THE INTERNET OF THINGS

PRACTICAL USE CASES AND THE CLOUD

THE INTERNET OF THINGS

PRACTICAL USE CASES AND THE CLOUD

Over the next 10 years, the Internet of Things will drive $14.4 trillion in corporate revenue. Read on to discover three real-world use cases for smart devices and how the cloud is a key enabler.

THE INTERNET OF THINGS
THE MOST DISRUPTIVE SHIFT
SINCE THE ADVENT OF THE INTERNET

Consumerization brought the issue of the growing use of personal mobile devices within the enterprise to the forefront of 21st-century business IT. With the rise of the Internet of Things (IoT) -- the technological trend some analysts call the most disruptive shift in IT since the advent of the Internet itself -- smart technologies will continue to complicate security, privacy, and regulatory issues. To bring practical value-added solutions to fruition, companies need to adopt a realistic approach to use Web-enabled smart devices and the IoT within the enterprise.

MISSION POSSIBLE

Manufacturing   **Healthcare**   **Automobile Industry**

Much of the hype surrounding the growth of smart devices from previously "dumb" nodes takes a theoretical, future-focused perspective. Enterprises today need to take a realistic approach to the development and deployment of IoT solutions. Highlighting promising use cases that are already in place in today's technological landscape places the hype surrounding the IoT in context.

One discipline that continues to show promise with smart technologies is supply chain logistics and asset tracking in general. Depending on an organization's market position, the IoT can have several interpretations that only add additional layers of complexity to potential use cases.

The manufacturing industry is among the first to take advantage of the remote tracking, controlling, and routing functions enabled by smart sensor nodes and devices that use machine-to-machine connectivity. Tracking assets remotely -- and most importantly, with accuracy -- while maintaining information security across the entire signal path via the Web can yield operational and cost benefits that bring value-added solutions to life. Improving visibility into and the capability to fix supply chain quality issues alone can optimize cost of quality greatly for manufacturing enterprises.

Another use case of IoT solutions focuses on the healthcare industry and its integration with real-time monitoring technology. Given the anticipated acceptance of "always on" medical monitoring devices over the next decade, the IT disruption that smart devices will cause can actually be beneficial to healthcare providers. In 2013, the field of healthcare IT is in the midst of a fundamental shift that directly relates to the way providers will deliver healthcare in the US.

Several provisions of the Affordable Care Act of 2010 in fact mandate the use of technological solutions to drive efficiencies and cost savings in the delivery of healthcare. Transitioning to a standardized system of electronic medical records is just the starting point; integrating this data with smart devices and embedded sensors to automatically alert doctors and patients of medical issues in real time is the next logical step.

A third use case for IoT technologies over the near term takes shape in the automobile industry. The viability of self-driving cars is still many years away from reaching mass adoption, but as a groundwork for this level of automation, automobile manufacturers are already embedding more remote sensors than ever before in their vehicles. Soon, remote

1

THREE REAL-WORLD USE CASES FOR THE IoT IN ENTERPRISE

IIS
TECHNOLOGY

MISSION POSSIBLE

monitoring of automobile maintenance schedules and communicating real-time performance data via the Web will become more commonplace in new vehicle models. Over the next five years, according to experts Kaivan Karimi and Gary Atkinson, cars will feature 50% more embedded smart sensors than today's "dumb" automobiles.

ENTER THE CLOUD AS A TACTICAL DEPLOYMENT FOR IoT SOLUTIONS

Embedded processing technology is key to the evolution of smart devices. The tactical issues of deploying the best infrastructure to realize the enormous revenue potential of the IoT relate to how services will be delivered to accommodate economies of scale. Over the next decade, from 2013 to 2022, smart devices and the IoT will encompass $14.4 trillion in potential revenue for enterprises, according to a landmark report published by Cisco in 2013.

OVER THE NEXT DECADE **SMART DEVICES AND THE IOT** WILL ENCOMPASS **$14.4 TRILLION** IN POTENTIAL REVENUE FOR ENTERPRISES

Two schools of thought are emerging with respect to the best tactical deployments of how to deliver solutions tailored to align with the evolution of smart devices. First, processing data locally with microcontrollers (MCUs) and flash memory is one of many possible tactics. But to control costs and improve agility, a cloud-based deployment is a very attractive option. To handle the anticipated exponential explosion of smart devices and nodes, cloud solutions -- and their scalability -- become an agile, cost-effective option for enterprises discussing improvements to enterprise architectures.

HP Cloud OS, an OpenStack-based converged cloud management platform, has the capability to handle a cloud-focused IoT infrastructure in tandem with an enterprise's larger cloud strategy. The security of in-transit data is key when integrating data streams via a vast array of remote sensors and devices. In a perfect scenario, enterprises would be able to leverage a private cloud deployment to ensure the integrity of data. In practice, a hybrid approach is more practical since it may be unavoidable to circumvent the public Internet. HP Cloud OS provides a platform to manage this incredibly complex hybrid, public/private cloud deployment to make the IoT a reality in the enterprise.

IoT ranks among the most disruptive forces of the future of IT in the enterprise. Today, organizations stand at a crossroads and must begin to reimagine IT architectures to be able to handle the massive influx of smart devices and their data streams. To truly glean value-added solutions from emerging IoT technologies, a hybrid cloud deployment is arguably the best approach for enterprises.