

Challenges in the Wide-scale Deployment of IoT

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IoT represents a unique opportunity for system wide innovation across multiple industries. Its effects will be as profound as the internet itself. As internet technology has proliferated across industries, and created new industries, there are lessons to be learned which incorporated in to the system architecture of IoT will accelerate its adoption and deployment. There are three specific challenges we must address:

- 1) Security – As sensors become ubiquitous and devices (cars, medical devices, household appliances, home security systems etc.) are connected, there is a significant risk of abuse and damage because of in-appropriate security and vulnerability management. Industries that have not dealt with internet security issues now have to become acutely aware of managing security and intrusion.
- 2) Network Management – As more devices and sensors are connected, inappropriate architecture can end up creating congestion on precious network bandwidth.
- 3) Business Model – The enormous potential of IoT must create multi-billion dollar enterprises. One inhibitor to the creation of such enterprises is the close attention to business models for the deployment. The ecosystem must develop to provide variety of capabilities to design, build, manage IoT related processes.

This paper will highlight the risks and potential solutions for addressing these challenges. These are architectural and policy issues that need to be studied and incorporated into practice urgently.