



## MARKET NOTE

# Hsinchu City to Roll Out Smart City Acceleration Program with Asus OmniThings Cloud

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## EXECUTIVE SNAPSHOT

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### FIGURE 1

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#### Executive Snapshot: Hsinchu City to Roll out Smart City Acceleration Program with Asus OmniThings Cloud

This IDC Market Note highlights the recent government project in Taiwan, where the Asus OmniThings Cloud platform is selected for the Smart City acceleration program of Hsinchu City.

#### Key Takeaways

- Phase one of the smart metering project is underway, with the Asus Smart Home solution expected to be deployed in 1,000 selected households islandwide.
- The solution provides detailed household energy consumption reports to both organizations and residents to enable them to understand energy usage by the minute and the type of home appliances.
- Phase two of the project is expected within two years and will leverage Asus' partnership with IBM Watson, which will focus on data analytics to drive insights and innovation.

Source: IDC, 2017

## IN THIS MARKET NOTE

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This IDC Market Note highlights the recent city government project in Taiwan, where the Asus OmniThings Cloud platform is selected for the Smart City acceleration program of Hsinchu City, home to hundreds of high-tech companies and regarded by many as Taiwan's center of technology education, innovation, and incubation.

The acceleration program targets to encourage and onboard tech entrepreneurs to come out with viable internet of things (IoT)/Smart City innovations. The first phase, which started in 2017, involves deploying the Asus Smart Meter Gateway to selected households throughout the island to route the meter reading of household energy consumption to Asus OmniThings Cloud in real time so that both organizational and residential users can have minute-level reports of energy consumption.

The second phase of this project, which is expected to start in two years, will focus on data analytics. In May 2017, Asus and IBM announced a collaboration that would see Asus use the cognitive application programming interfaces (APIs) from IBM Watson and make them available on the Asus OmniThings Cloud to further enable the innovation community to convert the collected data sets into exciting insights. API accesses with volume lower than the assigned quota will be provided free of charge for experimental users to effectively lower costs and encourage broader innovation.

Asus's uptake on Smart City does not stop here. A larger scope, including smart healthcare and smart transportation, will be rolled out in the coming years, evidence that businesses and the government of Taiwan are firmly progressing toward a digital economy underpinned by active IoT ecosystems and verticalized data platforms that can scale to the global stage.

## IDC'S POINT OF VIEW

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IDC predicts that US\$1 trillion will be invested in Smart Cities in Asia/Pacific by 2025. Some of the focus areas would be smart grids for electricity, smart buildings, and smart homes that target to optimize energy consumption efficiency. Having to ensure continuous economic development and improvement of residents' living standard, a few of the major cities in this region could not take the risk of not doing anything. Many of them are thus scouting technology vendors and partners to roll out Smart City projects based on the following criteria:

- Those who can offer a solid business model to justify technology investment
- Those who can offer a specialized IoT platform to incubate and accelerate open innovation
- Those who have a proven ability to pull together a use case specific and scalable IoT solution
- Those who have a clearly defined IoT product road map that covers connectivity, platform, analytics, and applications

The smart metering project of Hsinchu City offers an example of all the aforementioned criteria: a platform business model is in place to accelerate execution; open IoT data is provided to fast-track innovations; various partners are drawn together to engineer a use case and develop a scalable solution; and a progressive road map is planned to address multiple attributes of an IoT system.

## Fast-Paced Smart City Initiatives by a Platform Business Model

Taiwan is dependent on imported resources, such as fossil fuels, to meet 99% of its energy consumption needs. A 20-year Smart Grid Master Plan has been running since 2011, with a vision to

establish a high-quality, high-efficiency, user-oriented, and environment-friendly power system. Smart metering, as part of an advanced metering infrastructure (AMI), is a pivotal part of this master plan, targeting to provide closer to real-time information on household-level electricity consumption and, in doing so, encourage residents to adopt moderated and more sustainable ways of using energy.

Hsinchu City is among the pioneering cities of Taiwan in the adoption of Smart Meter/AMI. By connecting its critical infrastructure with the Asus Smart Meter Gateway, electricity consumption data from each participating home will be communicated to the cloud. The data will be collated, analyzed, and disseminated to key stakeholders, such as utility service operators, energy policy reviewers, and residents to take actions accordingly, such as identifying sources of waste or inefficiencies, optimizing the energy supply on a micro level, and drafting a targeted subsidy plan.

For Asus to be part of this Smart City project, it not only signifies that the company is making headway in the execution of its smart home/IoT strategy but it also exemplifies the advantage of having in place a platform business model that would help accelerate and bring to reality Smart City initiatives. IDC's view is that although most governments grasp how IoT and Smart City projects can be strategically transformational, cost concerns are likely to curb larger-scale adoption in many cities of Asia/Pacific (excluding Japan) (APEJ).

With a cloud platform business model, Asus OmniThings Cloud will open up the Smart Meter/IoT data collected to attract new value-add digital services, encourage consumer-facing application innovations, facilitate data-driven value co-creation between two or more user groups, and promote the development of a digital economy.

## **Specialized IoT Platform to Foster Innovation**

The Asus OmniThings Cloud Platform is tailor-made for IoT applications, in which storage, indexing, and querying are specialized for time series data. The platform consolidates the device connectivity layer, the data lake, computing and analytics, security management, and the application integration layer to quickly onboard new users. As a result, deployment of a new IoT application can be completed within one day.

In the scope of this acceleration program, Asus will provide a sandbox service that covers access to the user community, sample codes to integrate IoT devices, and regular training sessions. These aim to fast-track IoT solutions development learning and lower the cost of experiment. The API platform provides connection, storage, and management flexibility that matches the needs of tech start-ups.

In addition, the platform should open up free data access, for example, the anonymized smart metering data of Hsinchu City and IoT device data submitted by applications running in test mode, to a larger research and innovation community: the start-ups, Asus' partners, research organizations, and so forth. Hackathons will be run regularly to gather around technology enthusiasts to contribute, explore, and validate their ideas.

Together, the platform, the sandbox service, and the open IoT data are to provide the necessary boost to transform the companies and talent communities with high-tech device manufacturing and design background toward a future of pervasive connectivity.

## ***Effective Partner Ecosystem to Scale the Use Case-Specific Solution***

Although opportunities are abundant in the IoT world, it is important to note only a few IoT undertakings can be achieved by a vendor working solo. A partnership is required to provide a

comprehensive solution for end users to clearly see the benefits. In this smart meter project of Hsinchu City, the common Taiwan Smart Energy Industry Association (TaiSEIA) standard, which has been promoted by the Bureau of Energy, Ministry of Economic Affairs, allows different vendors to effectively form a partner ecosystem, including home appliance manufactures, embedded system providers, cloud platform providers, and telcos.

With the support of the ecosystem, Asus has come up with a two-prong solution for the use case of electricity consumption management in the urban households. The smart metering solution primarily addresses organizational needs for efficient management of electricity usage, and the smart home solution encourages adoption among consumers with the promise of increased levels of convenience. The two parts can also function independently. A home with only the Asus Smart Meter Gateway installed can access the household-level metering report using the tablet device provided or via cloud services, whereas a home with only the Asus Smart Dongle connected to home appliances allows users to conveniently control them through an app on a mobile phone.

To receive the maximum benefit, the two parts need to work together. The Asus Smart Dongle feeds consumption data to the Asus Smart Meter Gateway and further to the OmniThings Cloud, in which the data is consolidated and, in turn, generates analytics services, providing compliance-level transparency and helping residents consciously adopt more energy-efficient consumption behavior. On top of this, it has also become possible for smart home devices to communicate with each other autonomously, resulting in greater efficiencies in the usage of appliances. For example, a smart thermostat product can control a smart air conditioner entirely on its own.

Aided by the nationwide industry standard, the growing partner ecosystem, and the pervasiveness of cloud platform, the Asus Smart Meter/Home solution offers the necessary scalability to reach to more urban populations beyond Hsinchu City to help big and small cities to readily replicate and provide intelligent metering and smart home services to their residents and organizational stakeholders. With future demand growth in mind, Asus OmniThings Cloud also supports multitenancy, private cloud, and hybrid cloud with datacenter deployment in Taiwan, Europe, and the United States.

### ***A Progressive Road Map Opening Up to Many Possibilities***

This Smart City acceleration program of Hsinchu City is in line with the market trend that many digital technologies, including IoT network, edge devices, advanced analytics, machine learning, data as a service, and so forth, are increasingly converging. Vendors that can address the multiple attributes of an IoT system, including connectivity, platform, and analytics, will have a competitive advantage to drive operation efficiency and new revenue generation.

Earlier in May 2017, Asus formed a strategic alliance with IBM Watson. The significance of this collaboration will surface more prominently in the second phase of the project road map, during which the cognitive computing capability of IBM Watson will allow the IoT data collected in Asus OmniThings Cloud to be better utilized, contextualized, and personalized. For example, there will be a future when an air conditioner makes its own cooling or heating decision intelligently by taking into consideration the cost of electricity, preferred temperature range of the residents, the real-time weather conditions of the location, and the load level of the grid. It is a future with many possibilities.

As such, cognitive applications, when combined with IoT/Smart City platforms, will truly unlock the value of big data. They will enable behavior change in a positive way and promote the making and adoption of energy-saving appliances and increase flexibility and adaptiveness of pricing schemes, ultimately leading to a more stabilized grid even during peak seasons.

IDC predicts that by 2018, investments in operational sensing through IoT and situational awareness via analytics will deliver a 30% improvement in critical process cycle times, and by 2019, all IoT efforts on the application layer will merge streaming analytics with artificial intelligence (AI) and machine learning to increase the agility and robustness of IoT investment. The Taiwan government–led Smart City initiative is an effective means to promote and maximize the value of IoT technology. Within the next five years, almost all major cities in the world will work to establish Smart City–related capabilities, and many of them would not have the resources to manage the sensor networks and address the needs from integration and security, to streaming analytics and AI, and as such, it is an exciting time for pioneering platform providers, such as Asus. The project with the government of Hsinchu City could present a strong reference case of how a carefully planned IoT investment can pivot the development of a major city, and the implications can spread beyond the technology world.

## LEARN MORE

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- *IDC FutureScape: Worldwide Big Data, Analytics, and Cognitive/AI 2017 Predictions – APEJ Implications* (IDC #AP42148017, January 2017)
- *IDC FutureScape: Worldwide Smart Cities 2017 Predictions – APEJ Implications* (IDC #AP42262617, January 2017)
- *IDC FutureScape: Worldwide Internet of Things 2017 Predictions* (IDC #US40755816, November 2016)

## Synopsis

This IDC Market Note highlights the recent city government project in Taiwan, where the Asus OmniThings Cloud platform is selected for the Smart City acceleration program of Hsinchu City. The project could present a strong reference case of how IoT investment can pivot the development of a major city, and the implications can spread beyond the technology world.

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