# *Moving the Needle, Just a Little*

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January, in this column we reviewed the results of two, recently published, large-scale university studies showing how traceability has been able to deliver a very high return on investment, 300% or better, in real world settings. These two independent studies compared the market value of cattle that were traced versus cattle that were not, and involved over 600,000 head over a relatively long time period. The statistical analysis of these data from each study said there was only one chance in ten thousand that the results from that single study happened by chance. Since two independent studies showed the same result, the statistics say that there was better than a 99.999% chance traceability was the reason for this high ROI.

A typical reaction to this column was bewilderment. We had numerous food executives asking how traceability could provide this type of result. To us, this reaction was a bit like watching the awestruck expressions from a magician's audience. They see the act on the stage, and are impressed. But they don't understand how the trick was done. This month, we're going back-stage to explain some of the ways traceability can produce the results seen in these two different university studies, and how managers of agri-food companies should be embracing traceability technology to give their companies a new competitive edge.

To be fair, the two university studies we quoted last month didn't really extract the full value that can be extracted by using value traceability techniques. These two studies focused upon age, source and pre-conditioning verification of cattle that change hands many times during the animal's life. By maintaining identity from one owner to another, the final owner who sells the animal to the packing plant can positively assert the animals source and age. Since animals and their offal exported to East Asia must be below twenty months of age, and since there is a substantial premium for muscle meats and offal to East Asia, the market drivers for employing traceability are obvious. There's not much special magic in using traceability to satisfy an obvious, stated market need. But traceability still produced a 300% or greater return on investment.

To our minds, these two studies only scratched the surface of the value that can be unlocked when agri-food companies use traceability. The real value comes when agri-food company managers use traceability techniques to take their company to the next operational level, when value traceability is used to give managers a deeper understanding of the forces that are affecting their operation. And the managers use that new understanding to make operational changes that result in very large gains, either by increasing revenues or by reducing costs.

The major force that impacts agri-food company profitability is variability. In the agri-food industry, there is much more variability across a wide range of raw, incoming ingredient characteristics than plant managers and sales executives would like. For processed foods, agri-food plants are often designed to reduce as much of this variability from the final food product as possible. But the cost is high. For fresh food products, it's harder to disguise the variability, and buyers try to cherry-pick fresh product to meet their demanding specifications. The key to extracting a new level of value in the agri-food world is to get better control over this variability, and it turns out that you don't need to reduce the variability much to yield huge results.

Many agri-food executives have a somewhat fatalistic attitude towards the variability they find in their industry. Because most of the raw products that enter agri-food packing and processing factories is agricultural, grown on the farms and ranches and subject to Mother Nature's whims, agri-food managers often think they can't have much impact on the variability. They're wrong.

Let's look at three real-world case studies where value traceability has begun unlocking hidden value. The first example is one where a rancher who retained ownership of his animals to the packing plant was disappointed by the results. A recent lot of cattle produced only a very small premium to the cash price on the nearly 55,000 pounds of animals he just sent to market, and he wondered why he wasn't seeing the high return on investment we were reporting. Specifically, he saw only a sixteen cent per hundred-weight premium to the cash market on this lot of 43 head the packing plant just processed. Perplexed, he came to us to understand why he got the results that he saw. He felt that he had done all the right things. He'd pre-conditioned his cattle, he'd put individual identification on each animal and he'd tracked the animal all the way from his ranch through the stockering and feeding processes. But he still didn't get the premium, and the return on investment. Why?

We reminded the rancher that with individual animal identification, he no longer was restricted to operate at an animal group level. Historically, he'd managed his operation at the animal lot or group level. This most recent slaughter lot had 43 head, and even though he had invested in individual animal identification, he still treated the group as a single unit. He forgot that with individual animal identification he could dive into the data and focus on the profit for each individual animal, getting a much deeper understanding of what was impacting his operation.

When we reminded him that he could gain more understanding by drilling down to the individual animal, he remembered how to use his value traceability software tool and was surprised by what he found. Most of his animals were generating the premium to market that he would expect, but a very small handful, were generating huge discounts that erased almost all of the premiums. The net result was that the lot generated a mediocre performance even though most of the animals in the lot were stars. When he started to ask questions about why the small group of animals were dragging the rest down, he found some structural issues in his operation that, when solved, helped him rocket his ranch to a whole new profit level.

In another livestock example, we had the case where traceability was initially seen by the rancher as a serious impediment. For many generations this ranching family had been supplying the same feedyard with cattle, and because of the strong ties between the families, the ranching family typically was given a premium price for their cattle. Understanding the benefits of tagging their cattle with RFID to be able to manage individual animals, not just the herd, the ranching family continued supplying their friendly feedyard but this time they were individually identified. The next calf season when it came time to ship to the feedyard, the rancher was shocked that not only didn't they get the usual premium from the feedyard, but these new animals were discounted.

Shocked, the rancher wanted to understand why they were no longer getting the premium. The feedlot operator informed the rancher that in prior years, when the feedlot bought animals from the rancher they were immediately combined with animals from other ranchers and the ranch of origin identity was lost. Because the rancher had sold individually identified animals this last time, the feedyard could track the animal's progress even though they were co-mingled with animals from other owners. To the surprise of everyone, the animals the rancher last supplied had had a much higher death rate than was expected.

Now the rancher was really shocked because he knew he had given his animals all the vaccinations they needed to stay healthy at the feedyard. However, when he finally accepted the facts and began examining his operation, he found that his field staff had a bad habit of leaving the vaccine to be administered in strong sunlight, which had killed the modified live vaccine, substantially reducing the vaccine's effectiveness. Identifying this one operational flaw allowed the rancher to get back on track for the premiums paid for merit, not just because of personal relationship.

Finally, there's the case where a small change in product mix can have a huge return to the grower. In today's potato market, as in most raw agricultural product markets, there's a big revenue difference between what packers and processors pay for the highest quality versus the next highest quality and the lowest, or utility quality. For fresh potato growers recent markets paid about $10 per fifty pounds for #1 potatoes (the highest grade), about $7 per fifty pounds for #2's and $3.75 per fifty pounds for processed potatoes (the lowest commercial grade). Typically, the cost of production is about the same per acre regardless of the yield, so moving the needle just a bit to change the ratio of #1's, #2's and processed potatoes can have a huge impact on the bottom line because the added revenue drops straight to the bottom line.

If, for example, a fresh potato grower-packer-shipper saw a very wide variation in the packout percentage (the combined percentage of #1's and #2's versus processed) from his different farm fields, and he was able to determine the cause of this wide variation such that he could reduce a small part of the variability and increase by 5 percentage points, then he would be able to substantially add to his bottom line. More specifically, a 5 percentage point movement in the packout percentage, say from 63% to 68% on a 70 million pound yield produces an additional $310,000 profit, a non-trivial result. And moving the needle only five percentage points is well within the scope of what we've seen in the past nine years of applying value traceability tools to assist agri-food companies.

In each of these examples, agri-food managers used value traceability tools to first understand the forces affecting their operations and then make changes which enhanced their bottom lines. It's not magic, but it takes the willpower and commitment to change the way the agri-food company operates. The choice is clear.

Further information can be found at www.aginfolink.com.