# Challenges of using sensor data across devices and brands



Jeffrey Bewley, PhD, PAS Analytics and Innovation Scientist Holstein USA, Inc.







"Cow Fitbits" and artificial intelligence are coming to the dairy farm. But some farmers aren't so impressed.

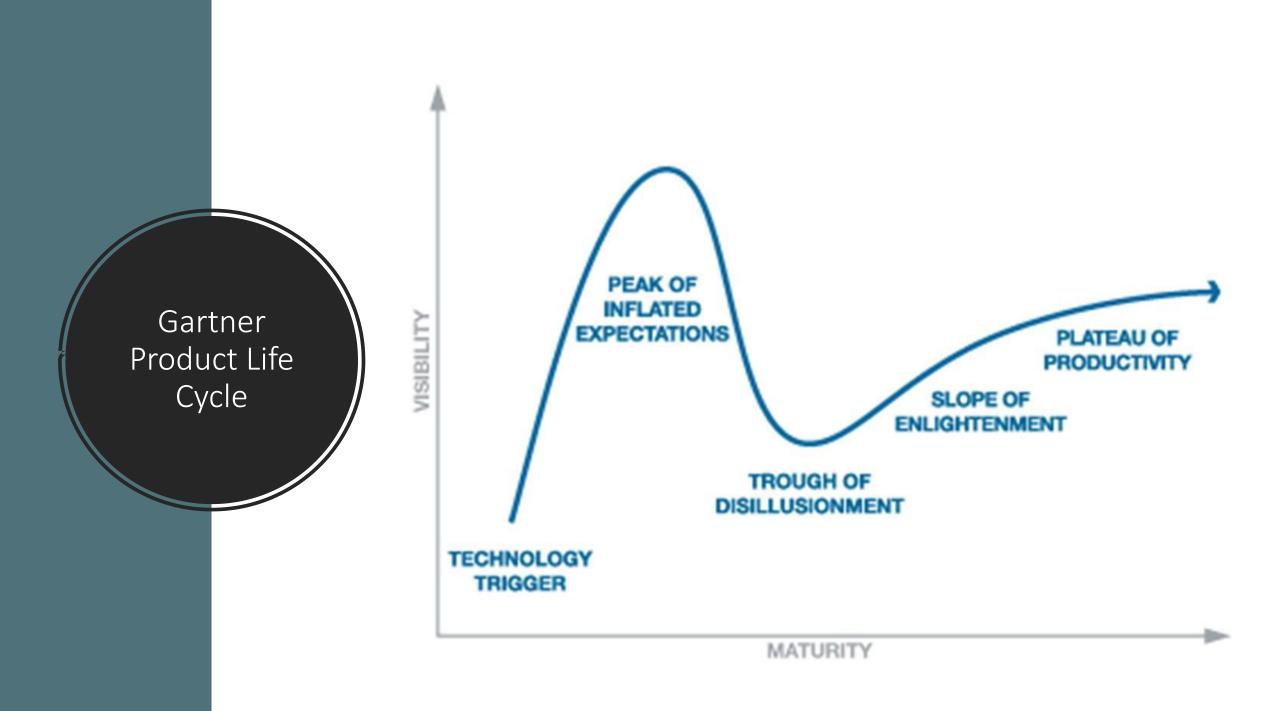


#### 'Cow Fitbits' and artificial intelligence are coming to the dairy farm. But some...

Farmers might be tackling a critical question before much of the rest of the workforce: Can new technology ever beat old intuition — even when it comes to a bunch of co... washingtonpost.com



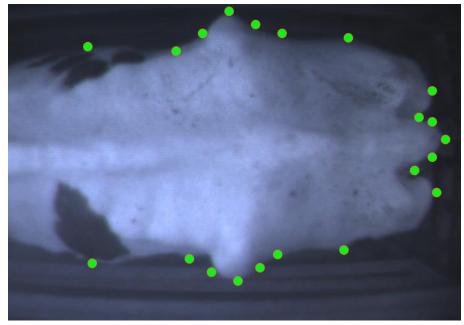
### PLUG AND PLAY?PLUG AND PAY?PLUG AND PRAY?











### 17 years/>50 technologies

A COLLABORATIVE, INNOVATIVE, LONG-TERM RELATIONSHIP BETWEEN HOLSTEIN ASSOCIATION USA AND THE WESTERN KENTUCKY UNIVERSITY DEPARTMENT OF AGRICULTURE AND FOOD SCIENCE

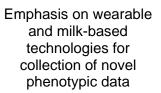




- Research, development, and outreach in technologies, analytics, and genetics
- Continued, sustained research and development projects



The industry leader for exploration of new technologies and analytics tools





#### **WKU SmartHolstein Lab**





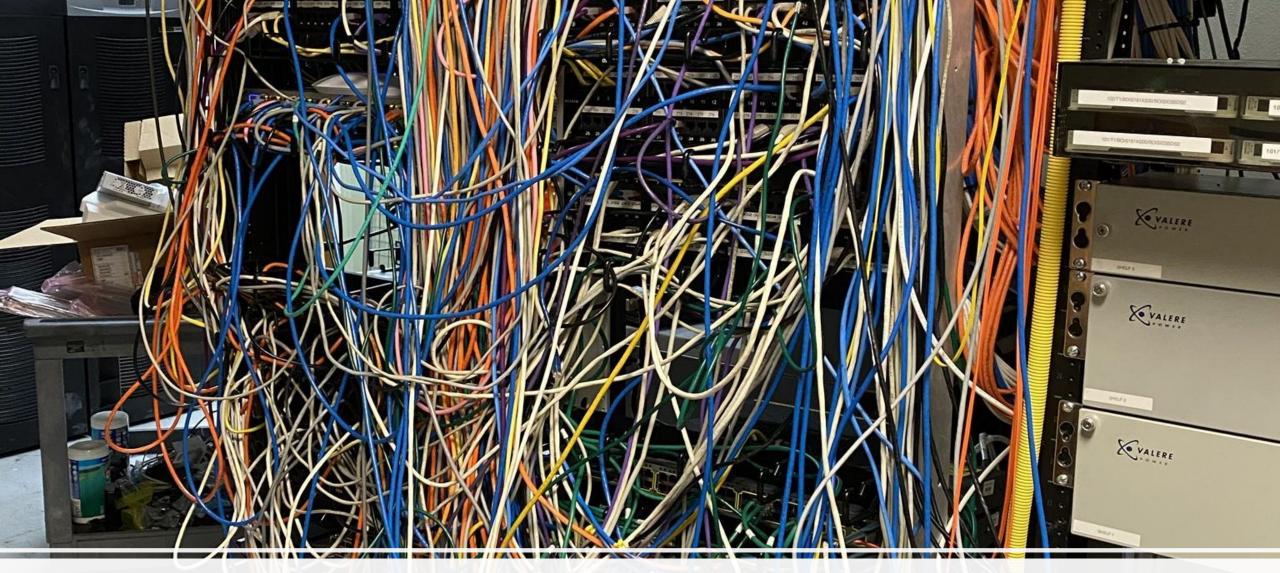




### Nobody on Team that Knows Cows

### **Physical Form Problems**





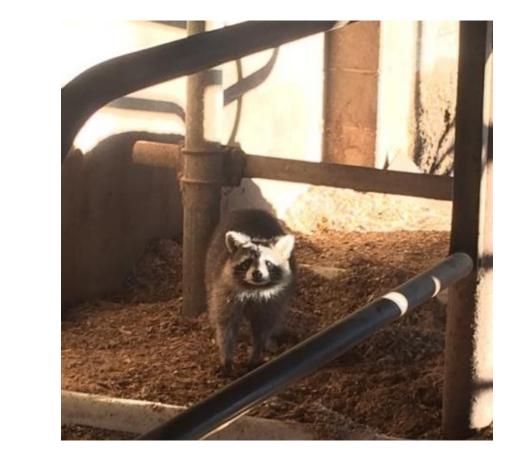
### **Too Much Infrastructure Needed**

#### New Name, Same Idea



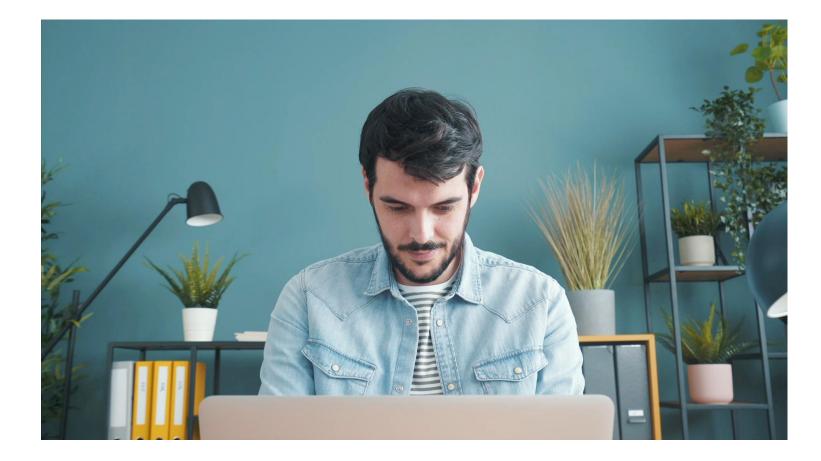
#### **Rodents and Other Farm Realities**





### **Lightning Strikes Twice**

# IT Guy Lesson



**Rural Connectivity Limits** 

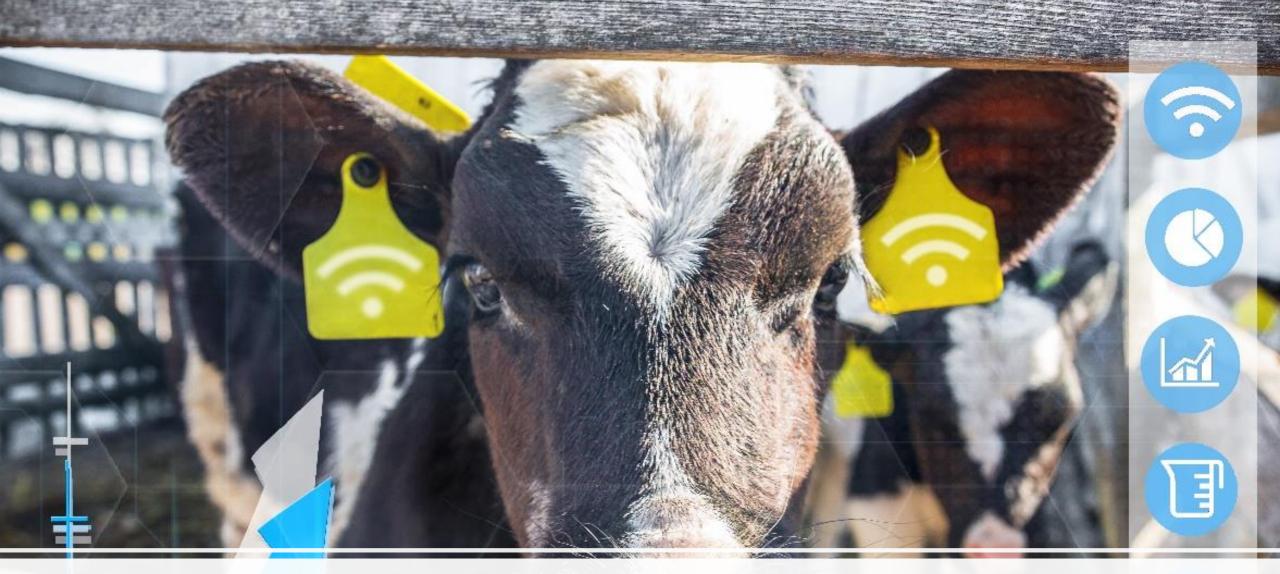


# Miscommunication of Development Stage

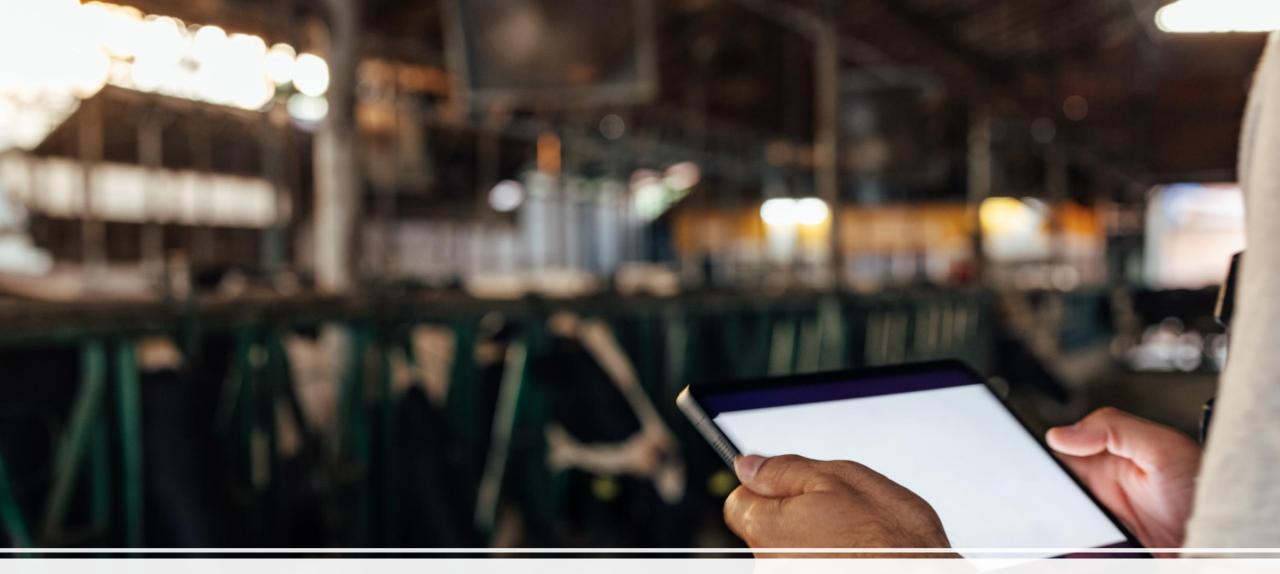




Stock

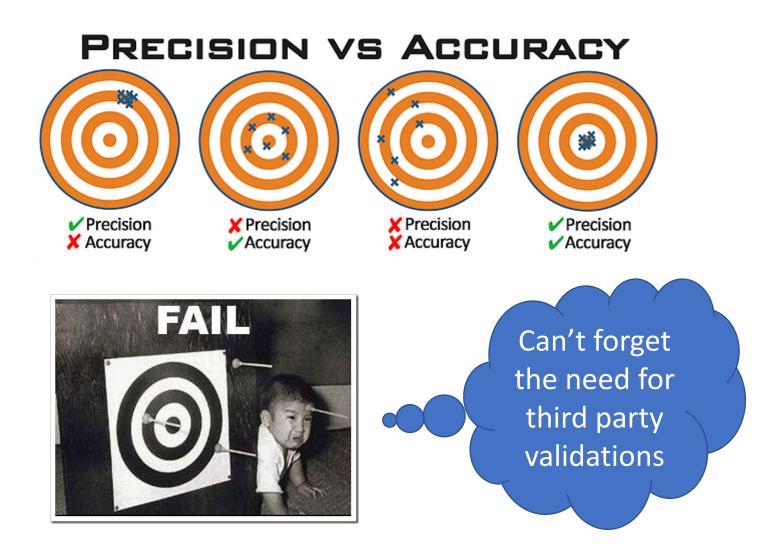


### Focus on Technology, Rather than Information

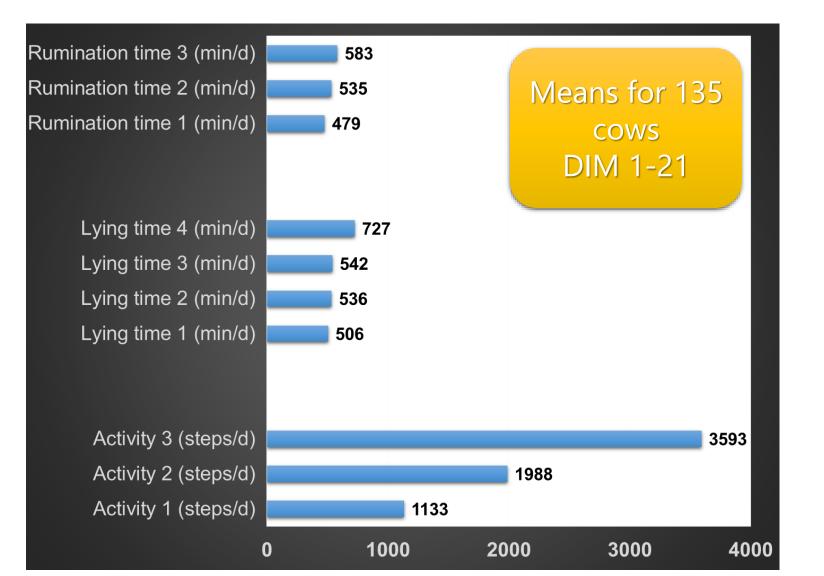


### Some Data Interesting but Not Useful

### Are we measuring the targets we intend to?



# $X \neq X$ and $Y \neq Y$



Jones et al., 2020

Data Dumps (No Information Interpretation)



# Software Interface Attributes

Cloud based interface

Smartphone application

Addresses needs of visual and verbal learners

Intuitive user interface

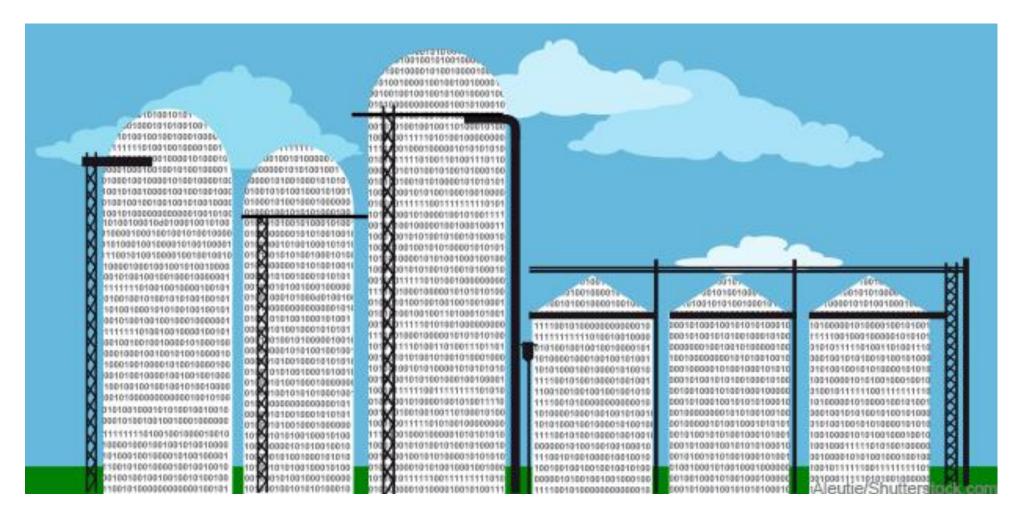
Interconnectivity with herd management software

Real-time data display

Indicators of what's most important and actionable

Customer focused training and support

## **Data Silos**

















### Too Costly to Justify Investment

20

Tomorrow's technological innovations are beyond what we can imagine. Let's dream big.



Never Lose Sight Of the Animals



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