



dives into IoT



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The Internet of Things (IoT) is still nascent and faces numerous hurdles. Intel is focusing on aggressively expanding its IoT footprint and has launched a platform for establishing an interoperable IoT ecosystem. Brian McC Carson, Senior System Architect & Senior Principal Engineer of Intel's Internet of Things Group (IoTG), outlines this platform's features, applications, and the state of the ecosystem in general.

By Linda Xu

Addressing an urgent need

WinWin: At the end of 2014, Intel unveiled its IoT platform to coordinate and manage the connectivity and security of networked devices. Can you briefly introduce it?

Brian McC Carson: The Intel IoT platform has a number of outstanding features, which I think may make a very competitive offering in the marketplace. The first is that Intel promotes complete end-to-end security at both the hardware and software level. Second, Intel's IoT platform is designed with a building-block approach to IoT, so that it can interoperate through open standards with other ecosystem partners like Huawei to be able to go to market together and promote security, interoperability and manageability of end-to-end IoT solutions.

WinWin: What kind of impact will this platform bring to the entire IoT industry?

McC Carson: We're working closely with some of the largest corporations in the world to make sure that the way the Intel IoT platform is structured promotes interoperability through open standards and works seamlessly with a variety of ecosystem partners' ingredients, so you could easily connect to a variety of different third-party clouds. Through the Intel IoT platform, you could integrate with a variety of different companies' sensors. If a partner company chooses to cooperate with third-party developers through RESTful APIs, they can

use their devices, hardware and software assets in cooperation with the IoT platform as well. In addition, you have a broad ecosystem through consortiums like the Industrial Internet Consortium (IIC), and the Open Interconnect Consortium, where you literally have hundreds of the world's largest companies coming together to try to build reference architectures that will promote interoperability and improve time-to-market in the IoT marketplace across a variety of different market segments. Hundreds of other companies that have joined these consortia are creating an ecosystem to identify what are the right standards we need and what are the ways that we can make IoT deliver the promises that everyone is expecting of USD20 trillion of revenue by the year 2020. And we are designing the Intel IoT platform to work closely with those reference architectures that are coming out of those consortia and being standardized.

WinWin: Can you share with us any success applications of Intel's IoT platform?

McC Carson: One of the most exciting are the breakthroughs in transportation with fleet management. We can work with companies that are in the business of managing large fleets of vehicles, whether they are taxi cabs or large industrial equipment transportation vehicles. We use our IoT platform to help businesses enhance fuel economy, improve the time it takes to deliver goods, and engage with drivers in new ways to make them feel like they're a part of the way the business operates.

Other areas are in building management. We can help building management companies monitor how the heating ventilation and cooling equipment operate in buildings, and optimize the maintenance and service of those units to improve the efficiency of how they operate. Depending on the number of occupants coming into a building, you can use only as much energy as you need to keep those occupants comfortable, and maximize the efficiency when you get off that unit by shutting it off rather than just doing a traditional time-based schedule.

Ecosystem efforts

WinWin: As IoT has pressing issues of security, connectivity, data processing, analysis and manageability, what kind of technology and service ecosystems are needed?

McCarson: There are a number of breakthroughs for the ecosystem in security manageability and data interoperability for IoT. Intel is able to provide a few key technologies like whitelisting and identity protection in those areas. You can have identity protection on devices where each chip itself has its own unique ID. As soon as a chip comes alive in an IoT ecosystem, you know exactly whose device that is. Since you can't change that device ID, rather than having to guess what that device is, you know exactly which ones are yours, which can help improve the security and manageability of those devices. Those are just a couple of examples of ways to accelerate the scale and time-to-market for IoT.

Lite on our feet

WinWin: At HNC 2015, Huawei showcased its commitment to vigorously developing the IoT market and launched its IoT operating system, LiteOS. What expectations or comments do you have concerning our collaboration in the IoT arena?

McCarson: There're many features about LiteOS that I think are excellent, and the open nature of the OS is very impressive. I like the fact that Huawei is trying to make sure that they're creating an environment that makes it easier for developers to innovate. And when I think about the Open Interconnect Consortium and the way this consortium can try to help with machine-to-machine and peer-to-peer communications, I can see Huawei's LiteOS benefiting from that. When I think of Huawei's technologies and the collaborative ecosystem that Huawei has developed and the technologies that Intel can bring to market with Huawei, I see so much opportunity for growth for both companies and the entire ecosystem, and that it's exciting for me. [www.intel.com](#)

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