

Where's the Beef? – Traceability Within a Single Operation

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Last month, we wrote that tracing attribute, process and ownership/location information on appropriately sized units of production across multiple owners in the supply chain adds value. Tracing is not a cost adder – it can add substantial profit. And the more segments of the supply chain you can include in the information sharing, the more benefit to every member of the supply chain. So where's the proof?

John Deere, AgInfoLink Global Inc., and eFarm have all generated a number of realworld customer examples of how companies have increased their profits by knowing information on appropriately sized units of production from one or more segments in their supply chain – information these companies previously didn't have. As we share some of these success stories, please remember that almost all of these companies have used these techniques to gain competitive advantage in their industry. Consequently, we haven't been able to share all their secrets. Only those that have agreed we can share. And only if we make them a bit general. With that said, this month we'll focus on examples from the beef cattle industry where AgInfoLink has been operating for over four years.

Within the beef cattle industry, as in every other agri-food industry with which we've become involved, the real innovation is the tool kit allowing management of individual units of production, rather than management of the blended group. Managing by the group is today's usual practice. Tomorrow's practice will be to manage by the appropriately sized unit of production. For beef cattle, the appropriately sized unit of production is the individual animal. Managing by the individual animal generates the value. Understanding this fact is important because companies that adopt these tools solely in their own operation are able to see quite a few benefits, even when the information is not shared with a single other participant in their supply chain. Without connecting to a single other member of their supply chain, companies can improve the bottom line. How can this be?

When beef cattle are managed as a large, blended group, say 100 to 250 head, there is relatively little variation from one group to another. In terms of revenue generated in the feedyard, there may be only about \$10/head difference between one pen of 250 head and another. This perceived lack of variability has led some cattle operators to assume that there is little benefit to be gained by managing at a smaller granularity unit. Nothing could be further from the truth.

If one looks at the revenue variability among individual animals in a feedlot pen when they are sold on a value-based grid, there can easily be between \$300 and \$500 a head spread from the best revenue generating animal to the worst! And these extremes are not aberrations. The average standard deviation for revenue within a pen of cattle can easily

be \$100 or more per head which means that nearly 20% of the cattle will generate at least \$100 per head more than the average, and 20% will generate at least \$100 per head less than the average. And within the 60% that cluster around the average, there's quite a bit of variation.

Profitability variation is equally broad within a feedyard. Using data from the Texas A&M "Ranch to Rail" project where they generated a profit and loss statement on each animal, the tale of two steers tells the complete story. These were relatively equivalent animals when they entered the feedlot but produced very different results. One animal was a white-faced, black animal (Certified Angus Beef candidate) weighing a hefty 590 pounds when it entered the feedyard and costing the feedyard \$61.00 per hundredweight. The other animal was a lighter (508 pounds), yellow animal costing the yard \$62.00 per hundredweight. Which was the better investment? Conventional wisdom would suggest the black animal would generate the most profit because it could qualify for the CAB premium. Again, the obvious conclusion led to disaster. The black steer, when all was said and done, lost \$15.56 for the yard because it's daily gain rate was only 2.4 pounds per day. The yellow steer gained at a 4.3 pounds per day and produced a profit for the yard of \$322.93. That's a spread of almost \$340. And these two animals were chosen AT RANDOM from a set of incoming animals.

So, the trick a feedyard needs to do is to determine how to get more of the higher revenue and higher profitability cattle.

Our customers have used a number of different applications to improve their bottom line. For example, a Canadian feedyard developed a theory about why some animals performed better than others did, and utilized the AgInfoLink system to manage improved performance. This operator noticed that when a group of animals are assembled in a feedyard pen, there is a very definite social pecking order. Animals lower in social status were not getting as much time at the feed trough, and they clearly won't perform well if they don't get enough access to food. They further noticed that approximately 15% of all animals in a pen were likely to have poor gain due to pecking order problems. By identifying these poor-doers (animals gaining less than 1.75 lb/day) at re-implant time (approximately 45 days into a 160-180 day feeding cycle) and segregating them into their own pen, the poor-doers increased their gain from less than 1.75 lb/day to over 3.0 lb/day.

Segregating the poor-doers into their own pens, required reordering of about six pens to ensure that pens remained full, but operators found this resorting to be well worth their effort. If one assumes that the improvement only affects about 50% of the poor-doers, and the benefits are averaged over EVERY animal in the feedlot, not just the poor-doers, the yard saw an increase in revenue of about **US \$8.65/head** on every animal in the yard on a total cost of about US \$5.00 for the complete system and the labor to do the resorting. If more than 50% of the poor-doers see improvement, the US \$8.65 can climb pretty substantially. The net profit increase is about US \$3.65 per head, and that is a 7% increase on the typical feedlot profit of \$50 per head.

Because the complete system enabled more than just the poor-doer application, other applications within the feedyard can increase the return on the \$5.00 investment. Another application that several feedyards have employed is to sort pens, commingling ownership, to avoid the discounts from the packinghouse for animals that are either too light or too heavy. These penalties are pretty harsh. Depending on the packinghouse, they may be as much as 40% to 50% of the average revenue if the animal is either too large or too small. If we assume that within a pen of 250 head, 1% of the animals would typically be subject to discounts and by using the individual management at re-implant time to resort these animals, we can easily see a 50% reduction in discounts. While this might seem to be a small reduction, eliminating 50% of the discount can add **another \$US \$5.65/head** on every animal in the feedyard. Adding this to the \$8.65/head improvement takes us to \$14.30 increased revenue on a \$5.00 investment. Now the net profit increase is about \$9.30/head or an increase of about 18.6% over the typical feedlot profit.

These are only two examples of traceability applications within a single company that have been used by feedlot operators to improve their bottom line. The moral of the story is that using the traceability tools within a single company's operation allows the company to begin reaping the traceability benefit, even when this information is not shared with another member of their supply chain. Profit increases, as these examples have shown, can be realized by managing your operation based on appropriately sized units of production. Beginning to connect the chain, as we'll see next month, only adds to the potential additional profits you can add to your operation.