

Comments of

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On The
Internet of Things: Bolstering U.S. Competitiveness and National Security

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Hello and good afternoon. My name is David Coons. I am the Vice President of Software and Advanced Solutions in the Specialty Printing Group at Zebra Technologies Corporation. I appreciate the opportunity to be here today and to share my company's views on the Internet of Things. I'll start with a brief overview of Zebra Technologies and the work we're doing in the IoT space, and then I'll give a Solution Provider's view on the importance of IoT and what it means to US commercial competitiveness and technology leadership.

Zebra Technologies Corporation is a global leader in bringing Internet of Things solutions to the Business-to-Business and Business-to-Government markets. With revenues of \$3.6 billion and 7,000 employees in more than 40 countries, we are a trusted business partner of more than 95 percent of all Fortune 500 companies. We are a pioneer in creating solutions that deliver Enterprise Asset Intelligence to our customers.

Enterprise Asset Intelligence or EAI, is a growing category that describes the ability of businesses, government agencies and other organizations to have better visibility to the critical assets within their operations to know exactly what they are, where they are, and to know their condition, so they can make smarter and faster decisions that improve their bottom line. Zebra's solutions recognize and leverage the fact that people, assets and devices – especially mobile devices – are becoming increasingly connected, and that this trend is advancing at an exponential rate.

Zebra also has been a leader in advocating for the development of thoughtful IoT policy. In March, we testified before the House Energy & Commerce Subcommittee on Commerce, Manufacturing & Trade on wearable IoT-based technologies and, in May, we worked with the House IoT Caucus in creating a panel much like this one today on the topic of healthcare IoT. Most recently, we filed comments in response to the NTIA's Request for Comments on key issues related to the development of the Internet of Things. Since my company's expertise is in the area of B2B and B2G applications of IoT, I recommend Zebra's comments to anyone interested in understanding the powerful economic benefits that come from applying IoT-based technologies in those settings.

It's difficult to understate the importance of the IoT and the impact it is having on industry and government. You heard Mr. Evanhoe describe what he called "AIM Technologies" – RFID tags and

readers, bar code printers and scanners, real-time location systems, and mobile terminals. For years, these technologies have been among the most fundamental tools that give “things” – packages, containers, equipment, and vehicles – a digital identity. With the advent of the IoT, these devices are now being enhanced with additional sensing capabilities and are increasingly being connected to the internet. Some of these are directly connected to the internet, and some are indirectly connected through scanners, readers, and mobile computers. The flow of data from these sensors is beginning to permit unheard-of levels of real-time insight to the status and behavior of complex systems and processes. This visibility to operations through data allows an entirely new level of thinking about how organizations can optimize performance for competitive advantage, and it opens up new business models around how analysis and insight can be offered as a service.

A good way to measure the impact on commercial interest in IoT is to look at where venture capitalists are putting their money. Over the past three years, we have seen a 10X increase in VC funding for IoT start-ups. And it is not all in the consumer space, though consumer products like fitness monitors and smart watches, often garner the most media attention. Half of those new companies will be based on devices and services in B2B and B2G settings.

Spending by businesses on IoT technology and services is also increasing dramatically. At its 2015 Symposium and ITExpo, Gartner projected that global spend on endpoint IoT devices would be \$1.4 Trillion in 2016, with another \$250 Billion in related services, the majority of which will be spent on business applications. Surveys consistently show that IoT and cloud initiatives are at the top of enterprise investment strategies, and over 80% of surveyed firms agreed that IoT solutions will be the most strategic technology initiative for their organization in a decade. These firms represent the core of American enterprise - including retail, manufacturing, consumer products, transportation & logistics, healthcare, and government. As a B2B and B2G enterprise that serves all of these markets, Zebra's foundation in scanning, wireless LAN, and mobile computing gives us a unique perspective from which to innovate and deliver on the benefits of IoT.

Solution provider companies, like Zebra, are increasingly building strategies around the Internet of Things. In fact, we consider delivering insight from data to be the primary customer value proposition that will extend our 40-year history of technology and market leadership. Our ability to deliver on that opportunity globally hinges on being able to work within an evolving environment of connectivity and security standards.

Today there are numerous alliances and consortiums working to create standards for connectivity and interoperability. Over time, a small subset of these protocols will be adopted at scale, but in the meantime, it is most important that US companies aren't under-represented in these consortia. We should drive for adoption of open standards and avoid ending up in a situation where, for example, we need to license a technology component in order to operate in a particular country. Technology providers will design “around” closed standards, but this just adds complexity, exposes security risks, and delays the day when companies can freely compete in global markets.

History has shown that the tech industry isn't one to sit idle while standards are developed. In fact, many technology battles are won or lost before standards are even close to even being ratified. Free-market forces drive convergence. As an example of this, there is a tee shirt on display at the Computer History Museum in Mountain View, California that was produced by a network hardware supplier in the mid-70s, listing twenty-five network transport protocols that their equipment supported in order to sell into a world of developing, competing standards. Through remarkable private sector collaboration and with help from the US Government's Advanced Research Projects Agency, also known as ARPA, these standards eventually converged down to one primary protocol, known as TCP/IP, that powers the internet and most networks today. Efforts by the federal government to collaborate with U.S. companies on data security standards and the enforcement of intellectual property laws can play a key role in developing and protecting the infrastructure upon which IoT is being built. In the near term, Zebra will innovate as needed to satisfy our customers, but we are also very interested in shaping and contributing to the evolution of standards which build upon the best work done by government, industry and academia.

As with all new technology platforms, there will be challenges presented by IoT offerings that begin as an initial solution, but are then iterated and improved upon over time. Among these challenges will be the constant need to ensure the security of connected devices. One frequently cited concern relates to the rapid pace of new product introduction in the device space. As improvements are made in security and connectivity, will older products be "orphaned" in the marketplace, leaving known security vulnerabilities unaddressed?

This is an appropriate question. Keep in mind, though, that the very internet connectivity that delivers the benefits, (and creates security concerns), is also the mechanism by which security patches can be pushed out to devices at the edge. Today, 30% of car owners ignore safety recall notices - some people take the attitude that "if it's sunny today, it's never going to rain". Internet connected devices (and cars), however, will be visible on the network and will be reachable for critical security updates. Responsibility and liability around this are difficult topics that need to be addressed by policy makers, but Zebra believes that it is most important to not dis-incent providers from building in this capability, and that regulatory statutes around the world should be as harmonized as possible.

Overall, the primary policy challenge for policymakers is to foster an environment that supports the rapid development, deployment and subsequent advancement of secure IoT-enabled technologies in a manner that simultaneously addresses concerns over data security, encryption and privacy. The goal must be to encourage the rapid development and deployment of technologies which provide enhanced, secure and real-time visibility, and access to information in a way that empowers workers to undertake more effective and timely decisions and actions. It is for this reason that we urge Congress to take a thoughtful regulatory approach to governing the IoT and the countless solution applications it enables.

Additionally, Zebra urges policy makers to understand that technology and policy issues related to B2B and B2G applications of IoT may differ – at least in some instances – from issues which arise in a B2C setting, and that legislative and regulatory action should take care to identify and appropriately manage

any such potential differences. As we did with the internet in the 1990's, we need a market-driven approach that doesn't anticipate problems.

Zebra considers U.S. economic competitiveness to be directly linked to connectedness in the IoT age, both for solution providers like us and, perhaps even more so, for our customers across multiple industries. Our customers operate globally, and we are excited to help them be even more competitive by delivering solutions based on data and insight that can drive more visibility, higher supply chain efficiency, enhanced customer satisfaction, improved product quality, and better patient care. The Internet of Things is core to Zebra's strategy for delivering those benefits.

I appreciate your interest in today's overview, and I look forward to your questions. Thank you.