeholders to implement a single standard or a set of complementary standards that provide a whole solution to the identified market.

We propose to divide our discussion of the next steps for WoT into two parts. In the first part, we will discuss problem statements and high-level strategic approaches to solving them. In the second part (covered by a separate position paper) we will discuss technical areas and directions that WoT and W3C should pursue moving forward to execute these strategies.

Problem Statement and Potential Solutions

We will use the set of problems facing the Smart Cities market segment to illustrate and highlight the broader challenges in the IoT landscape. Our goal is to stimulate a collaborative discussion on a way forward for WoT and the W3C, and to synthesize a broad strategy that leads to both technical and market success.

Smart Cities and IoT in general face the following challenges. For each of these challenges, we propose and will discuss a possible strategic response:

- Heterogeneous segments with different use cases, requirements and customers:
 - Align with and rally around a “focus” vertical segment that resonates with the key stakeholders.
- Disconnect between the end customers and the standards setting communities:
 - Enroll the end customers in supporting standards.
 - Simplify it for them.
- Thicket of standards confusing the market:
 - Identify what really matters.
 - Consolidated standards are needed in the areas of discovery, data management, and interoperability.

Focus Market

In order for the Web of Things (WoT) to be successful, specifications such as WoT Thing Descriptions need to be supported by a significant fraction of IoT devices and services. By aligning and focusing on a specific target market, we (a) ensure that all the requirements for that market are met and (b) focus our

outreach and marketing effort towards adoption by that market. Here a “market” is defined as a set of customers with common requirements.

Engaging with the Community

A market is a community where the customers reference each other and share solutions. A standard will not be adopted, no matter how good it is, if it is developed while disconnected from the end customers. We need to ensure that our strategy includes engaging with end customers and ensures that their voices are heard. We need to simplify adoption for them while solve their most pressing problems.

Standards Thicket and the Need for Consolidation

There are currently multiple standards in the market for the same thing, as well as standards that overlap in functionality. This thicket confuses the market and slows deployment. Whenever possible, we should seek to consolidate and simplify standards. Such consolidation may require reaching beyond the bounds of a single standards organization.

Conclusion

The WoT is broadly applicable. However, to achieve adoption we need to focus our activities on specific markets and engage with the stakeholders in that market. We need to ensure that we succeed by fully satisfy the needs of a least one market rather than failing by only partially satisfying several markets. Once we have achieved success in an initial market only then should we expand to adjacent markets. We need to address the real needs of end customers, involve them in the development of appropriate standards, and make adoption as simple as possible. Finally, we need consolidate multiple overlapping standards whenever possible.