

# Modernization and Technology

### Situation Overview:

*As shared by Andy Bollinger*

- A. *Detail the farm's reasoning behind the decision to pursue a modernization plan.* Our previous modernization and expansion for Meadow Spring Farm was 16 years ago. On a weekend in February 2012, my dad was a substitute milker for me and realized some of our parlor's inefficiencies. By the time I returned from my vacation, he had started researching new parlor options. We realized that we could cut our labor costs, with less stress on our cows because we would reduce the time they spent in holding pens. There were times when our cows would spend two hours per milking in the holding pen, three milkings per day.
- B. *List the key variables that impacted the decision to move ahead with the plan.* We could fully pay for the new parlor, a Double-12 parlor, rapid exit, vertical lift, with labor cost cuts alone. We showed our plan to our lender, and he told us we could start without a formal approval. The new parlor reduced two hours, per shift, per day which equated to two employees or 12 labor hours per day. Total savings, with the new parlor, was approximately \$70,000 per year. This modernization plan also allowed us to milk 40 more cows an hour.
- C. *The following modernization areas apply to our farm and describe the incorporation of technology.*
- Young stock facilities – New barn with mechanical curtain, concrete and wood. Group hutches removed, but small hutches remain for our kids to feed calves.
  - Milking cow facilities – Double-12 parlor, rapid exit, and vertical lift.
  - Manure management and storage – Compost barn in 2012. With PENNVEST application, we added a roof over the compost pile.
  - Other – Improved storm water runoff.

### Challenges and Opportunities:

- D. *What were the different options the transformation team considered as they worked together to pursue this plan? Please describe.* Adding a new parlor was not part of the original transformation plan, but once we realized the cow comfort advantages and cost savings, we decided to move forward. We already knew which parlor we wanted for our farm. We also knew we wanted to keep our variable speed pump and other energy efficient items. To ventilate the parlor, we wanted the fan to be in the ceiling, rather than hanging in the parlor. We built two chimneys, with fans pointing down vertically, instead of horizontally. Dan McFarland, Penn State, helped us with the design. Our previous parlor experience helped us know the corral gate and sort gate that would work best with the parlor.

## Modernization and Technology...continued

E. *Did any barriers, or bottlenecks, occur during the project, and if yes, how did the team overcome those issues?* There were no big bottlenecks during this portion of our project. Our biggest challenge was continuing to milk in our old parlor, while building the new parlor. It was a step-by-step process. We moved the bulk tank first, and built a new milk house. Finally, we built the new parlor and the old parlor became a utility room.

Fisher & Thompson, our local equipment dealer, was a huge help to us. They worked through the logistics and how to overcome any obstacles in daily meetings. Everyone was communicating in those meetings – contractors, employees and the family.

### Actions:

F. *How did the work done on a business plan or feasibility study impact the farm's final decisions?* There was no actual business plan. We pushed the pencil and our lender easily agreed with our decision. The lender's decision boosted our confidence and we trusted our business instincts.

G. *How long did the project take, start to finish?* We began talking about a new parlor in February 2012, and we paid our final bills and signed a loan in January 2013. Construction began in April 2012 and finished in November 2012.

### Results:

H. *How did the modernization and new technology change the business as it relates to profitability? Can the farm quantify labor savings, energy savings or environmental impact?* As discussed earlier, we easily can quantify our labor savings. From an energy perspective, the new parlor does not run as long as our old parlor. We have the same exact vacuum pump, but the new cooling compressor is much more efficient. It cools the milk faster, with larger plate coolers. We estimate our electric bill is 10% less, as compared to previous year. From an environmental impact perspective, we do haul more manure because we added 20 cows and also the new parlor uses more water – more flushing of the floors, etc. – as compared to the old parlor.

### Modernization and Technology...continued

I. *Did the modernization and new technology change management practices on the farm?* Yes. We now have fewer employees and changed our milking procedures. Employees charged with milkings stayed, but they log fewer hours. We trained our milkers that stayed with us to perform other jobs, before and after their milking shifts. As of January 2014, we have 15 total employees.

During the construction project, we also learned about the FutureCow™ Teatscrubber cow prep system and installed it in our parlor. FutureCow provides a mechanism to wash, disinfect, wipe dry and stimulate the cows' teats prior to milking.

J. *Have you learned anything that has influenced future decision making about technology or given you a new enthusiasm for some aspect of modernization?* The new parlor has improved our quality of life, making milking easier for our family and employees. While we are in the new parlor about the same amount of time as the old parlor during a shift, it's easier for us because there is much less walking and bending. We are consistently out of the barn by 5:30 p.m., instead of 6:45 p.m.

K. *Has the farm shared the new facilities or technology (milking facilities, manure management, etc.) with others in the community? If yes, what was the response from the community?* We hosted an Open House with the Center for Dairy Excellence on July 16, 2013. Despite the 95 degree heat and on-going wheat harvest, almost 200 people came to the farm. We had a positive response from those that attended the Open House, asking questions and thinking about their farming future.

In October 2013, State Representative Gordon Denlinger visited our farm. He was impressed with our farm's conservation efforts and interviewed our family for his ["Legislative Report" video series](#).

