Digital Revolution Summit

The Six Forces Driving the Internet of Things

Advancements in information and operational technology are driving the next industrial revolution

At this year's World Economic Forum in Davos, founder Klaus Schwab postulated the idea that we are witnessing no less than the fourth industrial revolution. IoT is a key part of this revolution, noted Mohamed Kande, PwC Global Advisory Leader for Technology, Media and Telecommunications, as he wrapped up the Digital Revolution Summit.

In this revolution, technology moves from being a sector to being a megatrend, kind of a tidal wave that affects everything in its path. Kande cautioned, though, that obstacles remain. Because people will have to trust the data that the IoT generates, vendors must ensure cybersecurity.

What else does this tidal wave encompass? Like the technology and connectivity it combines, the IoT represents ubiquity – and immediacy. The last time we saw such a disruption in both industry and society was in 1995 when cell phones became popular. That unleashed myriad a new of business models and industries, and the world is facing that same kind of disruption now.

For more information

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For vendors, service providers, and others, the opportunity is widespread. Every industry vertical can benefit from IoT, from the public sector (everything from traffic control to garbage pickup) to the private sector (logistics, transportation, healthcare). The industry with perhaps the biggest immediate opportunity is manufacturing, where legacy companies are embedding sensors in everything from jet engines to oil rigs in order to better monitor devices and extend customer engagement. Hence, we'll be hearing more about the industrial IoT.

In addition, the opportunity for vendors is highly differentiated. While being a platform provider will bring the most value, some vendors will sell products, others will sell services. Others will aggregate and analyze data. As with many technologies, unexpected capabilities may blossom and create other opportunities (when PCs were first created, no one expected them to be networked, but now we take it for granted).

But at the same time, the challenge for vendors tackling the IoT market is also vast. Companies must also understand the operational element of IoT; that is, how to take the onslaught of data and tame it, from analysis to monetization. The opportunity is so vast that no one company will be able to do everything, forcing companies to participate in ecosystems and hone their partnership and collaboration skills. Beyond the ecosystems, companies will also have to manage customer expectations, especially around the ownership of data.

Kande identified six simultaneous technological trends within IoT, all of which are combining to push the IoT market to the tipping point that's currently driving the market:

The decrease in the cost per CPU memory and storage makes the collection of big data and subsequent analytics possible.

Devices such as sensors have proliferated, without which IoT opportunities cannot be realized.

The decreasing cost of megabytes increases the amount of money available for investment in large processing systems.

Cloud and big data offer elastic repositories for storing and analyzing the onslaught of data.

The convergence of information technology and operational technology are coming together to create a new revolution.

The Internet world is colliding with the industrial world to create unprecedented opportunities.

Kande reiterated that based on the confluence of these trends, the IoT will have the impact of the cell phone, except for one difference. It's potentially bigger.

Three Key Points

- With the IoT, we are witnessing the fourth Industrial Revolution, which will affect multiple sectors.
- Vendors and service providers still have a lot to learn about how they can contribute to and benefit from the IoT; collaboration will be crucial.
- The six technology trends driving IoT include the decreased cost of memory, storage, and processing; the increase in sensors; cloud and big data, and the convergence of the Internet and industrial networks.