Testimony of Lance Donny
U.S. Senate Commerce Committee
The Connected World: Examining The Internet of Things
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Chairman Thune, Ranking Member Nelson, and Members of the Committee my name is Lance Donny. I want to thank you for the opportunity to appear before you today and share my thoughts on how connecting devices and data will enable farmers to meet global agriculture challenges.

I am the Founder and Chief Executive Officer of OnFarm, a company focused on solving the interoperability and use of devices and data in agriculture.

I grew up on my family's farm in California. I've spent more then 20 years in technology and the last half dozen leading companies in agriculture. In that time I've overseen thousands of connected devices and have studied how technology succeeds and often fails farmers.

It is clear, and the time is now, Agriculture is on the march to adopt and use technology, all of it connected, and this trend will enable farmers to make better decisions about how they grow, it will allow them to be globally competitive, it will be the driving force to meeting global food demand.

My testimony aims to highlight challenges and opportunities as we move to adopt connected devices and data:

1. as a means to increase agriculture production and profitability;
2. to help farmers afford and easily adopt technology; and
3. to advocate for smart, modern policies that spur adoption, avoid unnecessary regulation, and enable U.S. agriculture to be competitive globally.

Since the 1950s farming has doubled production through the use of supplemental nitrogen, irrigation systems, and mechanization of planting and harvesting.

But those advances, while momentous will not be sufficient to meet the growing global demand for food. By 2050 over 9.5 Billion people on the plant will require 70% more food then we produce today. We will not succeed at meeting this challenge by adding new acres, using more nitrogen or more water.[1]

Connected devices and data fundamentally change how people and industries work and agriculture has not escaped that change.

Agriculture has moved into the information age.

Data is everywhere. It drives decisions and enables farmers that adopt it to be globally competitive. In the day of $4 corn, farm prosperity will occur using technology and data as a competitive advantage against those farmers who don't.

There are two core and interconnected concepts for the Internet of Things in Agriculture. First, is the connected device itself. Today we see sensors on nearly every part of the farm: from soil moisture, to plants, equipment, and people. Sensors are the first step to better management and provide important field data, but sensors on their own will not allow the farmer to change the way they farm.

If you ask a farmer today how much data they have, you will almost always hear "too much" or "it's everywhere". This flood of data has already overwhelmed farmers. Analytics or "Big Data" software that create order and provide insights is the key to delivering the promise of the Internet of Things.

Together, connected devices and analytics give farmers the ability to monitor and use information to manage resources. And as the demand for food increases these solutions will be the tool that farmers use to help meet global demands.

In good years farmers can grow more and more efficiently. In difficult years, like the last several in California due to the drought, connected devices and analytics enable farmers to monitor their fields and to apply the precise amount of water when and where the crop needs it.

Technology studies have shown the possibilities for increasing yields by 33% while we reduce water consumption by 20%[3]. Unfortunately that technology can often be cost prohibitive. In order to ensure US farmers are globally competitive we must help farm adoption.

I support both innovation and grants that can dramatically reduce cost and increase adoption. With modest efforts we can solve these fundamental challenges. Today;

1: technology is still too costly for many farmers; we can and should support innovations and incentives that can improve adoption;
2. many farms have no broadband access and cellular coverage is unreliable; we can and should accelerate the availability of low-cost long range communication technology to ensure we can move data from the field to the cloud on every farm; and
3. I support a common sense approach to data rights such as the American Farm Bureau's Privacy and Security Principles[2] that will enable the marketplace to solve conflicts quickly and efficiently.

Technology has shown the ability to increase yield, reduce inputs, and enable more profitable and sustainable farms. If we achieve technology adoption on a wide scale, we can meet global food needs, we can help U.S. farmers maintain global competitiveness, and we can ensure the next generation of farmer is as successful as their parents' generation.

Thank you again for inviting me today, I look forward to your questions.

References

1. "Towards Smart Farming – Agriculture Embracing the IoT Vision" - Beecham Research Ltd., January 2, 2015, http://www.beechamresearch.com/download.aspx?id=40
2. "Privacy and security Principals for Farm Data" – The American Farm Bureau Federation, December 19, 2014 http://www.fb.org/tmp/uploads/PrivacyAndSecurityPrinciplesForFarmData.pdf
3. "NEEA Technical Advisory Group Report – NW Agriculture Irrigation Energy Efficiency Initiative" – Northwest Energy Efficiency Alliance, January 26, 2015
4. "10 Policy Principles for Unlocking the Potential of the Internet of Things" – Center for Data Innovation, December 4, 2014 http://www.datainnovation.org/2014/12/10-policy-principles-for-unlocking-the-potential-of-the-internet-of-things/
5. "The Internet of Things Will Drive Wireless Connected Devices to 40.9 Billion in 2020," ABI Research, August 20, 2014, https://www.abiresearch.com/press/the-internet-of-things-will-drive- wireless-connect.
6. "Agriculture Water Conservation in the Lower Flint River Basin of Georgia" – Flint River Basin Partnership
7. "Ag-Tech Challenges and Opportunities for Sustainable Growth" – Kauffman Foundation, April 2014 http://www.kauffman.org/~/media/kauffman_org/research%20reports%20and%20covers/2014/04/agtechwhitepaper_42314_final2.pdf
8. "Agriculture Gets Smart: The Rise of Data and Robotics" – The Cleantech Group, May 2014 http://info.cleantech.com/Ag-Get-Smart-Report-Submit.html