

How to prepare for traceability

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Submitted as an article for the September 2002 issue of Food Traceability Report.

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Regardless of the motivation for beginning a traceability project, there are some key principles you should keep in mind to maximize the probability of success.

Begin with the end in mind

Too many clients begin thinking about traceability as a fishing expedition. They don't know exactly what they will do with the product attribute, process, and ownership/location information they collect. So they collect as much data as they can, and they try to connect as many links in their food processing chain as possible.

The project sometimes grows so large and unfocused that it's scrapped even before it gets off the ground. Or, if it does get started, it's scrapped before tangible results are generated. Rather than use a shotgun approach, think about a narrowly defined rifle shot for your first traceability project. Determine the specific management problem you want to solve, and then be very disciplined to avoid project creep.

You don't have to consider traceability projects for recall activities only. Use the traceability technology to solve the problems your plant faces today. Among the problems that traceability technology have helped solve finding and reducing cost inefficiencies; automating a process to generate savings, and determining the appropriate raw materials to boost bottom-line performance.

So, identify a problem you want to solve, work with traceability technology experts to determine the appropriateness of this technology on this problem,. Define the outcome you'd like to see, such as reducing the cost of generating the piece-rate worker payroll by 25% or increasing yield on this product by 3%..

Five variables are often enough

The next critical lesson is to keep the project small. There is always the tendency to add one more feature or function to the project. Resist that temptation. Also resist the temptation to expand the number of attribute variables that are collected. Sometimes five variables, accurately captured on individual units of production, are more than enough to show you the power of traceability and to demonstrate the value. We see too many companies try to capture 30, 40 or even several hundred attributes during the first project. The company's motivation is to be thorough. They believe that as long as they are collecting information, they should exhaustively collect every variable they can imagine. This type of thinking has expanded projects well beyond what's economically viable, and has delayed the company realizing an immediate payback and benefit from adopting traceability.

One of our customers collected exactly five product attribute variables about each unit of incoming supply. There was pressure to initially collect more data, but managers resisted

the impulse. With a relatively small amount of data to be collected on each incoming load, and limiting the data collected through their plant to the key outcome variables for a single product – yield, the top one or two quality variables, and percent wastage, we were able to rapidly build a tracing solution that quickly pinpointed which of the incoming raw materials best optimized their plant operation.

One link is often enough

In addition to the amount of data collected, you need to discipline yourself to minimize the number of steps in the production chain you initially link. Trying to link everyone in the chain on Day One doesn't work. Agri-food supply chains are very complex. The best approach is to pick the segment of the chain that is likely to yield the highest return.. In the example above, the traceability project collecting only five initial variables linked only the grower and the first stage or raw ingredient processing. And it didn't connect the grower's data from the field, only the information on each delivery truck of product as it arrived after harvest. The data from the scale ticket on each load was then compared with the first stage processing output of the load – a relatively simple two-link system. Once this two-link system was up and running and the data were providing the information to make management decisions about the appropriate variety to source, the project was expanded to extend tracing to the next downstream process – the production of the final food product. This third link added even more information for the buyers and allowed them to fine-tune their purchasing criteria. The next step in this project will be to go further upstream to collect agronomic information prior to harvest. Adding this fourth link will now allow the company to do data-mine the information to determine if there are agronomic practices that will positively affect profitability. We believe we will find such relationships for that client, as we have with other clients.

Processes are continuous

In the example above, it would be easy to conclude that once one had determined the varieties that yielded the highest profit for the processing plant, the job was done. Unfortunately, nothing could be further from the truth. Manufacturing is a process, and processes to remain stable, require continuous monitoring. Just as statistical process control has reshaped manufacturing in the automotive, aerospace, appliance and almost all heavy industries in the developed world, it can have a very positive impact on the agri-food industry when the traceability technology is used to link the various stages of production.

Think GEM

Don't fall into the trap of thinking that the answer to all agrifood problems is determining the correct variety. All the work we've collectively done has shown that the final results come from a mix of variety (Genetics), the Environment (where it is grown), and the Management practices used to grow or process the product.

Identify your target up front

One of the major innovations introduced by traceability technology is tracking each unit of production through the agrifood chain.

Determining the appropriate size to be tracked for each product state is one of the

important first tasks. In the earlier example, the initial unit of production was the truckload of product. This might be a single variety from a single field from a single grower, or it might be a blended combination. For that project, the unit of production chosen was the incoming truck. The rule was that for every combination of grower, field, and variety there would be a separate incoming ticket – even if a single truck contained a mixture of product sources.

While one cannot take a single unit of final product and tie it back to a single farm field, one can prune the supply chain tree quite a bit and can zero in on the range of specific product at each stage of production that contributed to the final product. Pruning this complex supply matrix typically shows that only a small percentage of all raw, incoming product is a possible source of product in a single final product. Having this level of specificity has been quite adequate for delivering real value.

Pull the trigger

One of the saddest things we've seen is failure to act. A livestock client of ours had a system in place that clearly showed when it was time to harvest, and the system accuracy was extremely high during the trials. When the system said "harvest", there was a high probability that profit would be maximized. However, because this system was very new to the field manager, who typically made the decision by "eye," it was distrusted. The field manager continued with his past practices, and executives wondered why they weren't seeing in full production the benefits they saw during the trials.

To help avoid this pitfall, we should have asked the field manager divide his operation into two parts – one part where the system made the harvest call, and the other part where the field manager continued managing the way he had always managed. With an approach offering immediate feedback, we're confident the field manager would have been much more comfortable in the transition.

Involve your people

Successful implementation of a traceability project is ultimately dependent upon people. In the agrifood industry, many managers have been doing their jobs for many years and perceive themselves to be expert in what they do. A traceability project needs to involve as many staff critical to the project success as early in the project as possible. Ensuring that your key people are involved with project from early stages removes much of the "magic" and mystery from the traceability tools, and keeps the ultimate rollout from being seen as a contest between human and computer. Rather, your people view the new traceability technology as just one more tool to help them do a better job.

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