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Everything Connected: Making IoT a Reality

The Internet of Things Requires the Infrastructure of Tomorrow, Today

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The concept of a network of smart devices was recorded more than 35 years ago when Carnegie Mellon University modified a Coke machine to report its inventory and the temperature of newly loaded drinks via an Internet connection[1]. However, the term known as the Internet of Things (IoT) was not created to describe this "movement" until the early 1990s[2].

During the last few years the vision of the IoT has evolved as a result of the convergence of multiple technologies, including ubiquitous wireless communication, real-time analytics, machine learning, commodity sensors, and embedded systems. This convergence has alleviated the silos between operational technology (OT) and information technology (IT), to allow unstructured machine-generated data to be evaluated for insights to drive IoT advances.[3] The early entrants in the smart product industry ran on closed networks or relied heavily on a proprietary network of similar "things" for functionality. As technology has evolved, these smart products have become more commercially available on a wider scale.

These connected things all share a common theme—the reliance on a network. The further the network can reach and the easier it is to access, the more powerful the "connected movement" will become. The good news is that this network technology exists and it's already being implemented across the globe, although the full potential of the IoT will not become a reality until 5G networks are fully built. As seen today with the general adoption and ongoing implementation of 4G/LTE networks, it won't be long until 5G networks become the new normal. So all carriers, regardless of size, need to prepare their infrastructure today to support the networks of tomorrow. Those who don't plan now will likely be unable to compete as the technology advancements of the Fourth Industrial Revolution evolve.

Best practices for IoT are already being discussed, standards are being developed and the ecosystem is being built. While not every detail is known, what we do know is that the IoT needs the Cloud in order to store and process the multitudes of data it requires. The latest Cloud Index Report from Cisco confirms that cloud services are accelerating in part by the unprecedented amounts of data being generated by not only people, but also machines and things[4]. Those carriers that haven't started their path to the all-IP network may still have time, but that window of opportunity continues to get smaller every day.

Cloud infrastructure and virtualization is the smartest and simplest way for carriers to ensure their path towards 5G, IoT and beyond, while enabling the quick delivery of new in-demand subscriber services like Rich Communication Services (RCS). In addition to enhancing subscribers' messaging experience, RCS also incorporates smart technology that provides a path to future monetization through MaaP (Messaging-as-a-Platform). MaaP will transform today's closed messaging systems into an open 'platform' ecosystem from which a range of services will be built using Chabots, Plugins, Artificial Intelligence (AI) and other applications[5]. The challenge for carriers will be seizing the opportunity. To begin the path towards advanced IP service offerings, carriers must first deploy the IMS core infrastructure. Fortunately, this new infrastructure also is available in the Cloud and can be launched today to quickly enable new IP services, while providing time for carriers to prepare a business strategy for IoT and the network services of tomorrow. There's a reason why dreaming is characterized by "having your head in the clouds," and for today's competitive carrier, there's no better place to be!

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Interop Technologies™ is a leading provider of advanced communication networks and cloud-based managed services. The company was founded in 2002 to provide the mobile industry with better ways to quickly launch and manage next-generation communications. Featuring scalable architecture and flexible deployment options, Interop has helped communication service providers worldwide reduce the cost and complexity of deploying new communication technologies. (www.interoptechnologies.com) cca

1 "The "Only" Coke Machine on the Internet". *Carnegie Mellon University*. Retrieved Aug. 11, 2017.
2 Mattern, Friedemann; Floerkemeier, Christian (2010). "From the Internet of Computers to the Internet of Things" (PDF). *Informatik-Spektrum*. 33 (2): 107–121. doi:10.1007/s00287-010-0417-7. Retrieved Aug. 11, 2017.
3 Wigmore, I. (June 2014). "Internet of Things (IoT)". *TechTarget*. Retrieved Aug. 11, 2017
4 Cisco Global Cloud Index: Forecast and Methodology, 2015–2020. Retrieved Aug. 14, 2017
5 Messaging as a Platform, The Operator Opportunity. GSMA Network 2020. Retrieved April 2017.