

## **Traceability – Cost Burden or Profit Opportunity?**

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by William R. Pape, Chairman & CEO, AgInfoLink Global, Inc. –

David Larson, Director, Global Ag Services, John Deere –

Bill Jorgenson, CEO, eFarm

Today, many agricultural producers and food processors view traceability as a cost burden. Worse, some agricultural producers are seeing traceability not only as a cost burden, but one that also adds potential liability to their operation—liability they didn't have before traceability. With this perspective, why adopt traceability?

The perspective of traceability as a cost burden comes largely because many producers and processors view only one aspect of traceability – ownership traceability. Ownership traceability is the ability, in the event of a food safety or security issue, to trace back and trace forward ownership to determine the potential source of a problem, and eliminate potentially contaminated food from the supply chain. Ownership traceability is being discussed primarily by governments through the rollout of national identification programs to help contain disease or to limit the impact of a food security issue. In some instances these programs, only capture the farm of origin. In others, they track all owners from farm(s) to consumer (paper passport systems as used in Europe).

Viewing traceability as a cost burden, though, is a profit-limiting perspective. Traceability, done right, is much more than just ownership traceability – it's also the tracing of (1) product attributes and (2) the processes through which products have undergone on each appropriately sized unit of agricultural production during the product's journey from farm(s) to consumer. A product attribute is some measured or observed characteristic of the unit of production at some point in the supply chain -- the pH of a truckload of tomatoes is an attribute for a unit of production, or a steer's color. A product process is something done to the product in the supply chain -- giving an animal a vaccination or antibiotic shot, or spraying a field with a particular chemical.

The value of tracing product attributes and processes comes from maintaining the identity of the specific product and the corresponding attributes and processes associated with that product from farm(s) to consumer over many owners and many form changes (wheat to flour to dough to buns). For example, one of the findings we've seen is that when beef cattle are treated more than two times in their life for illness with antibiotics, usually by two separate owners, they generate substantially less revenue on a grid-based pricing system than animals who haven't received two separate treatments. Without tracking this process across the multiple owners a typical head of beef cattle has in its life, this profit-limiter wouldn't be obvious to later owners. A later owner, say a feedlot, who knows this fact can slot an animal into a different marketing program to maximize quality grade.

Determining the association between specific attributes and processes from an earlier, upstream owner that impact the outcome attribute of a downstream owner can add value to each link of the chain. And you don't necessarily need visibility over the entire chain.

Experience has shown that quite a bit of value can be added by tracking individual units of production within a single chain segment, or by connecting only two or more links in the chain. Each link adds more value.

During the past four plus years, eFarm, AgInfoLink Global, and teams at John Deere have been working together to determine how the tracing of product attributes and processes can add value to producers and processors at all stages of the food supply chain. The experience from pilot projects in the beef cattle industry, the baking industry and the processed tomato industry have shown us that traceability can add profit – sometimes substantial profit. And, by the way, ownership traceability comes along nearly for free, providing protection against potentially major loss from food safety or food security problems, whether natural or intentional.

What type of profit-enhancement are we talking about? The experience so far has shown that when members of the chain invest approximately 0.5% (half a percent) of the cost of the raw product paid by the first stage processor for each unit of production, they are reaping better than 2.0% to 5.0% increased profit – again based upon the revenue generated by the last agricultural producer who sells to the first food processor. In the beef cattle industry, for example, investing about \$5 per head of cattle has increased profitability by somewhere between \$25/head to \$75/head. And this effect isn't just with one pilot project with one customer. The AgInfoLink experience has documented over 50 case studies spanning multiple owners and a very large number of cattle. Other cattle companies have reported similar results. John Deere and eFarm efforts have shown nearly identical results in a wide range of other food products, from hamburger buns to tomatoes processed as catsup and spaghetti sauce. Traceability, when it focuses on attribute and process tracing, adds to the bottom line.

Today, any number of attributes and processes can be captured and tracked throughout the entire chain or segments of the chain. Because we have not historically had visibility on the entire food chain, we have not been able to determine which upstream attributes and processes are going to be important to product outcomes to downstream processors, retailers and consumers. Having visibility on the any part of the chain is teaching us many new lessons, almost all of which are not intuitive.

In future issues of *FTR* we will share our real-life experiences and explore the types of profit that product-attribute and process traceability have already begun to add to many companies. We will focus on specific case studies illustrating the profit-enhancing potential of attribute and process tracking. We invite your comments, questions and experiences.